

TSG-RAN Meeting #19
Birmingham, UK, 11 - 14 March 2003

RP-030106

Title: CRs (Release '99 and Rel-4/Rel-5 category A) to TS 25.331 (4)

Source: TSG-RAN WG2

Agenda item: 8.2.3

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Date	Doc-2nd-Level	Workitem
25.331	1885	-	R99	Correction of signalling of transport block size for DSCH	F	3.13.0	3.14.0	04/03/2003	R2-030580	TEI
25.331	1886	-	Rel-4	Correction of signalling of transport block size for DSCH	A	4.8.0	4.9.0	04/03/2003	R2-030581	TEI
25.331	1887	-	Rel-5	Correction of signalling of transport block size for DSCH	A	5.3.0	5.4.0	04/03/2003	R2-030582	TEI
25.331	1888	-	R99	PS service continuity when moving between 3G and 2G	F	3.13.0	3.14.0	04/03/2003	R2-030583	TEI
25.331	1889	-	Rel-4	PS service continuity when moving between 3G and 2G	A	4.8.0	4.9.0	04/03/2003	R2-030584	TEI
25.331	1890	-	Rel-5	PS service continuity when moving between 3G and 2G	A	5.3.0	5.4.0	04/03/2003	R2-030585	TEI
25.331	1891	1	R99	Multiple activations of the same compressed mode pattern	F	3.13.0	3.14.0	04/03/2003	R2-030631	TEI
25.331	1892	1	Rel-4	Multiple activations of the same compressed mode pattern	A	4.8.0	4.9.0	04/03/2003	R2-030632	TEI
25.331	1893	1	Rel-5	Multiple activations of the same compressed mode pattern	A	5.3.0	5.4.0	04/03/2003	R2-030633	TEI
25.331	1894	-	R99	Setting of ciphering activation time for TM bearers.	F	3.13.0	3.14.0	04/03/2003	R2-030592	TEI
25.331	1895	-	Rel-4	Setting of ciphering activation time for TM bearers.	A	4.8.0	4.9.0	04/03/2003	R2-030593	TEI
25.331	1896	-	Rel-5	Setting of ciphering activation time for TM bearers.	A	5.3.0	5.4.0	04/03/2003	R2-030594	TEI

CHANGE REQUEST

25.331 CR 1885 # rev - # Current version: 3.13.0

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 Core Network

Title:	# Correction of signalling of transport block size for DSCH		
Source:	# TSG-RAN WG2		
Work item code:	# TEI Date: # 07/02/2003		
Category:	# F Release: # R99		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>
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Reason for change: # When DSCH is used the transport block size is not an integer number of octets. According to 25.321, for DTCH or DCCH mapped onto DSCH the MAC PDU is made up from:

- RLC-PDU - integer number of octets (only RLC AM/UM can be used on DSCH)
- UE-Id type field - 2 bits
- DSCH-RNTI - 2 octets
- C/T field (if MAC multiplexing is applied) - 4 bits

However the RRC signalling does not currently permit the signalling of transport block sizes that are a non-integer number octets block sizes for DSCH.

The IE 'Transport Format Set' signals the transport block size differently for dedicated transport channels and common transport channels. For the CHOICE 'Dedicated transport channels' and 'Common transport channels' respectively, the semantic description states the following:

'The transport channel that is configured with this TFS is of type DCH', and

'The transport channel that is configured with this TFS is of a type not equal to DCH'

Hence it is clear from the specification that the CHOICE 'Common transport channels' is used for DSCH. For the CHOICE 'Common transport channels' the tabular description indicates that the block size is Integer(0..4992). However, the ASN.1 signals the block size with the IE OctetModeRLC_SizeInfoType2 which only permits the signalling of an integer number of octets.

This problem applies to FDD only.

Summary of change: ⌘ The proposed to change section 8.6.5.1 to define how the UE calculates the transport block size for DSCH from the RLC size which is signalled as an integer number of octets by the IE OctetModeRLC_SizeInfoType2. The change is made is such a way to have no impact on TDD.

Isolated Impact Analysis

Functionality corrected: DSCH for FDD (Signalling of Transport Format Set)

Isolated impact statement: Correction to a function where specification was incorrect.

If UTRAN does not implement the CR, then it will not be possible to signal valid transport block sizes for DSCH.

If UTRAN implements the CR, but a UE supporting DSCH does not implement the CR, then the configuration procedure for DSCH could fail.

Consequences if not approved: ⌘ If the CR is not approved then it will not be possible to signal any valid transport block sizes for DSCH transport channels. It will not be possible to use DSCH in FDD.

Clauses affected: ⌘ 8.6.5.1

Other specs affected:

Y	N
	X
X	
	X

Other core specifications
Test specifications
O&M Specifications

⌘ Tests for DSCH are currently being drafted. This issue is already known to those drafting the tests.

Other comments: ⌘

How to create CRs using this form:

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

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

8.6.5.1 Transport Format Set

If the IE "Transport format set" is included, the UE shall:

- 1> if the transport format set is a RACH TFS received in System Information Block type 5 or 6, and CHOICE "Logical Channel List" has a value different from "Configured":
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a System Information Block, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a message on a DCCH, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the value of any IE "RB identity" (and "Logical Channel" for RBs using two UL logical channels) in the IE "Logical channel list" does not correspond to a logical channel indicated to be mapped onto this transport channel in any RB multiplexing option (either included in the same message or previously stored and not changed by this message); or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "Configured" while it is set to "All" or given as an "Explicit List" for any other RLC size; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "All" and for any logical channel mapped to this transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is given as an "Explicit List" that contains a logical channel for which the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for all the RLC sizes defined for that transport channel are given as "Explicit List" and if one of the logical channels mapped onto this transport channel is not included in any of those lists; or
- 1> if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is also set to "Configured"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list" and if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is given as an "Explicit List" that includes an "RLC size index" that does not correspond to any RLC size in this "Transport Format Set"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list", and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the total number of configured transport formats for the transport channel exceeds maxTF:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the IE "Transport format set" is considered as valid according to the rules above:

- 2> remove a previously stored transport format set if this exists for that transport channel;
- 2> store the transport format set for that transport channel;
- 2> consider the first instance of the parameter *Number of TBs and TTI List* within the *Dynamic transport format information* to correspond to transport format 0 for this transport channel, the second to transport format 1 and so on;
- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Dedicated transport channel":
 - 3> calculate the transport block size for all transport formats in the TFS using the following

$$\begin{array}{ll} \text{TB size} = \text{RLC size} + \text{MAC header size} & \text{if "RLC size"} \neq 0, \\ \text{TB size} = 0 & \text{if "RLC size"} = 0, \end{array}$$

where:

- MAC header size is calculated according to [15] if MAC multiplexing is used. Otherwise it is 0 bits;
- 'RLC size' reflects the RLC PDU size.

- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Common transport channel":

3> [for FDD:](#)

[4> for transport channels other than DSCH](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

[4> for DSCH transport channels](#) calculate the transport block size for all transport formats in the TFS using the following:

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[where:](#)

- [MAC header size is calculated according to \[15\];](#)
- ['RLC size' reflects the RLC PDU size.](#)

[3> for TDD](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

- 2> if the IE "Number of Transport blocks" $\neq 0$ and IE "RLC size" = 0, no RLC PDU data exists but only parity bits exist for that transport format;
- 2> if the IE "Number of Transport blocks" = 0, neither RLC PDU neither data nor parity bits exist for that transport format;
- 2> perform the actions as specified in subclause 8.5.21.

For configuration restrictions on Blind Transport Format Detection, see [27].

10.3.5.23 Transport Format Set

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE <i>Transport channel type</i> >Dedicated transport channels	MP			The transport channel that is configured with this TFS is of type DCH
>>Dynamic Transport Format Information	MP	1 to <maxTF>		
>>>RLC Size	MP		Integer(0..4992)	Unit is bits
>>>Number of TBs and TTI List	MP	1 to <maxTF>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Transmission Time Interval	CV- <i>dynamicTTI</i>		Integer(10,20,40,80)	Unit is ms.
>>>>Number of Transport blocks	MP		Integer(0..512)	
>>>CHOICE <i>Logical Channel List</i>	MP			The logical channels that are allowed to use this RLC Size
>>>>ALL			Null	All logical channels mapped to this transport channel.
>>>>Configured			Null	The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise
>>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.
>>>>>RB Identity	MP		RB identity 10.3.4.16	
>>>>>LogicalChannel	CH-UL- <i>RLCLogicalChannels</i>		Integer(0..1)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11	
>Common transport channels				The transport channel that is configured with this TFS is of a type not equal to DCH
>>Dynamic Transport Format Information	MP	1 to <maxTF>		Note
>>>RLC Size	MP		Integer(0..4992)	Unit is bits
>>>Number of TBs and TTI List	MP	1 to <maxTF>		Present for every valid number of TB's (and TTI) for this RLC Size.
>>>>Number of Transport blocks	MP		Integer(0..512)	
>>>>CHOICE <i>mode</i>	MP			
>>>>>FDD				(no data)
>>>>>TDD				
>>>>>Transmission Time Interval	CV- <i>dynamicTTI</i>		Integer(10,20,40,80)	Unit is ms.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
	/			
>>>CHOICE <i>Logical Channel List</i>	MP			The logical channels that are allowed to use this RLC Size.
>>>>ALL			Null	All logical channels mapped to this transport channel.
>>>>Configured			Null	The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise
>>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.
>>>>>RB Identity	MP		RB identity 10.3.4.16	
>>>>>LogicalChannel	CV-UL-RLC <i>LogicalChannels</i>		Integer(0..1)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11	

Condition	Explanation
<i>dynamicTTI</i>	This IE is mandatory present if dynamic TTI usage is indicated in IE Transmission Time Interval in Semi-static Transport Format Information. Otherwise it is not needed.
<i>UL-RLCLogicalChannels</i>	If "Number of uplink RLC logical channels" in IE "RB mapping info" in this message is 2 or the IE "RB mapping info" is not present in this message and 2 UL logical channels are configured for this RB, then this IE is mandatory present. Otherwise this IE is not needed.

