Title: CRs on 25.331 R'99 (2) (and linked CRs from later releases)

Source: TSG-RAN WG2

Agenda item: 7.3.3

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2218	-	R99	Correction to event 6D	F	3.17.0	3.18.0	R2-040270	TEI
25.331	2219	-	Rel-4	Correction to event 6D	A	4.12.0	4.13.0	R2-040271	TEI
25.331	2220	-	Rel-5	Correction to event 6D	A	5.7.1	5.8.0	R2-040272	TEI
25.331	2221	-	Rel-6	Correction to event 6D	A	6.0.1	6.1.0	R2-040273	TEI
25.331	2222	1	R99	Correction to UE positioning reporting for GPS standalone operation mode	F	3.17.0	3.18.0	R2-040305	TEI
25.331	2223	1	Rel-4	Correction to UE positioning reporting for GPS standalone operation mode	A	4.12.0	4.13.0	R2-040306	TEI
25.331	2224	1	Rel-5	Correction to UE positioning reporting for GPS standalone operation mode	A	5.7.1	5.8.0	R2-040307	TEI
25.331	2225	1	Rel-6	Correction to UE positioning reporting for GPS standalone operation mode	A	6.0.1	6.1.0	R2-040308	TEI
25.331	2230	1	R99	Initialisation of virtual active set	F	3.17.0	3.18.0	R2-040670	TEI
25.331	2231	1	Rel-4	Initialisation of virtual active set	A	4.12.0	4.13.0	R2-040671	TEI
25.331	2232	-	R99	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE	F	3.17.0	3.18.0	R2-040582	TEI
25.331	2272	-	Rel-4	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE	A	4.12.0	4.13.0	R2-040583	TEI
25.331	2234	-	Rel-5	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE	A	5.7.1	5.8.0	R2-040584	TEI
25.331	2235	-	Rel-6	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE	A	6.0.1	6.1.0	R2-040585	TEI
25.331	2236	-	R99	Corrections to "Entered parameter"	F	3.17.0	3.18.0	R2-040586	TEI
25.331	2237	-	Rel-4	Corrections to "Entered parameter"	A	4.12.0	4.13.0	R2-040587	TEI
25.331	2238	-	Rel-5	Corrections to "Entered parameter"	A	5.7.1	5.8.0	R2-040588	TEI
25.331	2239	-	Rel-6	Corrections to "Entered parameter"	A	6.0.1	6.1.0	R2-040589	TEI

TSG-RAN Working Group 2 meeting #40
Sophia Antipolis, France , 12ᵗʰ – 16ᵗʰ January 2003

R2-040270

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2218** | ⌘**rev** | | ⌘ | Current version: | **3.17.0** ⌘ |

*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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction to Event 6D
Source: ⌘	RAN WG2
Work item code:⌘	TEI *Date:* ⌘ Jan 2004
Category: ⌘ **F**	*Release:* ⌘ R99

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

Use one of the following releases:
2   *(GSM Phase 2)*
R96   *(Release 1996)*
R97   *(Release 1997)*
R98   *(Release 1998)*
R99   *(Release 1999)*
Rel-4   *(Release 4)*
Rel-5   *(Release 5)*
Rel-6   *(Release 6)*

Reason for change: ⌘	An inconsistency was detected in the Reporting event 6D: "The UE Tx power reaches its maximum value".

Currently, the text in section 14.6.2.4 states that UE shall trigger the event 6D if the UE Tx power equals the **maximum allowed UE TX power**. According to section 8.6.6.8, IE "Maximum allowed UL TX power " defines this level. If the "Maximum allowed UE TX power" is set to e.g. 33 dBm, a UE with maximum Tx output power 24 dBm (according to its power class) will not trigger the event. This is not the intended behaviour, and is not in alignment with the title of the section 14.6.2.4. Furthermore, TS34.123 section 8.4.1.38 defines a test case in alignment with the intended behaviour.

In section 14.6.2.4, there is a reference to section 8.6.6.8 for the concept "maximum allowed UE TX power", but this concept is not defined in section 8.6.6.8. |
| *Summary of change:*⌘ | Section 8.6.6.8: Corrected such that "maximum UE Tx power" is defined as the lower of the maximum output power of the UE power class and the "maximum allowed UL TX power" in the cell.

Section 14.6.2.4: Event 6D criteria is corrected to consider the "maximum UE TX Power". The Note is corrected to also refer to the "maximum UE TX Power", as defined in section 8.6.6.8.

T1 impact: No impact. Test case in TS34.123 section 8.4.1.38 is already in alignment with the correction.

 Backward compatibility: Isolated to the function of event 6d only. Considered a clarification of currently specified UE behaviour. Existing conformance test case already verifies the correct behaviour. |

There is only impact on the UE behaviour and if not implemented the UE will not trigger the even 6d in certain cases. System impact then depends on if and how the network use this measurement report.

Consequences if not approved:	⌘	The indicated unclarities/incorrections will remain in the specification: A UE not compliant with this CR will not trigger Event 6D in certain cases. Inconsistency with conformance test case will remain.

Clauses affected:	⌘	8.6.6.8, 14.6.2.4			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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.

8.6.6.8 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included in the Handover to UTRAN Command, in any other dedicated message or in System Information Block type 3 or in System Information Block 4, the UE shall:

1> store and use the value until it is updated.

If the IE "Maximum allowed UL TX power" was not included in any dedicated message, the UE shall:

1> use the value previously stored, when received in an earlier dedicated message, Handover to UTRAN Command message or received in System Information Block type 3 or in System Information Block 4.

For all cases, the UE shall:

1> keep the UE uplink transmit power at or below the indicated power value;

1> if the current UE uplink transmit power is above the indicated power value:

2> decrease the power to a level at or below the power value.

The maximum UE ~~transmitter~~ TX power is defined as the lower of the maximum output power of the UE power class and the maximum allowed UL TX power indicated in this IE. The maximum UE ~~transmitter~~ TX power shall not be exceeded.

14.6.2.4   Reporting event 6D: The UE Tx power reaches its maximum value

When a UE internal measurement configuring event 6d is set up, the UE shall:

1> create a variable TRIGGERED_6D_EVENT related to that measurement, which shall initially be set to FALSE;

1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

1> if the UE Tx power equals the maximum allowed UE TX power (for TDD its maximum value on a single TS) for a time period indicated by the IE "time_to_trigger":

2> if the variable TRIGGERED_6D_EVENT is set to FALSE:

3> set the variable TRIGGERED_6D_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6d";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6D_EVENT is set to TRUE and if the UE Tx power is less than the maximum allowed UE TX power:

2> set the variable TRIGGERED_6D_EVENT to FALSE.

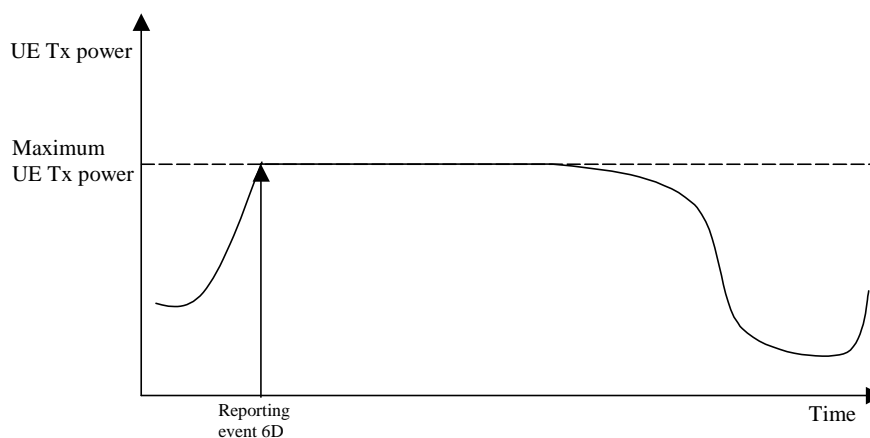NOTE: The maximum allowed UE TX power is defined in subclause 8.6.6.8.

Figure 14.6.2.4-1: Event-triggered report when the UE Tx power reaches its maximum value

TSG-RAN Working Group 2 meeting #40
Sophia Antipolis, France , 12ᵗʰ – 16ᵗʰ January 2003

R2-040271

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2219** | ⌘**rev** | | ⌘ | Current version: | **4.12.0** | ⌘ |

*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 **X** Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to Event 6D		
Source: ⌘	RAN WG2		
Work item code: ⌘	TEI	*Date:* ⌘	Jan 2004
Category: ⌘	**A**	*Release:* ⌘	Rel-4

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

Reason for change: ⌘	An inconsistency was detected in the Reporting event 6D: "The UE Tx power reaches its maximum value". Currently, the text in section 14.6.2.4 states that UE shall trigger the event 6D if the UE Tx power equals the **maximum allowed UE TX power**. According to section 8.6.6.8, IE "Maximum allowed UL TX power " defines this level. If the "Maximum allowed UE TX power" is set to e.g. 33 dBm, a UE with maximum Tx output power 24 dBm (according to its power class) will not trigger the event. This is not the intended behaviour, and is not in alignment with the title of the section 14.6.2.4. Furthermore, TS34.123 section 8.4.1.38 defines a test case in alignment with the intended behaviour. In section 14.6.2.4, there is a reference to section 8.6.6.8 for the concept "maximum allowed UE TX power", but this concept is not defined in section 8.6.6.8.
Summary of change: ⌘	Section 8.6.6.8: Corrected such that "maximum UE Tx power" is defined as the lower of the maximum output power of the UE power class and the "maximum allowed UL TX power" in the cell. Section 14.6.2.4: Event 6D criteria is corrected to consider the "maximum UE TX Power". The Note is corrected to also refer to the "maximum UE TX Power", as defined in section 8.6.6.8. **T1 impact:** No impact. Test case in TS34.123 section 8.4.1.38 is already in alignment with the correction. **Backward compatibility:** Isolated to the function of event 6d only. Considered a clarification of currently specified UE behaviour. Existing conformance test case already verifies the correct behaviour.

		There is only impact on the UE behaviour and if not implemented the UE will not trigger the even 6d in certain cases. System impact then depends on if and how the network use this measurement report.
Consequences if not approved:	⌘	The indicated unclarities/incorrections will remain in the specification: A UE not compliant with this CR will not trigger Event 6D in certain cases. Inconsistency with conformance test case will remain.

Clauses affected:	⌘	8.6.6.8, 14.6.2.4

			Y	N			
Other specs affected:	⌘			X	Other core specifications	⌘	
				X	Test specifications		
				X	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.