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in [34].

CHANGE REQUEST

25.331 CR 1886 # rev - # Current version: 4.8.0

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 Core Network

Title:	# Correction of signalling of transport block size for DSCH		
Source:	# TSG-RAN WG2		
Work item code:	# TEI	Date:	# 07/02/2003
Category:	# A	Release:	# Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(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 be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

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The IE 'Transport Format Set' signals the transport block size differently for dedicated transport channels and common transport channels. For the CHOICE 'Dedicated transport channels' and 'Common transport channels' respectively, the semantic description states the following:

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Hence it is clear from the specification that the CHOICE 'Common transport channels' is used for DSCH. For the CHOICE 'Common transport channels' the tabular description indicates that the block size is Integer(0..4992). However, the ASN.1 signals the block size with the IE OctetModeRLC_SizeInfoType2 which only permits the signalling of an integer number of octets.

This problem applies to FDD only.

Summary of change: ⌘ The proposed to change section 8.6.5.1 to define how the UE calculates the transport block size for DSCH from the RLC size which is signalled as an integer number of octets by the IE OctetModeRLC_SizeInfoType2. The change is made is such a way to have no impact on TDD.

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Isolated impact statement: Correction to a function where specification was incorrect.

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Clauses affected: ⌘ 8.6.5.1

Other specs affected:

Y	N	
	X	Other core specifications
X		Test specifications
	X	O&M Specifications

⌘ Tests for DSCH are currently being drafted. This issue is already known to those drafting the tests.

Other comments: ⌘

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If the IE "Transport format set" is included, the UE shall:

- 1> if the transport format set is a RACH TFS received in System Information Block type 5 or 6, and CHOICE "Logical Channel List" has a value different from "Configured":
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a System Information Block, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a message on a DCCH, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the value of any IE "RB identity" (and "Logical Channel" for RBs using two UL logical channels) in the IE "Logical channel list" does not correspond to a logical channel indicated to be mapped onto this transport channel in any RB multiplexing option (either included in the same message or previously stored and not changed by this message); or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "Configured" while it is set to "All" or given as an "Explicit List" for any other RLC size; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "All" and for any logical channel mapped to this transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is given as an "Explicit List" that contains a logical channel for which the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for all the RLC sizes defined for that transport channel are given as "Explicit List" and if one of the logical channels mapped onto this transport channel is not included in any of those lists; or
- 1> if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is also set to "Configured"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list" and if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is given as an "Explicit List" that includes an "RLC size index" that does not correspond to any RLC size in this "Transport Format Set"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list", and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the total number of configured transport formats for the transport channel exceeds maxTF:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the IE "Transport format set" is considered as valid according to the rules above:

- 2> remove a previously stored transport format set if this exists for that transport channel;
- 2> store the transport format set for that transport channel;
- 2> consider the first instance of the parameter *Number of TBs and TTI List* within the *Dynamic transport format information* to correspond to transport format 0 for this transport channel, the second to transport format 1 and so on;
- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Dedicated transport channel":
 - 3> calculate the transport block size for all transport formats in the TFS using the following

$$\begin{array}{ll} \text{TB size} = \text{RLC size} + \text{MAC header size} & \text{if "RLC size"} \neq 0, \\ \text{TB size} = 0 & \text{if "RLC size"} = 0, \end{array}$$

where:

- MAC header size is calculated according to [15] if MAC multiplexing is used. Otherwise it is 0 bits;
- 'RLC size' reflects the RLC PDU size.

- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Common transport channel":

3> [for FDD:](#)

4> [for transport channels other than DSCH](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

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- ['RLC size' reflects the RLC PDU size.](#)

3> [for TDD](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

- 2> if the IE "Number of Transport blocks" $\neq 0$ and IE "RLC size" = 0, no RLC PDU data exists but only parity bits exist for that transport format;
- 2> if the IE "Number of Transport blocks" = 0, neither RLC PDU neither data nor parity bits exist for that transport format;
- 2> perform the actions as specified in subclause 8.5.21.

For configuration restrictions on Blind Transport Format Detection, see [27].

CHANGE REQUEST

⌘ 25.331 CR 1887 ⌘ rev - ⌘ Current version: 5.3.0 ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction of signalling of transport block size for DSCH
Source:	⌘ TSG-RAN WG2
Work item code:	⌘ TEI Date: ⌘ 07/02/2003
Category:	⌘ A Release: ⌘ Rel-5
Use <u>one</u> of the following categories:	
F (correction)	
A (corresponds to a correction in an earlier release)	
B (addition of feature),	
C (functional modification of feature)	
D (editorial modification)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	
Use <u>one</u> of the following releases:	
2 (GSM Phase 2)	
R96 (Release 1996)	
R97 (Release 1997)	
R98 (Release 1998)	
R99 (Release 1999)	
Rel-4 (Release 4)	
Rel-5 (Release 5)	
Rel-6 (Release 6)	

Reason for change: ⌘ When DSCH is used the transport block size is not an integer number of octets. According to 25.321, for DTCH or DCCH mapped onto DSCH the MAC PDU is made up from:

- RLC-PDU - integer number of octets (only RLC AM/UM can be used on DSCH)
- UE-Id type field - 2 bits
- DSCH-RNTI - 2 octets
- C/T field (if MAC multiplexing is applied) - 4 bits

However the RRC signalling does not currently permit the signalling of transport block sizes that are a non-integer number octets block sizes for DSCH.

The IE 'Transport Format Set' signals the transport block size differently for dedicated transport channels and common transport channels. For the CHOICE 'Dedicated transport channels' and 'Common transport channels' respectively, the semantic description states the following:

'The transport channel that is configured with this TFS is of type DCH', and

'The transport channel that is configured with this TFS is of a type not equal to DCH'

Hence it is clear from the specification that the CHOICE 'Common transport channels' is used for DSCH. For the CHOICE 'Common transport channels' the tabular description indicates that the block size is Integer(0..4992). However, the ASN.1 signals the block size with the IE OctetModeRLC_SizeInfoType2 which only permits the signalling of an integer number of octets.

This problem applies to FDD only.

Summary of change: ⌘ The proposed to change section 8.6.5.1 to define how the UE calculates the transport block size for DSCH from the RLC size which is signalled as an integer number of octets by the IE OctetModeRLC_SizeInfoType2. The change is made is such a way to have no impact on TDD.

Isolated Impact Analysis

Functionality corrected: DSCH for FDD (Signalling of Transport Format Set)

Isolated impact statement: Correction to a function where specification was incorrect.

If UTRAN does not implement the CR, then it will not be possible to signal valid transport block sizes for DSCH.

If UTRAN implements the CR, but a UE supporting DSCH does not implement the CR, then the configuration procedure for DSCH could fail.

Consequences if not approved: ⌘ If the CR is not approved then it will not be possible to signal any valid transport block sizes for DSCH transport channels. It will not be possible to use DSCH in FDD.

Clauses affected: ⌘ 8.6.5.1

Other specs affected:

Y	N
	X
X	
	X

Other core specifications
Test specifications
O&M Specifications

⌘ Tests for DSCH are currently being drafted. This issue is already known to those drafting the tests.

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://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.5.1 Transport Format Set

If the IE "Transport format set" is included, the UE shall:

- 1> if the transport format set is a RACH TFS received in System Information Block type 5 or 6, and CHOICE "Logical Channel List" has a value different from "Configured":
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a System Information Block, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a message on a DCCH, and CHOICE "Logical Channel List" has a value different from 'ALL':
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the value of any IE "RB identity" (and "Logical Channel" for RBs using two UL logical channels) in the IE "Logical channel list" does not correspond to a logical channel indicated to be mapped onto this transport channel in any RB multiplexing option (either included in the same message or previously stored and not changed by this message); or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "Configured" while it is set to "All" or given as an "Explicit List" for any other RLC size; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "All" and for any logical channel mapped to this transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is given as an "Explicit List" that contains a logical channel for which the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for all the RLC sizes defined for that transport channel are given as "Explicit List" and if one of the logical channels mapped onto this transport channel is not included in any of those lists; or
- 1> if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is also set to "Configured"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list" and if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is given as an "Explicit List" that includes an "RLC size index" that does not correspond to any RLC size in this "Transport Format Set"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list", and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the total number of configured transport formats for the transport channel exceeds maxTF:
 - 2> keep the transport format set if this exists for that transport channel;
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the IE "Transport format set" is considered as valid according to the rules above:

- 2> remove a previously stored transport format set if this exists for that transport channel;
- 2> store the transport format set for that transport channel;
- 2> consider the first instance of the parameter *Number of TBs and TTI List* within the *Dynamic transport format information* to correspond to transport format 0 for this transport channel, the second to transport format 1 and so on;
- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Dedicated transport channel":
 - 3> calculate the transport block size for all transport formats in the TFS using the following

$$\begin{array}{ll} \text{TB size} = \text{RLC size} + \text{MAC header size} & \text{if "RLC size"} \neq 0, \\ \text{TB size} = 0 & \text{if "RLC size"} = 0, \end{array}$$

where:

- MAC header size is calculated according to [15] if MAC multiplexing is used. Otherwise it is 0 bits;
- 'RLC size' reflects the RLC PDU size.

- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Common transport channel":

3> [for FDD:](#)

4> [for transport channels other than DSCH](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

4> [for DSCH transport channels](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\begin{array}{ll} \text{TB size} = \text{RLC size} + \text{MAC header size} & \text{if "RLC size"} \neq 0, \\ \text{TB size} = 0 & \text{if "RLC size"} = 0, \end{array}$$

[where:](#)

- [MAC header size is calculated according to \[15\];](#)
- ['RLC size' reflects the RLC PDU size.](#)

3> [for TDD](#) calculate the transport block size for all transport formats in the TFS using the following:

$$\text{TB size} = \text{RLC size.}$$

- 2> if the IE "Number of Transport blocks" $\neq 0$ and IE "RLC size" = 0, no RLC PDU data exists but only parity bits exist for that transport format;
- 2> if the IE "Number of Transport blocks" = 0, neither RLC PDU neither data nor parity bits exist for that transport format;
- 2> perform the actions as specified in subclause 8.5.21.

For configuration restrictions on Blind Transport Format Detection, see [27].

CHANGE REQUEST

25.331 CR 1888 # rev - # Current version: 3.13.0

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 Core Network

Title:	# PS service continuity when moving between 3G and 2G		
Source:	# TSG-RAN WG2		
Work item code:	# TEI Date: # 17 February 2003		
Category:	# F Release: # R99		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>
<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>		

Reason for change: #	<p>1. CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is currently also applicable to the case in which there is no PS signalling connection, but the text in TS 24.008 does not cover such case.</p> <p>2. Inter-RAT cell reselection from UTRAN procedure.</p> <p>2.a. The current procedure always require "the establishment of a connection" in the target system, but in TS 24.008 it is stated that in some cases there is no need for such establishment.</p> <p>2.b. In case of selection of a GSM/GPRS cell, it is not clear what the "establishment of a connection" is.</p> <p>3. Inter-RAT cell reselection to UTRAN procedure.</p> <p>The current text seems to mandate an RRC CONNECTION REQUEST procedure in every case of Inter-RAT cell reselection to UTRAN procedure. The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures.</p> <p>4. CELL CHANGE ORDER TO UTRAN procedure.</p> <p>The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures</p>
Summary of change: #	<p>1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is only applicable if there is a PS signalling connection, i.e. only if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the PS Domain. In all other cases the UE can ignore the message.</p> <p>2. Changes to Inter-RAT cell reselection from UTRAN procedure.</p>

2.a. The success of the procedure is indicated by the camping on a cell in the target system. After this, the UE shall immediately release the UTRAN resources.

2.b. In case of selection of a GSM/GPRS cell, it should be clearly stated that the "establishment of a connection", when applicable (see 2.a above), means the transmission of a PACKET CHANNEL REQUEST or a CHANNEL REQUEST.

3. Changes to Inter-RAT cell reselection to UTRAN procedure.

Remove the requirement to send an RRC CONNECTION REQUEST message altogether, and let the upper layers decide if there is a need for any contact (e.g. change in RA). Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

4. CELL CHANGE ORDER TO UTRAN procedure.

Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

Isolated Impact Change Analysis.

This change clarifies the inter-RAT cell reselection and inter-RAT cell change order procedure.

1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure

If the UTRAN does not implement this CR it may send the UE to an unpredictable state.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

If the UE does not implement this CR it may initiate an establishment procedure without a specific request from non access stratum. When there is a CN connection, change 2a has no impact on a UE implementation that waits for the initiation of connection establishment before releasing UTRAN resources, as currently specified.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

If the UE does not implement this CR it may initiate an RRC connection procedure without a specific request from non access stratum.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

If the UE does not implement the CR it may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Consequences if not approved:

⌘ 1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure
A PS only procedure could be performed even in the absence of a PS signalling connection. This would result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

The UE may establish unneeded connections in GSM/GPRS RAT. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

The UE may establish unneeded RRC connections. Each RRC connection may generate an RRC CONNECTION SETUP message, which is long and is sent in UM, probably with quick repeat, on FACH, i.e. a common transport channel with limited capacity. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

The UE may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Clauses affected:	⌘	8.3.8.2, 8.3.8.3, 8.3.9.2, 8.3.9.3, 8.3.10.2, 8.3.11.1, 8.3.11.3										
Other specs affected:	⌘	<table border="1"><tr><th>Y</th><th>N</th></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
		Y	N									
		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
Test specifications												
O&M Specifications												
Other comments:	⌘											

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.3.8 Inter-RAT cell reselection to UTRAN

8.3.8.1 General

The purpose of the inter-RAT cell reselection procedure to UTRAN is to transfer, under the control of the UE and to some extent the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS, but not UTRAN) to UTRAN.

8.3.8.2 Initiation

When the UE makes an inter-RAT cell reselection to UTRAN according to the criteria specified in [4], it shall initiate this procedure. The inter-RAT cell reselection made by the UE may use system information broadcast from the source radio access technology or UE dedicated information.

If the NAS procedures associated to inter-system change specified in [5] require the establishment of an RRC connection, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell reselection";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3;

1> after initiating an RRC connection establishment:

2> release all resources specific to the other radio access technology.

If the NAS procedures associated to inter-system change specified in [5] do not require the establishment of an RRC connection, the UE shall:

1> enter idle mode in the target cell without accessing the cell; and

1> release all resources specific to the other radio access technology.

8.3.8.3 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails before the UE has initiated the RRC connection establishment the UE may return back to the other radio access technology.

If the RRC connection establishment fails, the UE shall enter idle mode.

8.3.9 Inter-RAT cell reselection from UTRAN

8.3.9.1 General

The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

8.3.9.2 Initiation

This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

1> If the NAS procedures associated to inter-system change specified in [5] require the establishment of a connection:

- 12> initiate the establishment of a connection to the target radio access technology according to its specifications. [\[Editor's note: style changed to B2\]](#)

8.3.9.3 Successful cell reselection

When the UE has succeeded in reselecting a cell in the target radio access technology, ~~the UE shall: and, has initiated the establishment of a connection, it shall:~~

- ~~1> release all UTRAN specific resources.~~

~~In the case of GSM/GPRS, if the target cell does not support GPRS service, then the UE shall:~~

- ~~1> enter idle mode in the target cell without accessing the cell; and~~

- 1> release all UTRAN specific resources.

UTRAN should:

- 1> release all UE dedicated resources upon indication that the UE has completed a connection establishment to the other radio access technology.

8.3.9.4 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails ~~before the UE succeeds in initiating the establishment of a connection to the other radio access technology;~~ the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.10 Inter-RAT cell change order to UTRAN

8.3.10.1 General

The purpose of the inter-RAT cell change order to UTRAN procedure is to transfer, under the control of the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS) to UTRAN.

8.3.10.2 Initiation

The procedure is initiated when a radio access technology other than UTRAN, e.g. GSM/GPRS, using procedures specific for that RAT, orders the UE to change to a UTRAN cell.

- NOTE: Within the message used to order the UE to change to a UTRAN cell, the source RAT should specify the identity of the target UTRAN cell as specified in the specifications for that RAT.

The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

8.3.10.3 UE fails to complete an inter-RAT cell change order

If the inter-RAT cell reselection fails the UE shall return to the other radio access technology and proceed as specified in the appropriate specifications for that RAT.

- NOTE 3: The cell change was network ordered. Therefore, failure to change to the target cell should not cause the UE to move to UE- controlled cell selection.

8.3.11 Inter-RAT cell change order from UTRAN

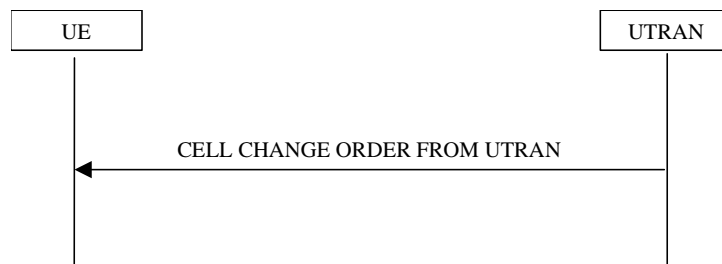


Figure 8.3.11-1: Inter-RAT cell change order from UTRAN

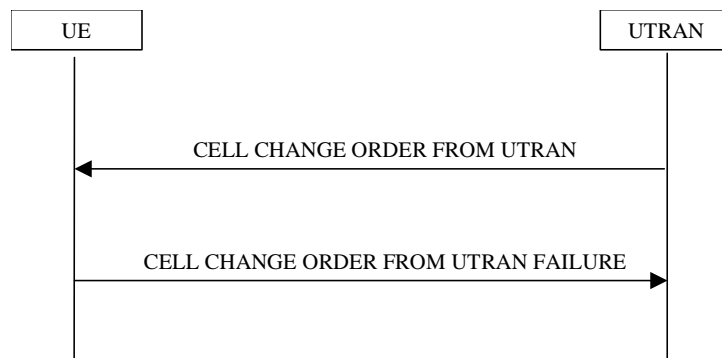


Figure 8.3.11-2: Inter-RAT cell change order from UTRAN, failure case

8.3.11.1 General

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. [This procedure may not be used when there is no PS signalling connection.](#)

8.3.11.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

[If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":](#)

[I> the UE behaviour is not specified.](#)

The UE shall:

- 1> start timer T309; and
- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

CHANGE REQUEST

25.331 CR 1889 # rev - # Current version: 4.8.0

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 Core Network

Title:	# PS service continuity when moving between 3G and 2G		
Source:	# TSG-RAN WG2		
Work item code:	# TEI	Date:	# 17 February 2003
Category:	# A	Release:	# Rel-4
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>

Reason for change:	<p># 1. CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is currently also applicable to the case in which there is no PS signalling connection, but the text in TS 24.008 does not cover such case.</p> <p>2. Inter-RAT cell reselection from UTRAN procedure.</p> <p>2.a. The current procedure always require "the establishment of a connection" in the target system, but in TS 24.008 it is stated that in some cases there is no need for such establishment.</p> <p>2.b. In case of selection of a GSM/GPRS cell, it is not clear what the "establishment of a connection" is.</p> <p>3. Inter-RAT cell reselection to UTRAN procedure.</p> <p>The current text seems to mandate an RRC CONNECTION REQUEST procedure in every case of Inter-RAT cell reselection to UTRAN procedure. The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures.</p> <p>4. CELL CHANGE ORDER TO UTRAN procedure.</p> <p>The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures</p>
Summary of change:	<p># 1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is only applicable if there is a PS signalling connection, i.e. only if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the PS Domain. In all other cases the UE can ignore the message.</p> <p>2. Changes to Inter-RAT cell reselection from UTRAN procedure.</p>

2.a. The success of the procedure is indicated by the camping on a cell in the target system. After this, the UE shall immediately release the UTRAN resources.