8.6.6.8 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included in the Handover to UTRAN Command, in any other dedicated message or in System Information Block type 3 or in System Information Block 4, the UE shall:

> 1> store and use the value until it is updated.

If the IE "Maximum allowed UL TX power" was not included in any dedicated message, the UE shall:

> 1> use the value previously stored, when received in an earlier dedicated message, Handover to UTRAN Command message or received in System Information Block type 3 or in System Information Block 4.

For all cases, the UE shall:

> 1> keep the UE uplink transmit power at or below the indicated power value;

> 1> if the current UE uplink transmit power is above the indicated power value:

>> 2> decrease the power to a level at or below the power value.

The maximum UE ~~transmitter~~ TX power is defined as the lower of the maximum output power of the UE power class and the maximum allowed UL TX power indicated in this IE. The maximum UE ~~transmitter~~ TX power shall not be exceeded.

14.6.2.4 Reporting event 6D: The UE Tx power reaches its maximum value

When a UE internal measurement configuring event 6d is set up, the UE shall:

1> create a variable TRIGGERED_6D_EVENT related to that measurement, which shall initially be set to FALSE;

1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

1> if the UE Tx power equals the maximum allowed UE TX power (for TDD its maximum value on a single TS) for a time period indicated by the IE "time_to_trigger":

2> if the variable TRIGGERED_6D_EVENT is set to FALSE:

3> set the variable TRIGGERED_6D_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6d";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6D_EVENT is set to TRUE and if the UE Tx power is less than the maximum allowed UE TX power:

2> set the variable TRIGGERED_6D_EVENT to FALSE.

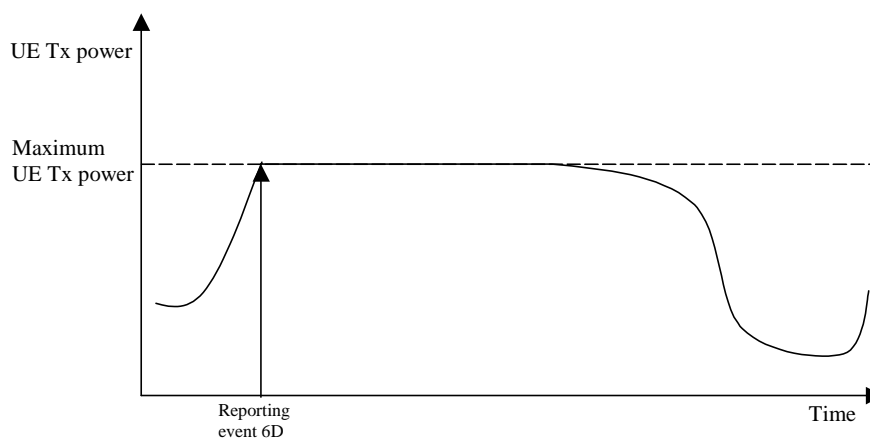NOTE: The maximum allowed UE TX power is defined in subclause 8.6.6.8.

Figure 14.6.2.4-1: Event-triggered report when the UE Tx power reaches its maximum value

TSG-RAN Working Group 2 meeting #40   **R2-040272**
Sophia Antipolis, France , 12ᵗʰ – 16ᵗʰ January 2003

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2220** | ⌘rev | | ⌘ Current version: | **5.7.1** | ⌘ |

*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 **X** Radio Access Network ☐   Core Network ☐

Title:	⌘	Correction to Event 6D	
Source:	⌘	RAN WG2	
Work item code: ⌘	TEI		***Date:*** ⌘ Jan 2004
Category: ⌘	**A**		***Release:*** ⌘ Rel-5

Use one of the following categories:	*Use one 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	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)

Reason for change: ⌘	An inconsistency was detected in the Reporting event 6D: "The UE Tx power reaches its maximum value".
	Currently, the text in section 14.6.2.4 states that UE shall trigger the event 6D if the UE Tx power equals the **maximum allowed UE TX power**. According to section 8.6.6.8, IE "Maximum allowed UL TX power " defines this level. If the "Maximum allowed UE TX power" is set to e.g. 33 dBm, a UE with maximum Tx output power 24 dBm (according to its power class) will not trigger the event. This is not the intended behaviour, and is not in alignment with the title of the section 14.6.2.4. Furthermore, TS34.123 section 8.4.1.38 defines a test case in alignment with the intended behaviour.
	In section 14.6.2.4, there is a reference to section 8.6.6.8 for the concept "maximum allowed UE TX power", but this concept is not defined in section 8.6.6.8.
Summary of change: ⌘	Section 8.6.6.8: Corrected such that "maximum UE Tx power" is defined as the lower of the maximum output power of the UE power class and the "maximum allowed UL TX power" in the cell.
	Section 14.6.2.4: Event 6D criteria is corrected to consider the "maximum UE TX Power". The Note is corrected to also refer to the "maximum UE TX Power", as defined in section 8.6.6.8.
	T1 impact: No impact. Test case in TS34.123 section 8.4.1.38 is already in alignment with the correction.
	Backward compatibility: Isolated to the function of event 6d only. Considered a clarification of currently specified UE behaviour. Existing conformance test case already verifies the correct behaviour.

		There is only impact on the UE behaviour and if not implemented the UE will not trigger the even 6d in certain cases. System impact then depends on if and how the network use this measurement report.
Consequences if not approved:	⌘	The indicated unclarities/incorrections will remain in the specification: A UE not compliant with this CR will not trigger Event 6D in certain cases. Inconsistency with conformance test case will remain.

Clauses affected:	⌘	8.6.6.8, 14.6.2.4		

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	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.

8.6.6.8 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included in the Handover to UTRAN Command, in any other dedicated message or in System Information Block type 3 or in System Information Block 4, the UE shall:

> 1> store and use the value until it is updated.

If the IE "Maximum allowed UL TX power" was not included in any dedicated message, the UE shall:

> 1> use the value previously stored, when received in an earlier dedicated message, Handover to UTRAN Command message or received in System Information Block type 3 or in System Information Block 4.

For all cases, the UE shall:

> 1> keep the UE uplink transmit power at or below the indicated power value;

> 1> if the current UE uplink transmit power is above the indicated power value:

> > 2> decrease the power to a level at or below the power value.

The maximum UE ~~transmitter~~ TX power is defined as the lower of the maximum output power of the UE power class and the maximum allowed UL TX power indicated in this IE. The maximum UE ~~transmitter~~ TX power shall not be exceeded.

14.6.2.4   Reporting event 6D: The UE Tx power reaches its maximum value

When a UE internal measurement configuring event 6d is set up, the UE shall:

1> create a variable TRIGGERED_6D_EVENT related to that measurement, which shall initially be set to FALSE;

1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

1> if the UE Tx power equals the maximum allowed UE TX power (for TDD its maximum value on a single TS) for a time period indicated by the IE "time_to_trigger":

2> if the variable TRIGGERED_6D_EVENT is set to FALSE:

3> set the variable TRIGGERED_6D_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6d";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6D_EVENT is set to TRUE and if the UE Tx power is less than the maximum allowed UE TX power:

2> set the variable TRIGGERED_6D_EVENT to FALSE.

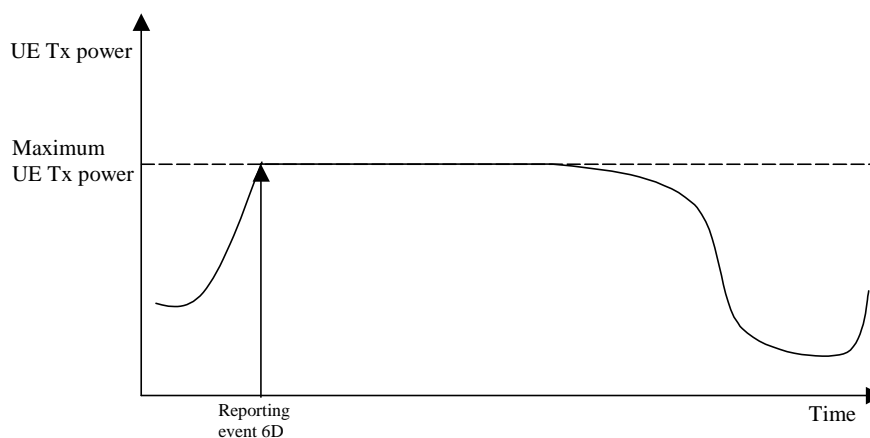NOTE: The maximum allowed UE TX power is defined in subclause 8.6.6.8.

Figure 14.6.2.4-1: Event-triggered report when the UE Tx power reaches its maximum value

TSG-RAN Working Group 2 meeting #40
Sophia Antipolis, France , 12th – 16th January 2003

R2-040273

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2221** | ⌘**rev** | | ⌘ | Current version: | **6.0.1** | ⌘ |

*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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction to Event 6D
Source: ⌘	RAN WG2
Work item code: ⌘	TEI	**Date:** ⌘ Jan 2004
Category: ⌘	**A**	**Release:** ⌘ Rel-6

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: ⌘	An inconsistency was detected in the Reporting event 6D: "The UE Tx power reaches its maximum value". Currently, the text in section 14.6.2.4 states that UE shall trigger the event 6D if the UE Tx power equals the **maximum allowed UE TX power**. According to section 8.6.6.8, IE "Maximum allowed <u>UL</u> TX power " defines this level. If the "Maximum allowed UE TX power" is set to e.g. 33 dBm, a UE with maximum Tx output power 24 dBm (according to its power class) will not trigger the event. This is not the intended behaviour, and is not in alignment with the title of the section 14.6.2.4. Furthermore, TS34.123 section 8.4.1.38 defines a test case in alignment with the intended behaviour. In section 14.6.2.4, there is a reference to section 8.6.6.8 for the concept "maximum allowed UE TX power", but this concept is not defined in section 8.6.6.8.
Summary of change: ⌘	Section 8.6.6.8: Corrected such that "maximum UE Tx power" is defined as the lower of the maximum output power of the UE power class and the "maximum allowed UL TX power" in the cell. Section 14.6.2.4: Event 6D criteria is corrected to consider the "maximum UE TX Power". The Note is corrected to also refer to the "maximum UE TX Power", as defined in section 8.6.6.8. **T1 impact:** No impact. Test case in TS34.123 section 8.4.1.38 is already in alignment with the correction. **Backward compatibility:** Isolated to the function of event 6d only. Considered a clarification of currently specified UE behaviour. Existing conformance test case already verifies the correct behaviour.