2.b. In case of selection of a GSM/GPRS cell, it should be clearly stated that the "establishment of a connection", when applicable (see 2.a above), means the transmission of a PACKET CHANNEL REQUEST or a CHANNEL REQUEST.

3. Changes to Inter-RAT cell reselection to UTRAN procedure.

Remove the requirement to send an RRC CONNECTION REQUEST message altogether, and let the upper layers decide if there is a need for any contact (e.g. change in RA). Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

4. CELL CHANGE ORDER TO UTRAN procedure.

Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

Isolated Impact Change Analysis.

This change clarifies the inter-RAT cell reselection and inter-RAT cell change order procedure.

1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure

If the UTRAN does not implement this CR it may send the UE to an unpredictable state.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

If the UE does not implement this CR it may initiate an establishment procedure without a specific request from non access stratum. When there is a CN connection, change 2a has no impact on a UE implementation that waits for the initiation of connection establishment before releasing UTRAN resources, as currently specified.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

If the UE does not implement this CR it may initiate an RRC connection procedure without a specific request from non access stratum.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

If the UE does not implement the CR it may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Consequences if not approved:

⌘ 1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure
A PS only procedure could be performed even in the absence of a PS signalling connection. This would result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

The UE may establish unneeded connections in GSM/GPRS RAT. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

The UE may establish unneeded RRC connections. Each RRC connection may generate an RRC CONNECTION SETUP message, which is long and is sent in UM, probably with quick repeat, on FACH, i.e. a common transport channel with limited capacity. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

The UE may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Clauses affected:	⌘	8.3.8.2, 8.3.8.3, 8.3.9.2, 8.3.9.3, 8.3.10.2, 8.3.11.1, 8.3.11.3										
Other specs affected:	⌘	<table border="1"><tr><th>Y</th><th>N</th></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
		Y	N									
		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
Test specifications												
O&M Specifications												
Other comments:	⌘											

How to create CRs using this form:

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

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

[...]

8.3.8 Inter-RAT cell reselection to UTRAN

8.3.8.1 General

The purpose of the inter-RAT cell reselection procedure to UTRAN is to transfer, under the control of the UE and to some extent the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS, but not UTRAN) to UTRAN.

8.3.8.2 Initiation

When the UE makes an inter-RAT cell reselection to UTRAN according to the criteria specified in [4], it shall initiate this procedure. The inter-RAT cell reselection made by the UE may use system information broadcast from the source radio access technology or UE dedicated information.

If the NAS procedures associated to inter-system change specified in [5] require the establishment of an RRC connection, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell reselection";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3;

1> after initiating an RRC connection establishment:

2> release all resources specific to the other radio access technology.

If the NAS procedures associated to inter-system change specified in [5] do not require the establishment of an RRC connection, the UE shall:

1> enter idle mode in the target cell without accessing the cell; and

1> release all resources specific to the other radio access technology.

8.3.8.3 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails before the UE has initiated the RRC connection establishment the UE may return back to the other radio access technology.

If the RRC connection establishment fails, the UE shall enter idle mode.

8.3.9 Inter-RAT cell reselection from UTRAN

8.3.9.1 General

The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

8.3.9.2 Initiation

This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

1> If the NAS procedures associated to inter-system change specified in [5] require the establishment of a connection:

- 12> initiate the establishment of a connection to the target radio access technology according to its specifications. [\[Editor's note: style changed to B2\]](#)

8.3.9.3 Successful cell reselection

When the UE has succeeded in reselecting a cell in the target radio access technology, ~~the UE shall: and, has initiated the establishment of a connection, it shall:~~

- ~~1> release all UTRAN specific resources.~~

~~In the case of GSM/GPRS, if the target cell does not support GPRS service, then the UE shall:~~

- ~~1> enter idle mode in the target cell without accessing the cell; and~~

- 1> release all UTRAN specific resources.

UTRAN should:

- 1> release all UE dedicated resources upon indication that the UE has completed a connection establishment to the other radio access technology.

8.3.9.4 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails ~~before the UE succeeds in initiating the establishment of a connection to the other radio access technology;~~ the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.10 Inter-RAT cell change order to UTRAN

8.3.10.1 General

The purpose of the inter-RAT cell change order to UTRAN procedure is to transfer, under the control of the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS) to UTRAN.

8.3.10.2 Initiation

The procedure is initiated when a radio access technology other than UTRAN, e.g. GSM/GPRS, using procedures specific for that RAT, orders the UE to change to a UTRAN cell.

- NOTE: Within the message used to order the UE to change to a UTRAN cell, the source RAT should specify the identity of the target UTRAN cell as specified in the specifications for that RAT.

The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

8.3.10.3 UE fails to complete an inter-RAT cell change order

If the inter-RAT cell reselection fails the UE shall return to the other radio access technology and proceed as specified in the appropriate specifications for that RAT.

- NOTE 3: The cell change was network ordered. Therefore, failure to change to the target cell should not cause the UE to move to UE- controlled cell selection.

8.3.11 Inter-RAT cell change order from UTRAN

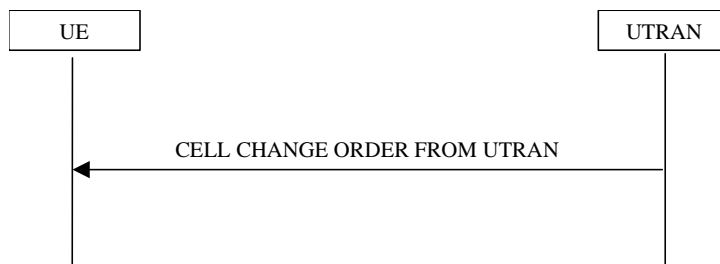


Figure 8.3.11-1: Inter-RAT cell change order from UTRAN

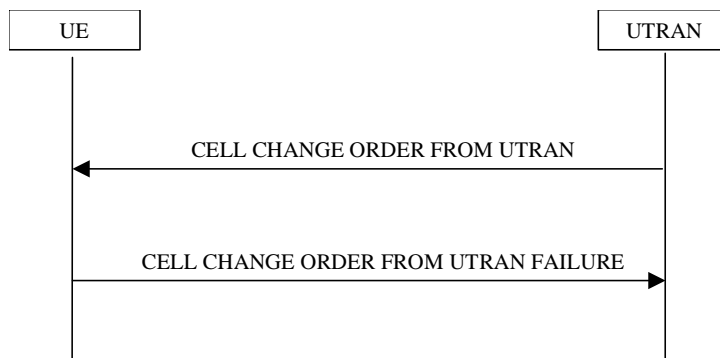


Figure 8.3.11-2: Inter-RAT cell change order from UTRAN, failure case

8.3.11.1 General

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. [This procedure may not be used when there is no PS signalling connection.](#)

8.3.11.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

[If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":](#)

[I> the UE shall act as if the message was never received.](#)

The UE shall:

- 1> start timer T309; and
- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

CHANGE REQUEST

25.331 CR 1890 # rev - # Current version: 5.3.0

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# PS service continuity when moving between 3G and 2G		
Source:	# TSG-RAN WG2		
Work item code:	# TEI	Date:	# 17 February 2003
Category:	# A	Release:	# Rel-5
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>

Reason for change:	<p># 1. CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is currently also applicable to the case in which there is no PS signalling connection, but the text in TS 24.008 does not cover such case.</p> <p>2. Inter-RAT cell reselection from UTRAN procedure.</p> <p>2.a. The current procedure always require "the establishment of a connection" in the target system, but in TS 24.008 it is stated that in some cases there is no need for such establishment.</p> <p>2.b. In case of selection of a GSM/GPRS cell, it is not clear what the "establishment of a connection" is.</p> <p>3. Inter-RAT cell reselection to UTRAN procedure.</p> <p>The current text seems to mandate an RRC CONNECTION REQUEST procedure in every case of Inter-RAT cell reselection to UTRAN procedure. The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures.</p> <p>4. CELL CHANGE ORDER TO UTRAN procedure.</p> <p>The establishment cause is set to a specific value, which may be overridden by the value dictated by the NAS procedures</p>
Summary of change:	<p># 1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure.</p> <p>1.a. The procedure is only applicable if there is a PS signalling connection, i.e. only if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the PS Domain. In all other cases the UE can ignore the message.</p> <p>2. Changes to Inter-RAT cell reselection from UTRAN procedure.</p>

2.a. The success of the procedure is indicated by the camping on a cell in the target system. After this, the UE shall immediately release the UTRAN resources.

2.b. In case of selection of a GSM/GPRS cell, it should be clearly stated that the "establishment of a connection", when applicable (see 2.a above), means the transmission of a PACKET CHANNEL REQUEST or a CHANNEL REQUEST.

3. Changes to Inter-RAT cell reselection to UTRAN procedure.

Remove the requirement to send an RRC CONNECTION REQUEST message altogether, and let the upper layers decide if there is a need for any contact (e.g. change in RA). Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

4. CELL CHANGE ORDER TO UTRAN procedure.

Keep the setting of the establishment cause, but clarify that it will override the cause requested by the upper layer procedure.

Isolated Impact Change Analysis.

This change clarifies the inter-RAT cell reselection and inter-RAT cell change order procedure.

1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure

If the UTRAN does not implement this CR it may send the UE to an unpredictable state.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

If the UE does not implement this CR it may initiate an establishment procedure without a specific request from non access stratum. When there is a CN connection, change 2a has no impact on a UE implementation that waits for the initiation of connection establishment before releasing UTRAN resources, as currently specified.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

If the UE does not implement this CR it may initiate an RRC connection procedure without a specific request from non access stratum.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

If the UE does not implement the CR it may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Consequences if not approved:

⌘ 1. Changes to the CELL CHANGE ORDER FROM UTRAN procedure
A PS only procedure could be performed even in the absence of a PS signalling connection. This would result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

2. Changes to Inter-RAT cell reselection from UTRAN procedure

The UE may establish unneeded connections in GSM/GPRS RAT. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

3. Changes to Inter-RAT cell reselection to UTRAN procedure

The UE may establish unneeded RRC connections. Each RRC connection may generate an RRC CONNECTION SETUP message, which is long and is sent in UM, probably with quick repeat, on FACH, i.e. a common transport channel with limited capacity. This would also result in a conflict between access stratum software and non access stratum software in the UE yielding unpredictable UE behaviour.

4. Changes to CELL CHANGE ORDER TO UTRAN procedure

The UE may use the wrong establishment cause for the RRC CONNECTION REQUEST message. This would not allow UTRAN to correctly prioritize the RRC connection requests.

Clauses affected:	⌘	8.3.8.2, 8.3.8.3, 8.3.9.2, 8.3.9.3, 8.3.10.2, 8.3.11.1, 8.3.11.3										
Other specs affected:	⌘	<table border="1"><tr><th>Y</th><th>N</th></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X		X		X	Other core specifications	⌘
		Y	N									
			X									
	X											
	X											
	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://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.3.8 Inter-RAT cell reselection to UTRAN

8.3.8.1 General

The purpose of the inter-RAT cell reselection procedure to UTRAN is to transfer, under the control of the UE and to some extent the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS, but not UTRAN) to UTRAN.

8.3.8.2 Initiation

When the UE makes an inter-RAT cell reselection to UTRAN according to the criteria specified in [4], it shall initiate this procedure. The inter-RAT cell reselection made by the UE may use system information broadcast from the source radio access technology or UE dedicated information.

If the NAS procedures associated to inter-system change specified in [5] require the establishment of an RRC connection, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell reselection";

NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.

1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3;

1> after initiating an RRC connection establishment:

2> release all resources specific to the other radio access technology.

If the NAS procedures associated to inter-system change specified in [5] do not require the establishment of an RRC connection, the UE shall:

1> enter idle mode in the target cell without accessing the cell; and

1> release all resources specific to the other radio access technology.

8.3.8.3 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails before the UE has initiated the RRC connection establishment the UE may return back to the other radio access technology.

If the RRC connection establishment fails, the UE shall enter idle mode.

8.3.9 Inter-RAT cell reselection from UTRAN

8.3.9.1 General

The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

8.3.9.2 Initiation

This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

1> If the NAS procedures associated to inter-system change specified in [5] require the establishment of a connection:

- 12> initiate the establishment of a connection to the target radio access technology according to its specifications. [\[Editor's note: style changed to B2\]](#)

8.3.9.3 Successful cell reselection

When the UE has succeeded in reselecting a cell in the target radio access technology, ~~the UE shall: and, has initiated the establishment of a connection, it shall:~~

- ~~1> release all UTRAN specific resources.~~

~~In the case of GSM/GPRS, if the target cell does not support GPRS service, then the UE shall:~~

- ~~1> enter idle mode in the target cell without accessing the cell; and~~

- 1> release all UTRAN specific resources.

UTRAN should:

- 1> release all UE dedicated resources upon indication that the UE has completed a connection establishment to the other radio access technology.

8.3.9.4 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails ~~before the UE succeeds in initiating the establishment of a connection to the other radio access technology,~~ the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.10 Inter-RAT cell change order to UTRAN

8.3.10.1 General

The purpose of the inter-RAT cell change order to UTRAN procedure is to transfer, under the control of the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS) to UTRAN.

8.3.10.2 Initiation

The procedure is initiated when a radio access technology other than UTRAN, e.g. GSM/GPRS, using procedures specific for that RAT, orders the UE to change to a UTRAN cell.

- NOTE: Within the message used to order the UE to change to a UTRAN cell, the source RAT should specify the identity of the target UTRAN cell as specified in the specifications for that RAT.

The UE shall:

- 1> set the variable ESTABLISHMENT_CAUSE to "Inter-RAT cell change order";

[NOTE: This value of ESTABLISHMENT_CAUSE has priority over the cause requested by upper layers.](#)

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

8.3.10.3 UE fails to complete an inter-RAT cell change order

If the inter-RAT cell reselection fails the UE shall return to the other radio access technology and proceed as specified in the appropriate specifications for that RAT.

- NOTE 3: The cell change was network ordered. Therefore, failure to change to the target cell should not cause the UE to move to UE- controlled cell selection.

8.3.11 Inter-RAT cell change order from UTRAN

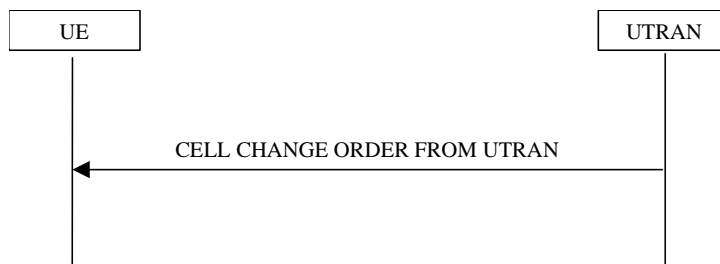


Figure 8.3.11-1: Inter-RAT cell change order from UTRAN

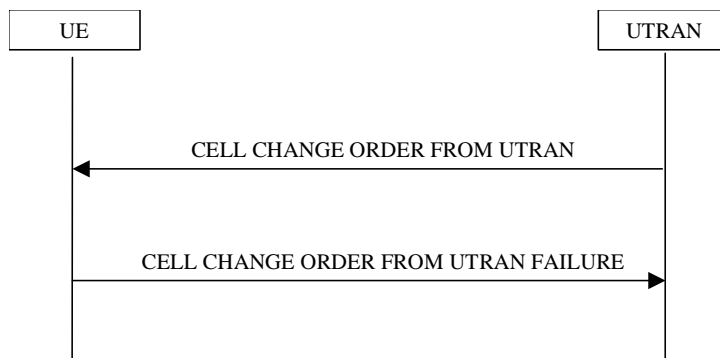


Figure 8.3.11-2: Inter-RAT cell change order from UTRAN, failure case

8.3.11.1 General

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. [This procedure may not be used when there is no PS signalling connection.](#)

8.3.11.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

[If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":](#)

[I> the UE shall act as if the message was never received.](#)

The UE shall:

- 1> start timer T309; and
- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

2> retrieve it from the target cell as specified in [43];

2> act upon IE "NC mode" as specified in [43].

1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

CHANGE REQUEST

25.331 CR 1891 # rev **1** # Current version: **3.13.0**

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 Core Network

Title:	# Multiple activations of the same compressed mode pattern		
Source:	# TSG-RAN WG2		
Work item code:	# TEI	Date:	# 17 February 2003
Category:	# F	Release:	# R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(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 be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# The UE behaviour is not clear in case the UTRAN activates the same CM pattern (same TGPSI) multiple times before the activation time
Summary of change:	# The UE behaviour is not specified if there is a pending "TGCFN" for that particular TGPSI or if there is any pending "TGPS reconfiguration CFN"
	Revision 1 The correction in the radio bearer control procedures (8.6.6.15) is aligned with the correction in the measurement procedures (8.4.1.3)
	Isolated Impact Change Analysis. This change clarifies the compressed mode procedure. If the UE does not implement this CR it may behave unpredictably when UTRAN tries to modify the activation time of a CM pattern.
Consequences if not approved:	# UTRAN would not be able to modify the activation time of a CM pattern which has not been yet activated.

Clauses affected:	# 8.4.1.3, 8.6.6.15								
Other specs affected:	#								
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	#	X	#	X	#	X
Y	N								
#	X								
#	X								
#	X								
Other comments:	#								

How to create CRs using this form:

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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.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

- 7> if System Information Block type 15.5 is broadcast:
 - 8> read System Information Block type 15.5.
 - 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event"

(given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
- 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
- 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
- 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.
- 2> for any other measurement type:
- 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
- 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:

- 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE "TGMP" in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":

3> the UE behaviour is unspecified:

- 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
- 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:
 - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.4.1.4 Unsupported measurement in the UE

If UTRAN instructs the UE to perform a measurement that is not supported by the UE, the UE shall:

- 1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;
- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.
- 1> set the cause value in IE "failure cause" to "unsupported measurement";
- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;
- 1> and the procedure ends.

[...]

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':

- 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 2> the UE behaviour is unspecified.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
 - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the new configuration has been taken into use:
 - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "active" at the time indicated by IE "TGCFN"; and
 - 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
 - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> at the time indicated by IE "TGCFN":

3> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

[...]

CHANGE REQUEST

25.331 CR 1892 # rev **1** # Current version: **4.8.0**

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 Core Network

| | | | |
|------------------------|--|-----------------|---|
| Title: | # Multiple activations of the same compressed mode pattern | | |
| Source: | # TSG-RAN WG2 | | |
| Work item code: | # TEI | Date: | # 17 February 2003 |
| Category: | # A | Release: | # Rel-4 |
| | Use <u>one</u> of the following categories: | | Use <u>one</u> of the following releases: |
| | F (correction) | | 2 (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 be found in 3GPP TR 21.900 . | | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | |
|--------------------------------------|---|
| Reason for change: | # The UE behaviour is not clear in case the UTRAN activates the same CM pattern (same TGPSI) multiple times before the activation time |
| Summary of change: | # The UE behaviour is not specified if there is a pending "TGCFN" for that particular TGPSI or if there is any pending "TGPS reconfiguration CFN" |
| | Revision 1
The correction in the radio bearer control procedures (8.6.6.15) is aligned with the correction in the measurement procedures (8.4.1.3) |
| | Isolated Impact Change Analysis.