There is only impact on the UE behaviour and if not implemented the UE will not trigger the even 6d in certain cases. System impact then depends on if and how the network use this measurement report.

Consequences if not approved:	⌘	The indicated unclarities/incorrections will remain in the specification: A UE not compliant with this CR will not trigger Event 6D in certain cases. Inconsistency with conformance test case will remain.

Clauses affected:	⌘	8.6.6.8, 14.6.2.4		

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	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.

8.6.6.8 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included in the Handover to UTRAN Command, in any other dedicated message or in System Information Block type 3 or in System Information Block 4, the UE shall:

1> store and use the value until it is updated.

If the IE "Maximum allowed UL TX power" was not included in any dedicated message, the UE shall:

1> use the value previously stored, when received in an earlier dedicated message, Handover to UTRAN Command message or received in System Information Block type 3 or in System Information Block 4.

For all cases, the UE shall:

1> keep the UE uplink transmit power at or below the indicated power value;

1> if the current UE uplink transmit power is above the indicated power value:

2> decrease the power to a level at or below the power value.

The maximum UE ~~transmitter~~ TX power is defined as the lower of the maximum output power of the UE power class and the maximum allowed UL TX power indicated in this IE. The maximum UE ~~transmitter~~ TX power shall not be exceeded.

14.6.2.4 Reporting event 6D: The UE Tx power reaches its maximum value

When a UE internal measurement configuring event 6d is set up, the UE shall:

1> create a variable TRIGGERED_6D_EVENT related to that measurement, which shall initially be set to FALSE;

1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

1> if the UE Tx power equals the maximum allowed UE TX power (for TDD its maximum value on a single TS) for a time period indicated by the IE "time_to_trigger":

2> if the variable TRIGGERED_6D_EVENT is set to FALSE:

3> set the variable TRIGGERED_6D_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6d";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6D_EVENT is set to TRUE and if the UE Tx power is less than the maximum allowed UE TX power:

2> set the variable TRIGGERED_6D_EVENT to FALSE.

NOTE: The maximum allowed UE TX power is defined in subclause 8.6.6.8.

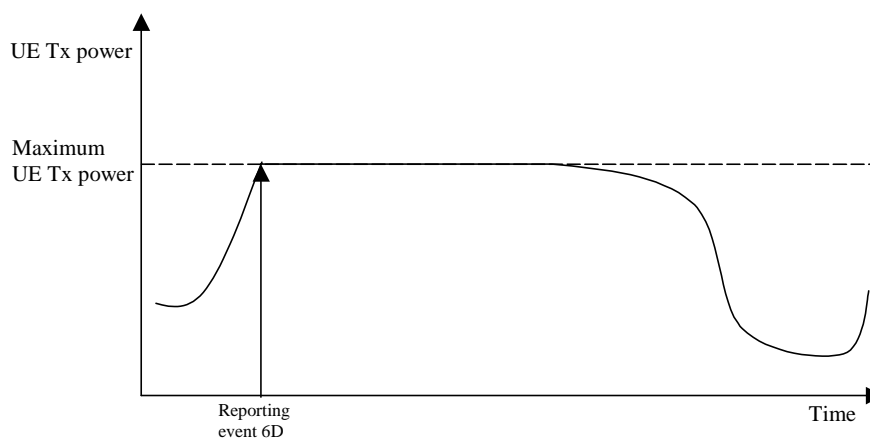**Figure 14.6.2.4-1: Event-triggered report when the UE Tx power reaches its maximum value**

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2222** | ⌘ **rev** | **1** | ⌘ | Current version: | **3.17.0** | ⌘ |

*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 [X] Radio Access Network [ ] Core Network [ ]

Title: ⌘	Correction to UE positioning reporting for GPS standalone operation mode	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 12/01/2004
Category: ⌘	**F**	***Release:*** ⌘ R99

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: ⌘	The current conditions for UE positioning reporting for UE based methods does not does not take into account that a UE may be able to calculate a position for A-GPS without the need of (further) assistance data from the UTRAN.
Summary of change: ⌘	The conditions for triggering UE positioning reporting in section 8.6.7.19.1b have been corrected in order to take into account that a UE may be able to calculate a position without the need of assistance data from UTRAN **Impact Analysis** Impacted functionality: UE positioning reporting for UE based methods If the UE has not implemented the CR: A position report will not be triggered if the UE was able to calculate a position without requesting assistance data from UTRAN.
Consequences if not approved: ⌘	A position report will not be triggered if the UE was able to calculate a position without using assistance data in the variable UE_POSITIONING_GPS_DATA.

Clauses affected: ⌘	8.6.7.19.1b

	Y	N		
Other specs ⌘		X	Other core specifications	⌘
affected:		X	Test specifications	
		X	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.

8.6.7.19.1b UE positioning reporting for UE based methods

The UE shall:

1> when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or ~~on the list of satellites~~ the UE has been able to calculate a position ~~included in the variable UE_POSITIONING_GPS_DATA~~ in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE supports the capability to perform the UE GPS timing of cell frames measurement:

5> if the IE "GPS timing of Cell wanted" is set to TRUE:

6> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD;

6> include the SFN when the position was determined;

6> include the IE "UE GPS timing of cell frames".

5> if the IE "GPS timing of Cell wanted" is set to FALSE:

6> include the IE "GPS TOW msec".

4> if the UE does not support the capability to provide the GPS timing of the cell:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to value "0":

6> if the IE "Horizontal Accuracy" has been assigned a value "0":

7> may include IE "Ellipsoid point with altitude".

6> if the IE "Horizontal Accuracy" has been assigned a value unequal to "0"; and

6> if the UE has been able to calculate a 3-dimensional position

7> include IE "Ellipsoid point with altitude" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> may act as if IE "Vertical Accuracy" was not included in IE "UE positioning reporting quantity".

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

2> if the UE was not able to calculate a position:

3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.

1> if the UE is unable to calculate a position due to missing GPS assistance data, the UE may at any time:

2> send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2223** | ⌘**rev** **1** | ⌘ | Current version: | **4.12.0** | ⌘ |

*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 **X** Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to UE positioning reporting for GPS standalone operation mode	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI	***Date:*** ⌘ 12/01/2004
Category: ⌘	**A**	***Release:*** ⌘ Rel-4

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: ⌘	The current conditions for UE positioning reporting for UE based methods does not does not take into account that a UE may be able to calculate a position for A-GPS without the need of (further) assistance data from the UTRAN.
Summary of change:⌘	The conditions for triggering UE positioning reporting in section 8.6.7.19.1b have been corrected in order to take into account that a UE may be able to calculate a position without the need of assistance data from UTRAN.
Consequences if not approved: ⌘	A position report will not be triggered if the UE was able to calculate a position without using assistance data in the variable UE_POSITIONING_GPS_DATA.

Clauses affected: ⌘	8.6.7.19.1b

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

Other comments: ⌘	

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.

8.6.7.19.1b UE positioning reporting for UE based methods

The UE shall:

1> when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or ~~on the list of satellites~~the UE has been able to calculate a position ~~included in the variable UE_POSITIONING_GPS_DATA~~ in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE supports the capability to perform the UE GPS timing of cell frames measurement:

5> if the IE "GPS timing of Cell wanted" is set to TRUE:

6> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD;

6> include the SFN when the position was determined;

6> include the IE "UE GPS timing of cell frames".

5> if the IE "GPS timing of Cell wanted" is set to FALSE:

6> include the IE "GPS TOW msec".

4> if the UE does not support the capability to provide the GPS timing of the cell:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to value "0":

6> if the IE "Horizontal Accuracy" has been assigned a value "0":

7> may include IE "Ellipsoid point with altitude".

6> if the IE "Horizontal Accuracy" has been assigned a value unequal to "0"; and

6> if the UE has been able to calculate a 3-dimensional position

7> include IE "Ellipsoid point with altitude" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> may act as if IE "Vertical Accuracy" was not included in IE "UE positioning reporting quantity".

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

2> if the UE was not able to calculate a position:

3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.

1> if the UE is unable to calculate a position due to missing GPS assistance data, the UE may at any time:

2> send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2224** | ⌘**rev** | **1** | ⌘ | Current version: | **5.7.1** | ⌘ |

*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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction to UE positioning reporting for GPS standalone operation mode	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI	*Date:* ⌘ 12/01/2004
Category: ⌘	**A**	*Release:* ⌘ Rel-5

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

Use one of the following releases:
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: ⌘	The current conditions for UE positioning reporting for UE based methods does not does not take into account that a UE may be able to calculate a position for A-GPS without the need of (further) assistance data from the UTRAN.
Summary of change:⌘	The conditions for triggering UE positioning reporting in section 8.6.7.19.1b have been corrected in order to take into account that a UE may be able to calculate a position without the need of assistance data from UTRAN.
Consequences if not approved: ⌘	A position report will not be triggered if the UE was able to calculate a position without using assistance data in the variable UE_POSITIONING_GPS_DATA.

Clauses affected: ⌘	8.6.7.19.1b

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

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.

8.6.7.19.1b   UE positioning reporting for UE based methods

The UE shall:

1> when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or ~~on the list of satellites~~the UE has been able to calculate a position ~~included in the variable UE_POSITIONING_GPS_DATA~~ in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE supports the capability to perform the UE GPS timing of cell frames measurement:

5> if the IE "GPS timing of Cell wanted" is set to TRUE:

6> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD;

6> include the SFN when the position was determined;

6> include the IE "UE GPS timing of cell frames".

5> if the IE "GPS timing of Cell wanted" is set to FALSE:

6> include the IE "GPS TOW msec".

4> if the UE does not support the capability to provide the GPS timing of the cell:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to value "0":

6> if the IE "Horizontal Accuracy" has been assigned a value "0":

7> may include IE "Ellipsoid point with altitude".

6> if the IE "Horizontal Accuracy" has been assigned a value unequal to "0"; and

6> if the UE has been able to calculate a 3-dimensional position

7> include IE "Ellipsoid point with altitude" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> may act as if IE "Vertical Accuracy" was not included in IE "UE positioning reporting quantity".

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5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

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2> if the UE was not able to calculate a position:

3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.

1> if the UE is unable to calculate a position due to missing GPS assistance data, the UE may at any time:

2> send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5.