This change clarifies the compressed mode procedure.
If the UE does not implement this CR it may behave unpredictably when UTRAN tries to modify the activation time of a CM pattern. |
| Consequences if not approved: | # UTRAN would not be able to modify the activation time of a CM pattern which has not been yet activated. |

| | | | | | |
|------------------------------|--|---|---|--------------------------|-------------------------------------|
| Clauses affected: | # 8.4.1.3, 8.6.6.15 | | | | |
| Other specs affected: | # | | | | |
| | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications | Y | N | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Y | N | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications | Y | N | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Y | N | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
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| Y | N | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| Other comments: | # | | | | |

How to create CRs using this form:

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Below is a brief summary:

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

- 7> if System Information Block type 15.5 is broadcast:
 - 8> read System Information Block type 15.5.
 - 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event"

(given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
- 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
- 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
- 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.
- 2> for any other measurement type:
- 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
- 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:

- 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE "TGMP" in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":

3> the UE behaviour is unspecified:

- 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
- 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:
 - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.4.1.4 Unsupported measurement in the UE

If UTRAN instructs the UE to perform a measurement that is not supported by the UE, the UE shall:

- 1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;
- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.
- 1> set the cause value in IE "failure cause" to "unsupported measurement";
- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;
- 1> and the procedure ends.

[...]

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':

- 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 2> the UE behaviour is unspecified.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
 - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the new configuration has been taken into use:
 - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "active" at the time indicated by IE "TGCFN"; and
 - 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
 - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> at the time indicated by IE "TGCFN":

3> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

[...]

CHANGE REQUEST

25.331 CR 1893 # rev **1** # Current version: **5.3.0**

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | | |
|------------------------|--|-----------------|---|
| Title: | # Multiple activations of the same compressed mode pattern | | |
| Source: | # TSG-RAN WG2 | | |
| Work item code: | # TEI | Date: | # 17 February 2003 |
| Category: | # A | Release: | # Rel-5 |
| | Use <u>one</u> of the following categories: | | Use <u>one</u> of the following releases: |
| | F (correction) | | 2 (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 be found in 3GPP TR 21.900 . | | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | |
|--------------------------------------|---|
| Reason for change: | # The UE behaviour is not clear in case the UTRAN activates the same CM pattern (same TGPSI) multiple times before the activation time |
| Summary of change: | # The UE behaviour is not specified if there is a pending "TGCFN" for that particular TGPSI or if there is any pending "TGPS reconfiguration CFN" |
| | Revision 1
The correction in the radio bearer control procedures (8.6.6.15) is aligned with the correction in the measurement procedures (8.4.1.3) |
| | Isolated Impact Change Analysis.

This change clarifies the compressed mode procedure.
If the UE does not implement this CR it may behave unpredictably when UTRAN tries to modify the activation time of a CM pattern. |
| Consequences if not approved: | # UTRAN would not be able to modify the activation time of a CM pattern which has not been yet activated. |

| | | | | | |
|------------------------------|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| Clauses affected: | # 8.4.1.3, 8.6.6.15 | | | | |
| Other specs affected: | # | | | | |
| | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications | Y | N | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Y | N | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| Other comments: | # | | | | |

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

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

[...]

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

- 7> if System Information Block type 15.5 is broadcast:
 - 8> read System Information Block type 15.5.
 - 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS navigation model", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS almanac", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event"

(given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
- 3> if "report criteria" is set to "intra-frequency report criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> leave the currently stored "inter-frequency report criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency report criteria" and intra-frequency reporting criteria.
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
- 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
- 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.
- 2> for any other measurement type:
- 3> resume the measurements according to the new stored measurement control information.
- 1> if the IE "measurement command" has the value "release":
- 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:

- 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE "TGMP" in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":

3> the UE behaviour is unspecified:

- 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
- 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:
 - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.4.1.4 Unsupported measurement in the UE

If UTRAN instructs the UE to perform a measurement that is not supported by the UE, the UE shall:

- 1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;
- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.
- 1> set the cause value in IE "failure cause" to "unsupported measurement";
- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;
- 1> and the procedure ends.

[...]

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':

- 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if there is a any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 2> the UE behaviour is unspecified.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
 - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the new configuration has been taken into use:
 - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "active" at the time indicated by IE "TGCFN"; and
 - 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
 - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> at the time indicated by IE "TGCFN":

3> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

[...]

CHANGE REQUEST

⌘ **25.331 CR 1894** ⌘ rev **-** ⌘ Current version: **3.13.0** ⌘

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 Core Network

| | | | |
|------------------------|--|-----------------|---|
| Title: | ⌘ Setting of ciphering activation time for TM bearers. | | |
| Source: | ⌘ TSG-RAN WG2 | | |
| Work item code: | ⌘ TEI | Date: | ⌘ 17 Feb 2003 |
| Category: | ⌘ F | Release: | ⌘ R99 |
| | Use <u>one</u> of the following categories: | | Use <u>one</u> of the following releases: |
| | F (correction) | | 2 (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 be found in 3GPP TR 21.900 . | | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ Following discussion in RAN2#34 on R2-030255 and R2-030180, it appeared that is currently unclear how ciphering of TM RB should be done when the ciphering activation time is not at the TTI boundary common to all UL and DL transport channel using RLC-TM.

It has been decided that the ciphering activation time for the TM radio bearers have to be set on a 80 ms TTI boundary. |
| Summary of change: | ⌘ <ul style="list-style-type: none"> • It is specified that the UE shall set the "COUNT-C activation time" on a 80 ms TTI boundary. • It is specified the UTRAN should set the "Ciphering activation time for DPCH" on a 80 ms TTI boundary. |
| Consequences if not approved: | ⌘ If the CR is not implemented in the UE:

Potential risk of ciphering failure on TM radio bearers during the setup of the first TM bearer and during hard hand-over.

If the CR is not implemented in the UTRAN:

Potential risk of ciphering failure on TM radio bearers during Security Mode Control procedure. |

| | |
|--------------------------|---|
| Clauses affected: | ⌘ 8.1.12.2.1, 8.2.2.3, 8.3.6.3, 8.6.6.28 |
| | <input type="checkbox"/> Y <input type="checkbox"/> N |

| | | | | | |
|------------------------------|---|-------------------------------------|---------------------------|---|--|
| Other specs affected: | ⌘ | <input checked="" type="checkbox"/> | Other core specifications | ⌘ | |
| | | <input checked="" type="checkbox"/> | Test specifications | | |
| | | <input checked="" type="checkbox"/> | O&M Specifications | | |
| Other comments: | ⌘ | | | | |

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

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

8.1.12.2.1 Cipherng configuration change

To start/restart cipherng, UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the most recent cipherng configuration. If no such cipherng configuration exists then the SECURITY MODE COMMAND is not cipherng. UTRAN should not transmit a SECURITY MODE COMMAND to signal a change in cipherng algorithm.

When configuring cipherng, UTRAN should ensure that the UE needs to store at most two different cipherng configurations (keyset and algorithm) per CN domain, in total over all radio bearers at any given time. For signalling radio bearers the total number of cipherng configurations that need to be stored is at most three. Prior to sending the SECURITY MODE COMMAND, for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, UTRAN should:

- 1> suspend all radio bearers using RLC-AM or RLC-UM and all signalling radio bearers using RLC-AM or RLC-UM, except the signalling radio bearer used to send the SECURITY MODE COMMAND message on the downlink DCCH in RLC-AM, and except signalling radio bearer RB0, according to the following:
 - 2> not transmit RLC PDUs with sequence number greater than or equal to the number in IE "Radio bearer downlink cipherng activation time info" on all suspended radio bearers and all suspended signalling radio bearers.
- 1> set, for the signalling radio bearer used to send the SECURITY MODE COMMAND, the "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info", at which time the new cipherng configuration shall be applied;
- 1> if a transparent mode radio bearer for this CN domain exists:
 - 2> include the IE "Cipherng activation time for DPCH" in IE "Cipherng mode info", at which time the new cipherng configuration shall be applied; and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);
- 1> consider a cipherng activation time in downlink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time;
- 1> set, for each suspended radio bearer and signalling radio bearer that has no pending cipherng activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info", at which time the new cipherng configuration shall be applied;
- 1> set, for each suspended radio bearer and signalling radio bearer that has a pending cipherng activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info" to the value used in the previous security mode control procedure, at which time the latest cipherng configuration shall be applied;
- 1> if Integrity protection has already been started for the UE:
 - 2> if for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, a new security key set (new cipherng and integrity protection keys) has been received from upper layers since the transmission of the last SECURITY MODE COMMAND message for that CN domain:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
 - 2> if the IE "CN domain identity" in the SECURITY MODE COMMAND is different from the IE "CN domain identity" that was sent in the previous SECURITY MODE COMMAND message to the UE:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
- 1> transmit the SECURITY MODE COMMAND message on RB2.

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall be able to receive any of the following messages:

- RADIO BEARER SETUP message; or
- RADIO BEARER RECONFIGURATION message; or
- RADIO BEARER RELEASE message; or
- TRANSPORT CHANNEL RECONFIGURATION message; or
- PHYSICAL CHANNEL RECONFIGURATION message.

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

- 1> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 1> apply the hard handover procedure as specified in subclause 8.3.5;
- 1> be able to perform this procedure even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent:
 - 2> not change its current UL Physical channel configuration.
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;

- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;
 - 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;

- 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers for the CN domain indicated in the IE "CN domain identity" in the IE "RAB info":
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists for the CN domain indicated in the IE "CN domain identity" in the IE "RAB info":
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that [is a multiple of 8 frames \(CFN mod 8 = 0\) and](#) lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].

- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> the procedure ends.
- 1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE:
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure is successfully completed:
 - 3> the procedure ends.
- 1> if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - 2> when the URA update procedure is successfully completed:
 - 3> the procedure ends.