CR-Form-v7

CHANGE REQUEST

⌘	**25.331** CR **2225**	⌘**rev**	**1**	⌘	Current version:	**6.0.1**	⌘

*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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to UE positioning reporting for GPS standalone operation mode	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 12/01/2004

Category: ⌘ **A**	***Release:*** ⌘ Rel-6

Use one of the following categories:	*Use one 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	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)

Reason for change: ⌘	The current conditions for UE positioning reporting for UE based methods does not does not take into account that a UE may be able to calculate a position for A-GPS without the need of (further) assistance data from the UTRAN.
Summary of change: ⌘	The conditions for triggering UE positioning reporting in section 8.6.7.19.1b have been corrected in order to take into account that a UE may be able to calculate a position without the need of assistance data from UTRAN.
Consequences if not approved: ⌘	A position report will not be triggered if the UE was able to calculate a position without using assistance data in the variable UE_POSITIONING_GPS_DATA.

Clauses affected: ⌘	8.6.7.19.1b	

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

Other comments: ⌘	

How to create CRs using this form:

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8.6.7.19.1b UE positioning reporting for UE based methods

The UE shall:

1> when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or ~~on the list of satellites~~ the UE has been able to calculate a position ~~included in the variable UE_POSITIONING_GPS_DATA~~ in case of GPS positioning:

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4> if the UE supports the capability to perform the UE GPS timing of cell frames measurement:

5> if the IE "GPS timing of Cell wanted" is set to TRUE:

6> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD;

6> include the SFN when the position was determined;

6> include the IE "UE GPS timing of cell frames".

5> if the IE "GPS timing of Cell wanted" is set to FALSE:

6> include the IE "GPS TOW msec".

4> if the UE does not support the capability to provide the GPS timing of the cell:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to value "0":

6> if the IE "Horizontal Accuracy" has been assigned a value "0":

7> may include IE "Ellipsoid point with altitude".

6> if the IE "Horizontal Accuracy" has been assigned a value unequal to "0"; and

6> if the UE has been able to calculate a 3-dimensional position

7> include IE "Ellipsoid point with altitude" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> may act as if IE "Vertical Accuracy" was not included in IE "UE positioning reporting quantity".

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

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4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

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5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

2> if the UE was not able to calculate a position:

3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.

1> if the UE is unable to calculate a position due to missing GPS assistance data, the UE may at any time:

2> send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5.

3GPP TSG-RAN WG2 Meeting #40   *Tdoc* ⌘*R2-040670*
Sophia Antipolis, France, 12th -16th January 2004

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2230** | ⌘**rev** | **1** | ⌘ | Current version: | **3.17.0** | ⌘ |

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Initialisation of virtual active set

Source:	⌘	RAN WG2

Work item code: ⌘	TEI		*Date:* ⌘	5/1/2004

Category:	⌘	**F**		*Release:* ⌘	R99

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)
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R97 (Release 1997)
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Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘	1/ Section 14.11.1 defines the initialisation of the virtual active set. The initialisation can use parameters that are provided as part of the inter-frequency measurement, or in the case that they are not provided then it uses parameters that are inherited from an intra-frequency measurement. The section has the following structure:

1> if the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message; or

1> if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:

the virtual active set is initialised based on the provided or stored parameters

1> if the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message:

the virtual active set is initialised based on the parameters inherited from an intra-frequency measurement

From this structure it can be seen that if the MEASUREMENT CONTROL message does not include the IE "Intra-Frequency measurement reporting criteria" but it is previously stored, and it does include the IE "Inter-frequency set update" then both conditions can be true. This would mean that the UE would have to initialise the virtual active set in 2 different ways. This is clearly not correct and the intended behaviour is that the second condition only applies when the IE "Intra-frequency measurement reporting criteria" is not present and it not previously stored.

2/ If the "autonomous update mode" is off then the UTRAN is responsible for maintaining the virtual active set in the mobile by sending MEASUREMENT CONTROL messages containing the IE "Inter frequency set update" to add/delete radio links. For the case that the parameters for initialising/maintaining the virtual active set are provided as part of the inter-frequency measurement then the spec clearly defines the behaviour for addition/deletion of radio links based on the information received from the UTRAN. However, the case that the parameters for initialising/maintaining the virtual active set are inherited from the an intra-frequency measurement the spec just says that the UE always initialises the set according to the received information - i.e. the UE will not do the add/delete as intended.

3/ The final 2 bullets of section 14.11.1 are only executed if the IE "Intra-Frequency measurement reporting criteria" is not received and is not previously stored and the IE "Inter frequency set update" is received. However, these bullets contain a condition 'if the IE "Inter frequency set update" is not received'. Hence these 2 bullets are never executed and are redundant.

4/ Due to limitations in the message structure the UTRAN may need to include the IE "Intra-Frequency measurement reporting criteria" but omitting the sub IE "Parameters required for each event" in many measurement control messages even if they are just updating the CELL_INFO_LIST. This limitation is described in the note in section 8.4.1.3. According to 14.11.1 every message such as this would cause the virtual active set to be initialised which is not the intended behaviour.

Note also that the first paragraph of 14.11.1 states that the section only applies if the IE "Inter frequency set update" or "Intra frequency reporting quantity" are included. The IE "Intra frequency reporting quantity" does not exist for inter frequency measurements but it is assumed that this is a typing mistake and it was intended to refer to "Intra frequency reporting criteria

The presence or previous storage of the IE "Intra-Frequency measurement reporting criteria" is used to determine whether the UE uses parameters inherited from an intra-frequency event configuration or not. However, according to the note in section 8.4.1.3, the UTRAN may need to include this IE even if it wants to use inherited parameters and so this can not be used as the only factor in determining whether inherited parameters should be used - the presence of the IE "Parameters required for each event should also be used".

In summary, this has the consequence that after the UTRAN has configured the UE with an event triggered inter-frequency measurement, the UTRAN can not send further MEASUREMENT CONTROL messages for this measurement without including either the inter-frequency event configuration or the intra-frequency event configuration (i.e. the UTRAN must include either the IEs 'inter-frequency reporting criteria" and "parameters required for each event" or the IEs "intra frequency reporting criteria" and "parameters required for each event"). Re-sending the event configuration will cause event triggers, etc to be reset, and the in the case of the intra-frequency event configuration will cause the virtual active set to be re-initialised.

Summary of change:⌘	It is proposed to not change section 14.11.1 in release 99 but only correct in release 5 (Note the release 5 CR for this was approved at RAN#22). However, it is proposed to add notes to the release 99 specification to state the following: 1 - If a newtork configures a event triggered inter-frequency measurement and then wishes to modify the cell info list used by the measurement then there certain limitation and consequences that need to be considered (e.g. a UE behaving according to the release 99 spec could re-initailise the virtual active set,

| | | or re-set its event triggers, etc)

2 - - That the functionality is corrected in release 5 and that release 99 UEs are permitted to implement this functionality according to the release 5 specification

Isolated Impact Analysis:
The impact of this CR is isolated to inter-frequency measurements using the virtual active set. The CR places no requirement on release 99 UEs to implement any change.

If the UTRAN fails to implement with consideration to the notes added in this CR then it may experience unpredictable measurement reporting behaviour from the UE, potentially triggering in-appropriate inter-frequency handovers. |
| ***Consequences if not approved:*** | ⌘ | If the CR is not approved then it will not be clear to UTRAN implementers that inter-frequency measurements using the virtual active set have some limitations. If the UTRAN does request the UE to perform these measurements without considering the limitations then it would result in unpredictable measurement reporting behaviour from the UE, potentially triggering in-appropriate inter-frequency handovers. |

Clauses affected:	⌘	14.11.1, 14.11.1a (new section), 8.4.1.3

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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.

8.4.1.3   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 ionospheric model", "UE positioning GPS UTC model", "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 all instances of 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 IEs 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.

NOTE: ~~If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency report criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".~~

NOTE: After UTRAN has configured the UE with an event triggered inter-frequency measurement using the virtual active set, if the UTRAN wants to modify the inter-frequency cell info list there are three options:

1 - Send a MEASUREMENT CONTROL message modifying the inter-frequency measurement and setting the choice "report criteria" to "intra-frequency measurement reporting criteria", not including the IE "parameters required for each event" and setting the choice "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria". This approach can be used in the case that the intra-frequency events are inherited from an intra-frequency measurement or the case that they are specific to this inter-frequency measurement. According to section 14.11.1 this could result in re-initialisation of the virtual active set.

2 - Setup a second inter-frequency measurement with the choice "report criteria" set to "no reporting". To update the inter-frequency cell info list send a MEASUREMENT CONTROL to modify this second inter-frequency measurement. This approach can be used to in the case that the intra-frequency events are inherited from an intra-frequency measurement or specific to the inter-frequency measurement. The MEASUREMENT CONTROL message can not update the IE "Cells for measurement" for the first inter-frequency measurement, and can not update virtual active for the first inter-frequency measurement in the case that the IE "autonomous update mode" is set to "off".

3 - Send a MEASUREMENT CONTROL message modifying the inter-frequency measurement and setting the choice "report criteria" to "inter-frequency measurement reporting criteria" and including the IE "parameters required for each event". This approach can be used to in the case that the intra-frequency events are inherited from an intra-frequency measurement. This could result in the reset of the inter-frequency event triggers within the UE.

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 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 identitifed 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.

14.11.1 Initial virtual active set

The UE shall initialise the virtual active set according to this subclause or according to subclause 14.11.1a.

NOTE: The initialisation of the virtual active is not specified correctly in 14.11.1. The initialisation of the virtual active set is correctly specified in 14.11.1a. A UE implemented according to the 14.11.1 may have unexpected behaviour in case UTRAN does not follow the note in section 8.4.1.3.

The way the UE shall act when a MEASUREMENT CONTROL message is received that sets up or modifies an inter-frequency measurement, and that includes the IE "Inter-frequency set update" and/or the IE "Intra-Frequency reporting quantity" is described below. The UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message; or

1> if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:

　2> if the IE "UE autonomous update mode" received or previously stored is set to "on" or "on with no reporting":

　　3> for each non-used frequency F_i considered in the measurement:

　　　4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0, the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

　　　　5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

　　　　where:

　　　　N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

　　　　$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

　　　　5> else:

$$N_i = N_{Cells\ Fi}$$

　　　　where:

　　　　$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

　2> if the IE "UE autonomous update mode" received or previously stored is set to "on":

　　3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

　　　4> send a MEASUREMENT REPORT with IEs set as follows:

　　　　5> set the Measurement identity to the identity of the inter-frequency measurement;

　　　　5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

　　　　5> do not include the IEs "measured results" or "additional measured results".

　2> if the IE "Inter-frequency set update" is included in the message and if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off" and if the IE "Intra-frequency measurement reporting criteria" was not included in the message:

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

2> if the IE "Inter-frequency set update" is not included in the message and if the IE "UE autonomous update mode" stored for the inter-frequency measurement is set to "Off":

3> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

3> consider the virtual active set for it as empty.