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;

- 1> initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
- 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
 - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
 - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
 - 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
- 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
 - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used
- 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
- 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
 - 3> 0 dB for the power offset $P_{\text{Pilot-DPDCH}}$ bearer in FDD;
 - 3> calculate the Default DPCH Offset Value using the following formula:
 - 3> in FDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI} \cdot 2 \bmod 600) * 512$$
 - 3> in TDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI} \cdot 2 \bmod 7)$$
 - 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":
- 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;

- 1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
 - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
 - 3> set the variable LATEST_CONFIGURED_CN_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;
 - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER_RAT_HANDOVER_INFO_TRANSFERRED";
 - 3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;
 - 3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
 - 3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
 - 3> set the IE "Status" in the variable CIPHERING_STATUS to "Started";
 - 3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- 1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:
 - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
 - 3> set the IE "Status" in the variable CIPHERING_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
 - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;
 - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:
 - 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;
 - 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:

- 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
- 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> transmit a HANDBOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDBOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
 - 2> enter UTRA RRC connected mode in state CELL_DCH;
 - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
 - 2> update the variable UE_CAPABILITY_TRANSFERRED with the UE capabilities stored in the variable INTER_RAT_HANDBOVER_INFO_TRANSFERRED;
 - 2> for all radio bearers using RLC-AM or RLC-UM:
 - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;
 - 3> start incrementing the COUNT-C values.
- 1> and the procedure ends.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included in a message used to perform a hard handover:
 - 2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.
- 1> ignore the value received in IE "CFN-targetSFN frame offset";
- 1> if the IE "Downlink DPCH power control information" is included:
 - 2> perform actions for the IE "DPC Mode" according to [29].
- 1> if the IE choice "mode" is set to 'FDD':
 - 2> if the IE "Downlink rate matching restriction information" is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> perform actions for the IE "spreading factor";
 - 2> perform actions for the IE "Fixed or Flexible position";
 - 2> perform actions for the IE "TFCI existence";
 - 2> if the IE choice "SF" is set to 256:
 - 3> store the value of the IE "Number of bits for pilot bits".
 - 2> if the IE choice "SF" set to 128:
 - 3> store the value of the IE "Number of bits for pilot bits".

- 1> if the IE choice "mode" is set to 'TDD':
 - 2> perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- 1> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
- 1> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;
- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - 2> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> increment the HFN component of the COUNT-C variable by one;
 - 2> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

CHANGE REQUEST

⌘ **25.331 CR 1895** ⌘ rev **-** ⌘ Current version: **4.8.0** ⌘

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 Core Network

| | | | |
|------------------------|--|-----------------|---|
| Title: | ⌘ Setting of ciphering activation time for TM bearers. | | |
| Source: | ⌘ TSG-RAN WG2 | | |
| Work item code: | ⌘ TEI | Date: | ⌘ 17 Feb 2003 |
| Category: | ⌘ A | Release: | ⌘ Rel-4 |
| | Use <u>one</u> of the following categories: | | Use <u>one</u> of the following releases: |
| | F (correction) | | 2 (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 be found in 3GPP TR 21.900 . | | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ Following discussion in RAN2#34 on R2-030255 and R2-030180, it appeared that is currently unclear how ciphering of TM RB should be done when the ciphering activation time is not at the TTI boundary common to all UL and DL transport channel using RLC-TM.

It has been decided that the ciphering activation time for the TM radio bearers have to be set on a 80 ms TTI boundary. |
| Summary of change: | ⌘ <ul style="list-style-type: none"> • It is specified that the UE shall set the “COUNT-C activation time” on a 80 ms TTI boundary. • It is specified the UTRAN should set the “Ciphering activation time for DPCH” on a 80 ms TTI boundary. |
| Consequences if not approved: | ⌘ If the CR is not implemented in the UE:

Potential risk of ciphering failure on TM radio bearers during the setup of the first TM bearer and during hard hand-over.

If the CR is not implemented in the UTRAN:

Potential risk of ciphering failure on TM radio bearers during Security Mode Control procedure. |

Clauses affected: ⌘ 8.1.12.2.1, 8.2.2.3, 8.3.6.3, 8.6.6.28

Y N

| | | | | | |
|------------------------------|---|-------------------------------------|---------------------------|---|--|
| Other specs affected: | ⌘ | <input checked="" type="checkbox"/> | Other core specifications | ⌘ | |
| | | <input checked="" type="checkbox"/> | Test specifications | | |
| | | <input checked="" type="checkbox"/> | O&M Specifications | | |
| Other comments: | ⌘ | | | | |

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

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

8.1.12.2.1 Cipherng configuration change

To start/restart cipherng, UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the most recent cipherng configuration. If no such cipherng configuration exists then the SECURITY MODE COMMAND is not cipherng. UTRAN should not transmit a SECURITY MODE COMMAND to signal a change in cipherng algorithm.

When configuring cipherng, UTRAN should ensure that the UE needs to store at most two different cipherng configurations (keyset and algorithm) per CN domain, in total over all radio bearers at any given time. For signalling radio bearers the total number of cipherng configurations that need to be stored is at most three. Prior to sending the SECURITY MODE COMMAND, for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, UTRAN should:

- 1> suspend all radio bearers using RLC-AM or RLC-UM and all signalling radio bearers using RLC-AM or RLC-UM, except the signalling radio bearer used to send the SECURITY MODE COMMAND message on the downlink DCCH in RLC-AM, and except signalling radio bearer RB0, according to the following:
 - 2> not transmit RLC PDUs with sequence number greater than or equal to the number in IE "Radio bearer downlink cipherng activation time info" on all suspended radio bearers and all suspended signalling radio bearers.
- 1> set, for the signalling radio bearer used to send the SECURITY MODE COMMAND, the "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info", at which time the new cipherng configuration shall be applied;
- 1> if a transparent mode radio bearer for this CN domain exists:
 - 2> include the IE "Cipherng activation time for DPCH" in IE "Cipherng mode info", at which time the new cipherng configuration shall be applied; and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);
- 1> consider a cipherng activation time in downlink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time;
- 1> set, for each suspended radio bearer and signalling radio bearer that has no pending cipherng activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info", at which time the new cipherng configuration shall be applied;
- 1> set, for each suspended radio bearer and signalling radio bearer that has a pending cipherng activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink cipherng activation time info" in the IE "Cipherng mode info" to the value used in the previous security mode control procedure, at which time the latest cipherng configuration shall be applied;
- 1> if Integrity protection has already been started for the UE:
 - 2> if for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, a new security key set (new cipherng and integrity protection keys) has been received from upper layers since the transmission of the last SECURITY MODE COMMAND message for that CN domain:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
 - 2> if the IE "CN domain identity" in the SECURITY MODE COMMAND is different from the IE "CN domain identity" that was sent in the previous SECURITY MODE COMMAND message to the UE:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
- 1> transmit the SECURITY MODE COMMAND message on RB2.

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall be able to receive any of the following messages:

- RADIO BEARER SETUP message; or
- RADIO BEARER RECONFIGURATION message; or
- RADIO BEARER RELEASE message; or
- TRANSPORT CHANNEL RECONFIGURATION message; or
- PHYSICAL CHANNEL RECONFIGURATION message;

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

- 1> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 1> apply the hard handover procedure as specified in subclause 8.3.5;
- 1> be able to perform this procedure even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The Release '99 RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 2> remove any C-RNTI from MAC;
 - 2> clear the variable C_RNTI.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration.
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;

3> clear the variable C_RNTI. If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select PRACH according to subclause 8.5.17;

- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;
 - 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;

- 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers for the CN domain indicated in the IE "CN domain identity" in the IE "RAB info":
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists for the CN domain indicated in the IE "CN domain identity" in the IE "RAB info":
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.

NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].

- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> the procedure ends.
- 1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE:
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure is successfully completed:
 - 3> the procedure ends.
- 1> if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";
 - 2> when the URA update procedure is successfully completed:
 - 3> the procedure ends.

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
- 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
 - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
 - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
 - 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
- 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
 - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE: IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.
- 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
- 2> use the following values for parameters that are neither signalled within the HANOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
 - 3> 0 dB for the power offset $P_{\text{Pilot-DPCH}}$ bearer in FDD;
 - 3> calculate the Default DPCH Offset Value using the following formula:
 - 3> in FDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod } 600) * 512$$
 - 3> in TDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod } 7)$$
 - 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":

- 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;
- 1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:
 - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
 - 3> set the variable LATEST_CONFIGURED_CN_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;
 - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER_RAT_HANDOVER_INFO_TRANSFERRED";
 - 3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;
 - 3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
 - 3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;
 - 3> set the IE "Status" in the variable CIPHERING_STATUS to "Started";
 - 3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
 - 1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:
 - 2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
 - 3> set the IE "Status" in the variable CIPHERING_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
 - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;
 - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:
 - 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;

- 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
 - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
 - 1> transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
 - 1> when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
 - 2> enter UTRA RRC connected mode in state CELL_DCH;
 - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
 - 2> update the variable UE_CAPABILITY_TRANSFERRED with the UE capabilities stored in the variable INTER_RAT_HANDOVER_INFO_TRANSFERRED;
 - 2> for all radio bearers using RLC-AM or RLC-UM:
 - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;
 - 3> start incrementing the COUNT-C values.
 - 1> and the procedure ends.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included in a message used to perform a hard handover:
 - 2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.
- 1> ignore the value received in IE "CFN-targetSFN frame offset";
- 1> if the IE "Downlink DPCH power control information" is included:
 - 2> perform actions for the IE "DPC Mode" according to [29].
- 1> if the IE choice "mode" is set to 'FDD':
 - 2> if the IE "Downlink rate matching restriction information" is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> perform actions for the IE "spreading factor";
 - 2> perform actions for the IE "Fixed or Flexible position";

- 2> perform actions for the IE "TFCI existence";
- 2> if the IE choice "SF" is set to 256:
 - 3> store the value of the IE "Number of bits for pilot bits".
- 2> if the IE choice "SF" set to 128:
 - 3> store the value of the IE "Number of bits for pilot bits".
- 1> if the IE choice "mode" is set to 'TDD':
 - 2> perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- 1> if the IE "MAC-d HFN initial value" is included in the IE "Downlink DPCH info common for all RL":
 - 2> set the HFN component of COUNT-C for TM-RLC to the value of the IE "MAC-d HFN initial value", while not incrementing the value of the HFN component of COUNT-C at each CFN cycle.