1> if the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:
$$N_i = \min(N_{1a}, N_{Cells\,Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\,Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\,Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\,Fi}$$

where:

$N_{Cells\,Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the

CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> set the initial virtual active set of the non-used frequency considered in that inter-frequency measurement according to what is included in the IE "Inter-frequency set update" included in the message; and

3> if the IE "Inter-frequency set update" was not received:

4> set the initial virtual active set for the frequencies considered in that measurement to be empty.

14.11.1a Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or

1> if the IE "Intra-Frequency measurement reporting criteria" including the IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0, the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ Fi}$$

where:

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

2> if the IE "UE autonomous update mode" is set to "on":

3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

4> send a MEASUREMENT REPORT with IEs set as follows:

5> set the Measurement identity to the identity of the inter-frequency measurement;

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all

the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

5> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and

1> the IE "Intra-Frequency measurement reporting criteria" including the IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:

$$N_i = \min(N_{1a}, N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ Fi}$$

where:

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

3GPP TSG-RAN WG2 Meeting #40
Sophia Antipolis, France, 12th -16th January 2004

Tdoc ⌘*R2-040671*

		CR-Form-v7

CHANGE REQUEST

⌘	**25.331** CR **2231**	⌘**rev** **1** ⌘	Current version: **4.12.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Initialisation of virtual active set	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 5/1/2004
Category: ⌘ **A**		***Release:*** ⌘ Rel-4

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

Use one of the following releases:
  2 *(GSM Phase 2)*
  R96 *(Release 1996)*
  R97 *(Release 1997)*
  R98 *(Release 1998)*
  R99 *(Release 1999)*
  Rel-4 *(Release 4)*
  Rel-5 *(Release 5)*
  Rel-6 *(Release 6)*

Reason for change: ⌘	1/ Section 14.11.1 defines the initialisation of the virtual active set. The initialisation can use parameters that are provided as part of the inter-frequency measurement, or in the case that they are not provided then it uses parameters that are inherited from an intra-frequency measurement. The section has the following structure:

> 1> if the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message; or

> 1> if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:

> the virtual active set is initialised based on the provided or stored parameters

> 1> if the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message:

> the virtual active set is initialised based on the parameters inherited from an intra-frequency measurement

From this structure it can be seen that if the MEASUREMENT CONTROL message does not include the IE "Intra-Frequency measurement reporting criteria" but it is previously stored, and it does include the IE "Inter-frequency set update" then both conditions can be true. This would mean that the UE would have to initialise the virtual active set in 2 different ways. This is clearly not correct and the intended behaviour is that the second condition only applies when the IE "Intra-frequency measurement reporting criteria" is not present and it not previously stored.

2/ If the "autonomous update mode" is off then the UTRAN is responsible for maintaining the virtual active set in the mobile by sending MEASUREMENT CONTROL messages containing the IE "Inter frequency set update" to add/delete radio links. For the case that the parameters for initialising/maintaining the virtual active set are provided as part of the inter-frequency measurement then the spec clearly defines the behaviour for addition/deletion of radio links based on the information received from the UTRAN. However, the case that the parameters for initialising/maintaining the virtual active set are inherited from the an intra-frequency measurement the spec just says that the UE always initialises the set according to the received information - i.e. the UE will not do the add/delete as intended.

3/ The final 2 bullets of section 14.11.1 are only executed if the IE "Intra-Frequency measurement reporting criteria" is not received and is not previously stored and the IE "Inter frequency set update" is received. However, these bullets contain a condition 'if the IE "Inter frequency set update" is not received'. Hence these 2 bullets are never executed and are redundant.

4/ Due to limitations in the message structure the UTRAN may need to include the IE "Intra-Frequency measurement reporting criteria" but omitting the sub IE "Parameters required for each event" in many measurement control messages even if they are just updating the CELL_INFO_LIST. This limitation is described in the note in section 8.4.1.3. According to 14.11.1 every message such as this would cause the virtual active set to be initialised which is not the intended behaviour.

Note also that the first paragraph of 14.11.1 states that the section only applies if the IE "Inter frequency set update" or "Intra frequency reporting quantity" are included. The IE "Intra frequency reporting quantity" does not exist for inter frequency measurements but it is assumed that this is a typing mistake and it was intended to refer to "Intra frequency reporting criteria

The presence or previous storage of the IE "Intra-Frequency measurement reporting criteria" is used to determine whether the UE uses parameters inherited from an intra-frequency event configuration or not. However, according to the note in section 8.4.1.3, the UTRAN may need to include this IE even if it wants to use inherited parameters and so this can not be used as the only factor in determining whether inherited parameters should be used - the presence of the IE "Parameters required for each event should also be used".

In summary, this has the consequence that after the UTRAN has configured the UE with an event triggered inter-frequency measurement, the UTRAN can not send further MEASUREMENT CONTROL messages for this measurement without including either the inter-frequency event configuration or the intra-frequency event configuration (i.e. the UTRAN must include either the IEs 'inter-frequency reporting criteria" and "parameters required for each event" or the IEs "intra frequency reporting criteria" and "parameters required for each event"). Re-sending the event configuration will cause event triggers, etc to be reset, and the in the case of the intra-frequency event configuration will cause the virtual active set to be re-initialised.

Summary of change: ⌘	It is proposed to not change section 14.11.1 in release 99 but only correct in release 5 (Note the release 5 CR for this was approved at RAN#22). However, it is proposed to add notes to the release 99 specification to state the following: 1 - If a newtork configures a event triggered inter-frequency measurement and then wishes to modify the cell info list used by the measurement then there certain limitation and consequences that need to be considered (e.g. a UE behaving according to the release 99 spec could re-initailise the virtual active set,

		or re-set its event triggers, etc)
		2 - - That the functionality is corrected in release 5 and that release 99 UEs are permitted to implement this functionality according to the release 5 specification
		Isolated Impact Analysis: The impact of this CR is isolated to inter-frequency measurements using the virtual active set. The CR places no requirement on release 99 UEs to implement any change.
		If the UTRAN fails to implement with consideration to the notes added in this CR then it may experience unpredictable measurement reporting behaviour from the UE, potentially triggering in-appropriate inter-frequency handovers.
Consequences if not approved:	⌘	If the CR is not approved then it will not be clear to UTRAN implementers that inter-frequency measurements using the virtual active set have some limitations. If the UTRAN does request the UE to perform these measurements without considering the limitations then it would result in unpredictable measurement reporting behaviour from the UE, potentially triggering in-appropriate inter-frequency handovers.

Clauses affected:	⌘	14.11.1, 14.11.1a (new section), 8.4.1.3		
		Y | **N**		
Other specs affected:	⌘	| **X** | **X** | **X**	Other core specifications Test specifications O&M Specifications	⌘
Other comments:	⌘			

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 ionospheric model", "UE positioning GPS UTC model", "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 all instances of 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 IEs 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.

NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency report criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".

NOTE: After UTRAN has configured the UE with an event triggered inter-frequency measurement using the virtual active set, if the UTRAN wants to modify the inter-frequency cell info list there are three options:

1 - Send a MEASUREMENT CONTROL message modifying the inter-frequency measurement and setting the choice "report criteria" to "intra-frequency measurement reporting criteria", not including the IE "parameters required for each event" and setting the choice "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria". This approach can be used in the case that the intra-frequency events are inherited from an intra-frequency measurement or the case that they are specific to this inter-frequency measurement. According to section 14.11.1 this could result in re-initialisation of the virtual active set.

2 - Setup a second inter-frequency measurement with the choice "report criteria" set to "no reporting". To update the inter-frequency cell info list send a MEASUREMENT CONTROL to modify this second inter-frequency measurement. This approach can be used to in the case that the intra-frequency events are inherited from an intra-frequency measurement or specific to the inter-frequency measurement. The MEASUREMENT CONTROL message can not update the IE "Cells for measurement" for the first inter-frequency measurement, and can not update virtual active for the first inter-frequency measurement in the case that the IE "autonomous update mode" is set to "off".

3 - Send a MEASUREMENT CONTROL message modifying the inter-frequency measurement and setting the choice "report criteria" to "inter-frequency measurement reporting criteria" and including the IE "parameters required for each event". This approach can be used to in the case that the intra-frequency events are inherited from an intra-frequency measurement. This could result in the reset of the inter-frequency event triggers within the UE.

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 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 identitifed 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.

14.11.1 Initial virtual active set

The UE shall initialise the virtual active set according to this subclause or according to subclause 14.11.1a.

NOTE: The initialisation of the virtual active is not specified correctly in 14.11.1. The initialisation of the virtual active set is correctly specified in 14.11.1a. A UE implemented according to the 14.11.1 may have unexpected behaviour in case UTRAN does not follow the note in section 8.4.1.3.

The way the UE shall act when a MEASUREMENT CONTROL message is received that sets up or modifies an inter-frequency measurement, and that includes the IE "Inter-frequency set update" and/or the IE "Intra-Frequency reporting quantity" is described below. The UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" is included in the MEASUREMENT CONTROL message; or

1> if it was previously stored and if the IE "Inter-frequency set update" was included in the MEASUREMENT CONTROL message:

  2> if the IE "UE autonomous update mode" received or previously stored is set to "on" or "on with no reporting":

    3> for each non-used frequency F_i considered in the measurement:

      4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0, the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

        5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, \ N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

        where:

        N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

        $N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

        5> else:

$$N_i = N_{Cells\ Fi}$$

        where:

        $N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

  2> if the IE "UE autonomous update mode" received or previously stored is set to "on":

    3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

      4> send a MEASUREMENT REPORT with IEs set as follows:

        5> set the Measurement identity to the identity of the inter-frequency measurement;

        5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

        5> do not include the IEs "measured results" or "additional measured results".

  2> if the IE "Inter-frequency set update" is included in the message and if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off" and if the IE "Intra-frequency measurement reporting criteria" was not included in the message:

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

2> if the IE "Inter-frequency set update" is not included in the message and if the IE "UE autonomous update mode" stored for the inter-frequency measurement is set to "Off":

3> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

3> consider the virtual active set for it as empty.

1> if the IE "Intra-Frequency measurement reporting criteria" was not included in the MEASUREMENT CONTROL message:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:
$$N_i = \min(N_{1a}, N_{Cells\,Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\,Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\,Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\,Fi}$$

where:

$N_{Cells\,Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the

CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> set the initial virtual active set of the non-used frequency considered in that inter-frequency measurement according to what is included in the IE "Inter-frequency set update" included in the message; and

3> if the IE "Inter-frequency set update" was not received:

4> set the initial virtual active set for the frequencies considered in that measurement to be empty.

14.11.1a Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update", the UE shall:

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" is included in the MEASUREMENT CONTROL message; or

1> if the IE "Intra-Frequency measurement reporting criteria" including the IE "Parameters required for each event" are stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0, the greatest downlink RSCP after despreading, or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

$$N_i = \min(N_{1a}, N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the "Intra-Frequency measurement" IE received for that inter-frequency measurement for event 1a.

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ Fi}$$

where:

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

2> if the IE "UE autonomous update mode" is set to "on":

3> if event 1a is configured in the "Intra-Frequency measurement reporting criteria":

4> send a MEASUREMENT REPORT with IEs set as follows:

5> set the Measurement identity to the identity of the inter-frequency measurement;

5> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all

the cells included in a virtual active set of the non-used frequency considered in the inter-frequency measurement;

5> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "Off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

1> if the IE "Intra-Frequency measurement reporting criteria" and the IE "Parameters required for each event" were not included in the MEASUREMENT CONTROL message; and

1> the IE "Intra-Frequency measurement reporting criteria" including the IE "Parameters required for each event" are not stored for this measurement in the variable MEASUREMENT_IDENTITY:

2> if the IE "UE autonomous update mode" is set to "on" or "on with no reporting":

3> for each non-used frequency F_i considered in the measurement:

4> include in the initial virtual active set the N_i cells that have either the greatest downlink E_c/N_0 or the greatest downlink RSCP after despreading or the lowest pathloss (depending on what is indicated in the IE "inter-frequency measurement quantity"), among the cells on frequency F_i considered in that inter-frequency measurement, where:

5> if event 1a is configured for the used frequency in an intra-frequency measurement:

$$N_i = \min(N_{1a}, \ N_{Cells\ Fi}) \text{ if } N_{1a} \neq 0 \text{ and } N_i = N_{Cells\ Fi} \text{ otherwise.}$$

where:

N_{1a} is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity.

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

5> else:

$$N_i = N_{Cells\ Fi}$$

where:

$N_{Cells\ Fi}$ is the number of cells on frequency F_i considered in that inter-frequency measurement.

3> if the IE "UE autonomous update mode" is set to "on":

4> if event 1a is configured for the used frequency in an intra-frequency measurement:

5> send a measurement report with IEs set as follows:

6> set the Measurement identity to the identity of the inter-frequency measurement;

6> set the CHOICE event result in the IE Event results to Intra-frequency measurement event results, Intra-frequency event identity to 1a, and in "Cell measurement event results" the CPICH info of all the cells included in the initial virtual active set of the non-used frequency considered in that measurement;

6> do not include the IEs "measured results" or "additional measured results".

2> if the IE "UE autonomous update mode" is set to "off":

3> if the IE "Measurement command" is set to "Modify", if the value previously stored for the IE "UE autonomous update mode" was also "Off":

4> apply the modifications indicated in the "Inter-frequency set update" to the virtual active set that was valid before the message was received for the non-used frequency considered in that inter-frequency measurement.

3> otherwise:

4> remove the possibly existing virtual active set of the non-used frequency considered in that measurement; and

4> set the initial virtual active set for it according to the "Inter-frequency set update" included in the message.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** | **CR** | **2232** | ⌘**rev** | | ⌘ | Current version: | **3.17.0** | ⌘ |

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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE
Source:	⌘	RAN WG2
Work item code:⌘	TEI	*Date:* ⌘ 16/02/2004
Category:	⌘ **F**	*Release:* ⌘ R99

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

Reason for change:⌘[H1	The setting of the ciphering activation time for the TM bearers is done by the UE or by the UTRAN depending of the procedure. UTRAN choses the activation time for TM bearers during the SECURITY MODE COMMAND procedure and sets it in the IE "Ciphering activation time for DPCH". In case of setup of the first TM bearers, 2G to 3G HO and SRNS relocation, the UE choses the activation time and sets it in the IE "COUNT-C activation time". • In the event of a SEURITY MODE COMMAND procedure shortly following the setup of the first TM bearers or a SRNS relocation, the UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times had elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). If that happens, the UE actions are not defined in the current specification. • In the case of the 2G to 3G HO, CR1976 from RAN#22 has added a note saying that the UTRAN should not send the Ciphering Mode Info IE again, until all ciphering activation times for RBs using RLC-TM of the concerned CN domain have expired. But it is sufficient that the UTRAN set the activation time for the reconfiguration after the activation time chosen by the UE in the IE "COUNT-C activation time".
Summary of change:⌘	• It is clarified that when setting the IE "Ciphering activation time for DPCH", UTRAN should take make sure that the ciphering reconfiguration will occur after the expiry of any activation times for RBs

		using RLC-TM of the concerned CN domain.
		• In section 8.3.6.3, the second part of the Note on the inclusion of the IE Ciphering Mode Info is deleted : UTRAN is allowed to send the Ciphering Mode Info IE again, even if ciphering activation times for RBs using RLC-TM of the concerned CN domain have not expired but it has to set the IE "Ciphering activation time for DPCH" so that the ciphering reconfiguration will occur after the expiry.
Consequences if not approved:	⌘	UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times have elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). It will have an unpredictable result and loss of ciphering synchronisation between UE and UTRAN may occur.

Clauses affected:	⌘	8.1.12.2.1, 8.3.6.3	

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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.

8.1.12.2.1   Ciphering configuration change

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

When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering 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 ciphering 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 ciphering 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 ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

> 1> if a transparent mode radio bearer for this CN domain exists:

>> 2> include the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info", at which time the new ciphering configuration shall be applied and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);

> NOTE: UTRAN should chose the value for the IE "Ciphering activation time for DPCH" such that the new ciphering configuration will occur after all the pending ciphering activation times have been reached for the transparent mode radio bearers of this CN domain.

> 1> consider a ciphering 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 ciphering activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

> 1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphering activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" to the value used in the previous security mode control procedure, at which time the latest ciphering 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 ciphering 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.

3GPP TS aa.bbb vX.Y.Z (YYYY-MM)

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 $_{Pilot-DPDCH}$ bearer in FDD;

   3> calculate the Default DPCH Offset Value using the following formula:

   3> in FDD:

$$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod 600}) * 512$$

   3> in TDD:

<div align="center">Default DPCH Offset Value = (SRNTI 2 mod 7)</div>

> 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;

NOTE: Keys received while in another RAT are not regarded as "new" (i.e. do not trigger the actions in subclause 8.1.12.3.1) in a subsequent security control procedure in UTRAN, irrespective of whether the keys are already being used in the other RAT or not. If the UE has received new keys in the other RAT before handover, then the START values in the USIM (sent in the HANDOVER TO UTRAN COMPLETE message and in the INTER_RAT_HANDOVER_INFO sent to the BSS while in the other RAT) will not reflect the receipt of these new keys. At a subsequent security mode control procedure in UTRA, UE activates ciphering and/or integrity protection using the key set stored in the USIM/SIM.

1> set the value of "THRESHOLD" in the variable "START_THRESHOLD" equal to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain, or to the default value in [40] 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" with the ciphering key set stored in the USIM/SIM and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

NOTE: If ciphering has been activated and ongoing in the radio access technology from which inter RAT handover is performed, UTRAN should not include the IE "Ciphering mode info" in the SECURITY MODE COMMAND message that starts Integrity protection.~~, and should not send a SECURITY MODE COMMAND including IE "Ciphering mode info" and IE "CN domain identity" set to the same value as UE variable LATEST_CONFIGURED_CN_DOMAIN until all pending ciphering activation times have been reached for the radio bearers using RLC-TM.~~

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> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;

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 even if the "COUNT-C activation time" is equal to zero;

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.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** | CR | **2234** | ⌘**rev** | | ⌘ | Current version: | **5.7.1** | ⌘ |

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

Title:	⌘	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE
Source:	⌘	RAN WG2

Work item code: ⌘	TEI	***Date:*** ⌘	16/02/2004

Category:	⌘	**A**		***Release:*** ⌘	Rel-5

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

Use one of the following releases:
   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:⌘[H1	The setting of the ciphering activation time for the TM bearers is done by the UE or by the UTRAN depending of the procedure.
	
	UTRAN choses the activation time for TM bearers during the SECURITY MODE COMMAND procedure and sets it in the IE "Ciphering activation time for DPCH".
	
	In case of setup of the first TM bearers, 2G to 3G HO and SRNS relocation, the UE choses the activation time and sets it in the IE "COUNT-C activation time".
	
	  • In the event of a SEURITY MODE COMMAND procedure shortly following the setup of the first TM bearers or a SRNS relocation, the UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times had elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). If that happens, the UE actions are not defined in the current specification.
	
	  • In the case of the 2G to 3G HO, CR1976 from RAN#22 has added a note saying that the UTRAN should not send the Ciphering Mode Info IE again, until all ciphering activation times for RBs using RLC-TM of the concerned CN domain have expired. But it is sufficient that the UTRAN set the activation time for the reconfiguration after the activation time chosen by the UE in the IE "COUNT-C activation time".

Summary of change: ⌘	• It is clarified that when setting the IE "Ciphering activation time for DPCH", UTRAN should take make sure that the ciphering reconfiguration will occur after the expiry of any activation times for RBs

		using RLC-TM of the concerned CN domain.
		• In section 8.3.6.3, the second part of the Note on the inclusion of the IE Ciphering Mode Info is deleted : UTRAN is allowed to send the Ciphering Mode Info IE again, even if ciphering activation times for RBs using RLC-TM of the concerned CN domain have not expired but it has to set the IE "Ciphering activation time for DPCH" so that the ciphering reconfiguration will occur after the expiry.
Consequences if not approved:	⌘	UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times have elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). It will have an unpredictable result and loss of ciphering synchronisation between UE and UTRAN may occur.

Clauses affected:	⌘	8.1.12.2.1, 8.3.6.3		
		Y	**N**	
Other specs affected:	⌘		**X**	Other core specifications ⌘
			X	Test specifications
			X	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.

8.1.12.2.1   Ciphering configuration change

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

When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering 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 ciphering 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 ciphering 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 ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

1> if a transparent mode radio bearer for this CN domain exists:

2> include the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info", at which time the new ciphering configuration shall be applied and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);

NOTE: UTRAN should chose the value for the IE "Ciphering activation time for DPCH" such that the new ciphering configuration will occur after all the pending ciphering activation times have been reached for the transparent mode radio bearers of this CN domain.