NOTE: The UTRAN should choose a value for the IE "MAC-d HFN initial value" using the COUNT-C value of the RBs using RLC-TM indicated by the Source RNC to the Target RNC in the IE "SRNS Relocation Info" and include some margin in such a way that no values of COUNT-C are repeated after the handover.

- 1> else:
 - 2> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero.
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead off the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;
- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - 2> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> increment the HFN component of the COUNT-C variable by one;
 - 2> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 1896** ⌘ rev **-** ⌘ Current version: **5.3.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | | |
|------------------------|--|-----------------|---|
| Title: | ⌘ Setting of ciphering activation time for TM bearers. | | |
| Source: | ⌘ TSG-RAN WG2 | | |
| Work item code: | ⌘ TEI | Date: | ⌘ 17 Feb 2003 |
| Category: | ⌘ A | Release: | ⌘ Rel-5 |
| | Use <u>one</u> of the following categories: | | Use <u>one</u> of the following releases: |
| | F (correction) | | 2 (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 be found in 3GPP TR 21.900 . | | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ Following discussion in RAN2#34 on R2-030255 and R2-030180, it appeared that is currently unclear how ciphering of TM RB should be done when the ciphering activation time is not at the TTI boundary common to all UL and DL transport channel using RLC-TM.

It has been decided that the ciphering activation time for the TM radio bearers have to be set on a 80 ms TTI boundary. |
| Summary of change: | ⌘ <ul style="list-style-type: none"> • It is specified that the UE shall set the “COUNT-C activation time” on a 80 ms TTI boundary. • It is specified the UTRAN should set the “Ciphering activation time for DPCH” on a 80 ms TTI boundary. |
| Consequences if not approved: | ⌘ If the CR is not implemented in the UE:

Potential risk of ciphering failure on TM radio bearers during the setup of the first TM bearer and during hard hand-over.

If the CR is not implemented in the UTRAN:

Potential risk of ciphering failure on TM radio bearers during Security Mode Control procedure. |

Clauses affected: ⌘ 8.1.12.2.1, 8.2.2.3, 8.3.6.3, 8.6.6.28

Y N

| | | | | | |
|------------------------------|---|-------------------------------------|---------------------------|---|--|
| Other specs affected: | ⌘ | <input checked="" type="checkbox"/> | Other core specifications | ⌘ | |
| | | <input checked="" type="checkbox"/> | Test specifications | | |
| | | <input checked="" type="checkbox"/> | O&M Specifications | | |
| Other comments: | ⌘ | | | | |

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

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

8.1.12.2.1 Ciphery configuration change

To start/restart ciphery, UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the most recent ciphery configuration. If no such ciphery configuration exists then the SECURITY MODE COMMAND is not ciphered. UTRAN should not transmit a SECURITY MODE COMMAND to signal a change in ciphery algorithm.

When configuring ciphery, UTRAN should ensure that the UE needs to store at most two different ciphery configurations (keyset and algorithm) per CN domain, in total over all radio bearers at any given time. For signalling radio bearers the total number of ciphery configurations that need to be stored is at most three. Prior to sending the SECURITY MODE COMMAND, for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, UTRAN should:

- 1> suspend all radio bearers using RLC-AM or RLC-UM and all signalling radio bearers using RLC-AM or RLC-UM, except the signalling radio bearer used to send the SECURITY MODE COMMAND message on the downlink DCCH in RLC-AM, and except signalling radio bearer RB0, according to the following:
 - 2> not transmit RLC PDUs with sequence number greater than or equal to the number in IE "Radio bearer downlink ciphery activation time info" on all suspended radio bearers and all suspended signalling radio bearers.
- 1> set, for the signalling radio bearer used to send the SECURITY MODE COMMAND, the "RLC sequence number" in IE "Radio bearer downlink ciphery activation time info" in the IE "Ciphery mode info", at which time the new ciphery configuration shall be applied;
- 1> if a transparent mode radio bearer for this CN domain exists:
 - 2> include the IE "Ciphery activation time for DPCH" in IE "Ciphery mode info", at which time the new ciphery configuration shall be applied; and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);
- 1> consider a ciphery activation time in downlink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time;
- 1> set, for each suspended radio bearer and signalling radio bearer that has no pending ciphery activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphery activation time info" in the IE "Ciphery mode info", at which time the new ciphery configuration shall be applied;
- 1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphery activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphery activation time info" in the IE "Ciphery mode info" to the value used in the previous security mode control procedure, at which time the latest ciphery configuration shall be applied;
- 1> if Integrity protection has already been started for the UE:
 - 2> if for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, a new security key set (new ciphery and integrity protection keys) has been received from upper layers since the transmission of the last SECURITY MODE COMMAND message for that CN domain:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
 - 2> if the IE "CN domain identity" in the SECURITY MODE COMMAND is different from the IE "CN domain identity" that was sent in the previous SECURITY MODE COMMAND message to the UE:
 - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
- 1> transmit the SECURITY MODE COMMAND message on RB2.

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

- 1> be able to receive any of the following messages:
 - 2> RADIO BEARER SETUP message; or
 - 2> RADIO BEARER RECONFIGURATION message; or
 - 2> RADIO BEARER RELEASE message; or
 - 2> TRANSPORT CHANNEL RECONFIGURATION message; or
 - 2> PHYSICAL CHANNEL RECONFIGURATION message;
- 1> perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;
- 1> clear any stored HS-PDSCH configuration;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:
 - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
 - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
 - 4> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> and the procedure ends.
- 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

- 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);
 - 2> increment by one the downlink and uplink HFN values for RB2;

- 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
 - 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
 - 1> if the received reconfiguration message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
 - 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
 - 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - ~~4> include the IE "COUNT-C activation time" and specify a CFN value for this IE.~~
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.
 - 2> if prior to this procedure there exists at least one transparent mode RLC radio bearer:
 - 3> if, at the conclusion of this procedure, no transparent mode RLC radio bearers exist:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE.
 - 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 1> clear that entry;
 - 1> if the variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.
 - 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):

2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.

1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure completed successfully:

3> the procedure ends.

1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE:

2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure is successfully completed:

3> the procedure ends.

1> if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:

2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";

2> when the URA update procedure is successfully completed:

3> the procedure ends.

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
 - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
 - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
 - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
 - 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
 - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
 - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;

NOTE: IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.

- 2> set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":
 - 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
 - 3> 0 dB for the power offset $P_{\text{Pilot-DPDCH}}$ bearer in FDD;
 - 3> calculate the Default DPCH Offset Value using the following formula:

3> in FDD:

Default DPCH Offset Value = (SRNTI 2 mod 600) * 512

3> in TDD:

Default DPCH Offset Value = (SRNTI 2 mod 7)

3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.

1> if IE "Specification mode" is set to "Complete specification":

2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.

1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;

1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;

1> if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:

2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:

3> set the variable LATEST_CONFIGURED_CN_DOMAIN to the value indicated in the IE "CN domain identity", or to the CS domain when this IE is not present;

3> set the 20 MSB of the HFN component of the COUNT-C variable for all radio bearers using RLC-TM and all signalling radio bearers to the "START" value included in the IE "UE security information" in the variable "INTER_RAT_HANDOVER_INFO_TRANSFERRED";

3> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers using RLC-TM and all signalling radio bearers to zero;

3> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;

3> set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;

3> set the IE "Status" in the variable CIPHERING_STATUS to "Started";

3> apply the algorithm according to IE "Ciphering Algorithm" and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

1> if ciphering has not been activated and ongoing in the radio access technology from which inter-RAT handover is performed:

2> for the CN domain included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:

3> set the IE "Status" in the variable CIPHERING_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:

2> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;

- 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:
 - 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;
 - 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
 - 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
 - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> transmit a HANDBOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDBOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
 - 2> enter UTRA RRC connected mode in state CELL_DCH;
 - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
 - 2> update the variable UE_CAPABILITY_TRANSFERRED with the UE capabilities stored in the variable INTER_RAT_HANDBOVER_INFO_TRANSFERRED;
 - 2> for all radio bearers using RLC-AM or RLC-UM:
 - 3> set the 20 MSB of the HFN component of the uplink and downlink COUNT-C variable to the START value indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
 - 3> increment the HFN component of the COUNT-C variable by one;
 - 3> start incrementing the COUNT-C values.
- 1> and the procedure ends.

8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included in a message used to perform a hard handover:
 - 2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.
- 1> ignore the value received in IE "CFN-targetSFN frame offset";
- 1> if the IE "Downlink DPCH power control information" is included:

- 2> perform actions for the IE "DPC Mode" according to [29].
- 1> if the IE choice "mode" is set to 'FDD':
 - 2> if the IE "Downlink rate matching restriction information" is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> perform actions for the IE "spreading factor";
 - 2> perform actions for the IE "Fixed or Flexible position";
 - 2> perform actions for the IE "TFCI existence";
 - 2> if the IE choice "SF" is set to 256:
 - 3> store the value of the IE "Number of bits for pilot bits".
 - 2> if the IE choice "SF" set to 128:
 - 3> store the value of the IE "Number of bits for pilot bits".
- 1> if the IE choice "mode" is set to 'TDD':
 - 2> perform actions for the IE "Common timeslot info".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell_DCH to Cell_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- 1> if the IE "MAC-d HFN initial value" is included in the IE "Downlink DPCH info common for all RL":
 - 2> set the HFN component of COUNT-C for TM-RLC to the value of the IE "MAC-d HFN initial value", while not incrementing the value of the HFN component of COUNT-C at each CFN cycle.

NOTE: The UTRAN should choose a value for the IE "MAC-d HFN initial value" using the COUNT-C value of the RBs using RLC-TM indicated by the Source RNC to the Target RNC in the IE "SRNS Relocation Info" and include some margin in such a way that no values of COUNT-C are repeated after the handover.

- 1> else:
 - 2> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero.
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead off the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;
- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
 - 2> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
 - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;

- 2> increment the HFN component of the COUNT-C variable by one;
- 2> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
- 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.