1> consider a ciphering 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 ciphering activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphering activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" to the value used in the previous security mode control procedure, at which time the latest ciphering 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 ciphering 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.

8.3.6.3 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 $_{Pilot-DPDCH}$ 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;

NOTE: Keys received while in another RAT are not regarded as "new" (i.e.do not trigger the actions in subclause 8.1.12.3.1) in a subsequent security control procedure in UTRAN, irrespective of whether the keys are already being used in the other RAT or not. If the UE has received new keys in the other RAT before handover, then the START values in the USIM (sent in the HANDOVER TO UTRAN COMPLETE message and in the INTER_RAT_HANDOVER_INFO sent to the BSS while in the other RAT) will not reflect the receipt of these new keys. At a subsequent security mode control procedure in UTRA, UE activates ciphering and/or integrity protection using the key set stored in the USIM/SIM.

1> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain, or to the default value in [40] 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" with the ciphering key set stored in the USIM/SIM and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

NOTE: If ciphering has been activated and ongoing in the radio access technology from which inter RAT handover is performed, UTRAN should not include the IE "Ciphering mode info" in the SECURITY MODE COMMAND message that starts Integrity protection~~, and should not send a SECURITY MODE COMMAND including IE "Ciphering mode info" and IE "CN domain identity" set to the same value as UE variable LATEST_CONFIGURED_CN_DOMAIN until all pending ciphering activation times have been reached for the radio bearers using RLC-TM~~.

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> Set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;

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 even if the "COUNT-C activation time" is equal to zero;

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.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** | CR | **2235** | ⌘**rev** | | ⌘ | Current version: | **6.0.1** | ⌘ |

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

Title: ⌘	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI	***Date:*** ⌘ 16/02/2004
Category: ⌘ **A**	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 <u>TR 21.900</u>.	***Release:*** ⌘ Rel-6 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:⌘[H1	The setting of the ciphering activation time for the TM bearers is done by the UE or by the UTRAN depending of the procedure. UTRAN choses the activation time for TM bearers during the SECURITY MODE COMMAND procedure and sets it in the IE "Ciphering activation time for DPCH". In case of setup of the first TM bearers, 2G to 3G HO and SRNS relocation, the UE choses the activation time and sets it in the IE "COUNT-C activation time". • In the event of a SEURITY MODE COMMAND procedure shortly following the setup of the first TM bearers or a SRNS relocation, the UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times had elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). If that happens, the UE actions are not defined in the current specification. • In the case of the 2G to 3G HO, CR1976 from RAN#22 has added a note saying that the UTRAN should not send the Ciphering Mode Info IE again, until all ciphering activation times for RBs using RLC-TM of the concerned CN domain have expired. But it is sufficient that the UTRAN set the activation time for the reconfiguration after the activation time chosen by the UE in the IE "COUNT-C activation time".
Summary of change: ⌘	• It is clarified that when setting the IE "Ciphering activation time for DPCH", UTRAN should take make sure that the ciphering reconfiguration will occur after the expiry of any activation times for RBs

		using RLC-TM of the concerned CN domain.
		• In section 8.3.6.3, the second part of the Note on the inclusion of the IE Ciphering Mode Info is deleted : UTRAN is allowed to send the Ciphering Mode Info IE again, even if ciphering activation times for RBs using RLC-TM of the concerned CN domain have not expired but it has to set the IE "Ciphering activation time for DPCH" so that the ciphering reconfiguration will occur after the expiry.
Consequences if not approved:	⌘	UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times have elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). It will have an unpredictable result and loss of ciphering synchronisation between UE and UTRAN may occur.

Clauses affected:	⌘	8.1.12.2.1, 8.3.6.3		

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	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 Ciphering configuration change

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

When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering 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 ciphering 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 ciphering 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 ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

1> if a transparent mode radio bearer for this CN domain exists:

2> include the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info", at which time the new ciphering configuration shall be applied and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);

NOTE: UTRAN should chose the value for the IE "Ciphering activation time for DPCH" such that the new ciphering configuration will occur after all the pending ciphering activation times have been reached for the transparent mode radio bearers of this CN domain.

1> consider a ciphering 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 ciphering activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphering activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" to the value used in the previous security mode control procedure, at which time the latest ciphering 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 ciphering 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.

8.3.6.3   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 $P_{Pilot-DPDCH}$ 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;

NOTE: Keys received while in another RAT are not regarded as "new" (i.e.do not trigger the actions in subclause 8.1.12.3.1) in a subsequent security control procedure in UTRAN, irrespective of whether the keys are already being used in the other RAT or not. If the UE has received new keys in the other RAT before handover, then the START values in the USIM (sent in the HANDOVER TO UTRAN COMPLETE message and in the INTER_RAT_HANDOVER_INFO sent to the BSS while in the other RAT) will not reflect the receipt of these new keys. At a subsequent security mode control procedure in UTRA, UE activates ciphering and/or integrity protection using the key set stored in the USIM/SIM.

1> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain, or to the default value in [40] 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" with the ciphering key set stored in the USIM/SIM and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

NOTE: If ciphering has been activated and ongoing in the radio access technology from which inter RAT handover is performed, UTRAN should not include the IE "Ciphering mode info" in the SECURITY MODE COMMAND message that starts Integrity protection.~~, and should not send a SECURITY MODE COMMAND including IE "Ciphering mode info" and IE "CN domain identity" set to the same value as UE variable LATEST_CONFIGURED_CN_DOMAIN until all pending ciphering activation times have been reached for the radio bearers using RLC-TM.~~

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> Set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;

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 even if the "COUNT-C activation time" is equal to zero;

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.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2236** | ⌘rev | **-** | ⌘ | Current version: | **3.17.0** | ⌘ |

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

Title:	⌘	Corrections to "Entered parameter"

Source:	⌘	RAN WG2

Work item code:⌘	TEI		***Date:*** ⌘	February 16 2004

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		*Rel-4*	*(Release 4)*
be found in 3GPP <u>TR 21.900</u>.		*Rel-5*	*(Release 5)*
		Rel-6	*(Release 6)*

Reason for change: ⌘		The setting of the value of the IE "Entered parameter" is incorrectly specified. In fact, the current LAI/RAI is compared to the most significant byte of the LAI/RAI stored on the SIM, but the LAC should have been used instead. Moreover, it was realized that this IE is not used for Iu-flex by the RNC.
Summary of change:⌘		The IE "Entered parameter" is deleted from the tabular description, and it is changed into "dummy" in the ASN.1 description. A comment is added stating: "dummy is not used in this version of the specification and it should be ignored by the receiver"
		Isolated Impact Change Analysis.
		This change clarifies the setting of the IE "Entered parameter" in the signalling connection establishment procedure. Since the clarification affects a procedure that does not work (the IE "Entered parameter" is not used by the Iu-flex), there are no isolated impacts.
		Impact on test specifications
		Test case 8.1.1.7 and other test cases in TS 34.123-1 rely on a particular setting of the IE "Entered parameter". If this CR is approved, these test cases should be modified so that the system simulator ignores the value of the received parameter.
Consequences if ⌘		The UE would be required to support a functionality that does not work.

not approved:	Moreover, test case 8.1.1.7 would be failed by otherwise standard compliant UE implementations.

Clauses affected:	⌘	10.3.1.6, 11.3		

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	TS 34.123-1 linked CRs agreed in T1: - T1-040242 (for Package 1 test cases), - T1-040306 (other test cases), - T1-040307 (defaults in 34.108 R99), - T1-040411 (defaults in 34.108 R4).
		X		Test specifications		
			X	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.

[…]

10.3.1.6   Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *version*	MP			
>R99				
>>CHOICE *CN type*	MP			
>>>GSM-MAP				
>>>>CHOICE *Routing basis*	MP			
>>>>>local (P)TMSI				TMSI allocated in the current LA or PTMSI allocated in the current RA
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of same PLMN, different (RA)LA				TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of different PLMN				TMSI or a PTMSI allocated in another PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>IMSI(response to IMSI paging)				NAS identity is IMSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result .
>>>>>IMSI(cause UE initiated event)				NAS identity is IMSI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>IMEI				NAS parameter is IMEI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMEI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>Spare 1			Bit string (10)	This choice shall not be used in this version
>>>>>Spare 2			Bit string (10)	This choice shall not be used in this version
~~>>>>Entered parameter~~	~~MP~~		~~Boolean~~	~~Entered parameter shall be set to TRUE if the most significant byte of the current LAI/RAI is different compared to the most significant byte of the LAI/RAI stored on the SIM; Entered parameter shall be set to FALSE otherwise~~
>>>ANSI-41			Bit string (14)	All bits shall be set to 0
>Later			Bit string(15)	This bit string shall not be sent by mobiles that are compliant to this version of the protocol.

[…]

11.3   Information element definitions

[…]

```
Gsm-map-IDNNS ::=                       SEQUENCE {
    routingbasis                            CHOICE {
        localPTMSI                              SEQUENCE {
            routingparameter                        RoutingParameter
        },
        tMSIofsamePLMN                          SEQUENCE {
            routingparameter                        RoutingParameter
        },
        tMSIofdifferentPLMN                     SEQUENCE {
            routingparameter                        RoutingParameter
        },
        iMSIresponsetopaging                    SEQUENCE {
            routingparameter                        RoutingParameter
        },
        iMSIcauseUEinitiatedEvent               SEQUENCE {
            routingparameter                        RoutingParameter
```

```
        },
        iMEI                                 SEQUENCE {
            routingparameter                         RoutingParameter
        },
        spare2                               SEQUENCE {
            routingparameter                         RoutingParameter
        },
        spare1                               SEQUENCE {
            routingparameter                         RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    enteredparameterdummy                            BOOLEAN
}
[...]
```

<div style="text-align:right">*CR-Form-v7*</div>

CHANGE REQUEST

⌘	**25.331** CR **2237**	⌘**rev**	**-**	⌘	Current version:	**4.12.0**	⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title: ⌘	Corrections to "Entered parameter"

Source: ⌘	RAN WG2

Work item code:⌘	TEI	***Date:*** ⌘	February 16 2004

Category: ⌘	**A**	***Release:*** ⌘	Rel-4
	Use one of the following categories:		*Use one 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		*Rel-4* *(Release 4)*
	be found in 3GPP TR 21.900.		*Rel-5* *(Release 5)*
			Rel-6 *(Release 6)*

Reason for change: ⌘	The setting of the value of the IE "Entered parameter" is incorrectly specified. In fact, the current LAI/RAI is compared to the most significant byte of the LAI/RAI stored on the SIM, but the LAC should have been used instead. Moreover, it was realized that this IE is not used for Iu-flex by the RNC.

Summary of change:⌘	The IE "Entered parameter" is deleted from the tabular description, and it is changed into "dummy" in the ASN.1 description. A comment is added stating: "dummy is not used in this version of the specification and it should be ignored by the receiver"
	Isolated Impact Change Analysis.
	This change clarifies the setting of the IE "Entered parameter" in the signalling connection establishment procedure. Since the clarification affects a procedure that does not work (the IE "Entered parameter" is not used by the Iu-flex), there are no isolated impacts.
	Impact on test specifications
	Test case 8.1.1.7 and other test cases in TS 34.123-1 rely on a particular setting of the IE "Entered parameter". If this CR is approved, these test cases should be modified so that the system simulator ignores the value of the received parameter.

Consequences if ⌘	The UE would be required to support a functionality that does not work.

not approved:	Moreover, test case 8.1.1.7 would be failed by otherwise standard compliant UE implementations.

Clauses affected:	⌘	10.3.1.6, 11.3		

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	TS 34.123-1 linked CRs agreed in T1: - T1-040242 (for Package 1 test cases), - T1-040306 (other test cases), - T1-040307 (defaults in 34.108 R99), - T1-040411 (defaults in 34.108 R4).
		X		Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

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[…]

10.3.1.6   Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *version*	MP			
>R99				
>>CHOICE *CN type*	MP			
>>>GSM-MAP				
>>>>CHOICE *Routing basis*	MP			
>>>>>local (P)TMSI				TMSI allocated in the current LA or PTMSI allocated in the current RA
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of same PLMN, different (RA)LA				TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of different PLMN				TMSI or a PTMSI allocated in another PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>IMSI(response to IMSI paging)				NAS identity is IMSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result .
>>>>>IMSI(cause UE initiated event)				NAS identity is IMSI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>IMEI				NAS parameter is IMEI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMEI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>Spare 1			Bit string (10)	This choice shall not be used in this version
>>>>>Spare 2			Bit string (10)	This choice shall not be used in this version
>>>>Entered parameter	MP		Boolean	Entered parameter shall be set to TRUE if the most significant byte of the current LAI/RAI is different compared to the most significant byte of the LAI/RAI stored on the SIM; Entered parameter shall be set to FALSE otherwise
>>>ANSI-41			Bit string (14)	All bits shall be set to 0
>Later			Bit string(15)	This bit string shall not be sent by mobiles that are compliant to this version of the protocol.

[…]

11.3   Information element definitions

[…]

```
Gsm-map-IDNNS ::=                               SEQUENCE {
    routingbasis                                    CHOICE {
        localPTMSI                                      SEQUENCE {
            routingparameter                                RoutingParameter
        },
        tMSIofsamePLMN                                  SEQUENCE {
            routingparameter                                RoutingParameter
        },
        tMSIofdifferentPLMN                         SEQUENCE {
            routingparameter                                RoutingParameter
        },
        iMSIresponsetopaging                            SEQUENCE {
            routingparameter                                RoutingParameter
        },
        iMSIcauseUEinitiatedEvent                       SEQUENCE {
            routingparameter                                RoutingParameter
```

```
        },
        iMEI                                    SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare2                                  SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare1                                  SEQUENCE {
            routingparameter                        RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    enteredparameterdummy                       BOOLEAN
}
[…]
```

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2238** | ⌘**rev** | **-** | ⌘ | Current version: | **5.7.1** | ⌘ |

*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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Corrections to "Entered parameter"	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI	***Date:*** ⌘　February 16 2004
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 <u>TR 21.900</u>.	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: ⌘	The setting of the value of the IE "Entered parameter" is incorrectly specified. In fact, the current LAI/RAI is compared to the most significant byte of the LAI/RAI stored on the SIM, but the LAC should have been used instead. Moreover, it was realized that this IE is not used for Iu-flex by the RNC.
Summary of change:⌘	The IE "Entered parameter" is deleted from the tabular description, and it is changed into "dummy" in the ASN.1 description. A comment is added stating: "dummy is not used in this version of the specification and it should be ignored by the receiver" **Isolated Impact Change Analysis.** This change clarifies the setting of the IE "Entered parameter" in the signalling connection establishment procedure. Since the clarification affects a procedure that does not work (the IE "Entered parameter" is not used by the Iu-flex), there are no isolated impacts. **Impact on test specifications** Test case 8.1.1.7 and other test cases in TS 34.123-1 rely on a particular setting of the IE "Entered parameter". If this CR is approved, these test cases should be modified so that the system simulator ignores the value of the received parameter.
Consequences if ⌘	The UE would be required to support a functionality that does not work.

not approved:	Moreover, test case 8.1.1.7 would be failed by otherwise standard compliant UE implementations.

Clauses affected:	⌘	10.3.1.6, 11.3		

		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	TS 34.123-1 linked CRs agreed in T1:
		X		Test specifications		- T1-040242 (for Package 1 test cases),
						- T1-040306 (other test cases),
						- T1-040307 (defaults in 34.108 R99),
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			X	O&M Specifications		

Other comments:	⌘	

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10.3.1.6   Intra Domain NAS Node Selector

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Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *version*	MP			
>R99				
>>CHOICE *CN type*	MP			
>>>GSM-MAP				
>>>>CHOICE *Routing basis*	MP			
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>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>IMSI(response to IMSI paging)				NAS identity is IMSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result .
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>>>>>IMEI				NAS parameter is IMEI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMEI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
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[…]

11.3   Information element definitions

[…]

```
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    routingbasis                               CHOICE {
        localPTMSI                                 SEQUENCE {
            routingparameter                           RoutingParameter
        },
        tMSIofsamePLMN                             SEQUENCE {
            routingparameter                           RoutingParameter
        },
        tMSIofdifferentPLMN                        SEQUENCE {
            routingparameter                           RoutingParameter
        },
        iMSIresponsetopaging                       SEQUENCE {
            routingparameter                           RoutingParameter
        },
        iMSIcauseUEinitiatedEvent                  SEQUENCE {
            routingparameter                           RoutingParameter
```

```
        },
        iMEI                                    SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare2                                  SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare1                                  SEQUENCE {
            routingparameter                        RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    enteredparameterdummy                       BOOLEAN
}
[...]
```

CHANGE REQUEST

| ⌘ | **25.331** CR **2239** | ⌘rev | **-** | ⌘ | Current version: | **6.0.1** | ⌘ |

*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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Corrections to "Entered parameter"	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI	***Date:*** ⌘ February 16 2004
Category: ⌘ **A**		***Release:*** ⌘ Rel-6

<table>
<tr><td>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 <u>TR 21.900</u>.</td><td>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)</td></tr>
</table>

Reason for change: ⌘	The setting of the value of the IE "Entered parameter" is incorrectly specified. In fact, the current LAI/RAI is compared to the most significant byte of the LAI/RAI stored on the SIM, but the LAC should have been used instead. Moreover, it was realized that this IE is not used for Iu-flex by the RNC.
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Consequences if ⌘	The UE would be required to support a functionality that does not work.

not approved:	Moreover, test case 8.1.1.7 would be failed by otherwise standard compliant UE implementations.

Clauses affected:	⌘	10.3.1.6, 11.3		

		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	TS 34.123-1 linked CRs agreed in T1:
		X		Test specifications		- T1-040242 (for Package 1 test cases),
						- T1-040306 (other test cases),
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			X	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.

[…]

10.3.1.6　　　Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *version*	MP			
>R99				
>>CHOICE *CN type*	MP			
>>>GSM-MAP				
>>>>CHOICE *Routing basis*	MP			
>>>>>local (P)TMSI				TMSI allocated in the current LA or PTMSI allocated in the current RA
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of same PLMN, different (RA)LA				TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>(P)TMSI of different PLMN				TMSI or a PTMSI allocated in another PLMN
>>>>>>Routing parameter	MP		Bit string (10)	The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.
>>>>>IMSI(response to IMSI paging)				NAS identity is IMSI

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result .
>>>>>IMSI(cause UE initiated event)				NAS identity is IMSI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>IMEI				NAS parameter is IMEI
>>>>>>Routing parameter	MP		Bit string (10)	The "Routing parameter" bit string consists of DecimalToBinary [(IMEI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result..
>>>>>Spare 1			Bit string (10)	This choice shall not be used in this version
>>>>>Spare 2			Bit string (10)	This choice shall not be used in this version
>>>>Entered parameter	MP		Boolean	Entered parameter shall be set to TRUE if the most significant byte of the current LAI/RAI is different compared to the most significant byte of the LAI/RAI stored on the SIM; Entered parameter shall be set to FALSE otherwise
>>>ANSI-41			Bit string (14)	All bits shall be set to 0
>Later			Bit string(15)	This bit string shall not be sent by mobiles that are compliant to this version of the protocol.

[…]

11.3   Information element definitions

[…]

```
Gsm-map-IDNNS ::=                           SEQUENCE {
    routingbasis                               CHOICE {
        localPTMSI                               SEQUENCE {
            routingparameter                        RoutingParameter
        },
        tMSIofsamePLMN                           SEQUENCE {
            routingparameter                        RoutingParameter
        },
        tMSIofdifferentPLMN                      SEQUENCE {
            routingparameter                        RoutingParameter
        },
        iMSIresponsetopaging                     SEQUENCE {
            routingparameter                        RoutingParameter
        },
        iMSIcauseUEinitiatedEvent                SEQUENCE {
            routingparameter                        RoutingParameter
```

```
        },
        iMEI                                    SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare2                                  SEQUENCE {
            routingparameter                        RoutingParameter
        },
        spare1                                  SEQUENCE {
            routingparameter                        RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    enteredparameterdummy                               BOOLEAN
}
[…]
```

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** | CR | **2233** | ⌘**rev** | | ⌘ | Current version: | **4.12.0** | ⌘ |

*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 **X** Radio Access Network **X** Core Network [ ]

Title:	⌘	UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE
Source:	⌘	RAN WG2
Work item code:⌘	TEI	*Date:* ⌘ 16/02/2004
Category:	⌘ **A**	*Release:* ⌘ Rel-4

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

Reason for change:⌘[H1	The setting of the ciphering activation time for the TM bearers is done by the UE or by the UTRAN depending of the procedure. UTRAN choses the activation time for TM bearers during the SECURITY MODE COMMAND procedure and sets it in the IE "Ciphering activation time for DPCH". In case of setup of the first TM bearers, 2G to 3G HO and SRNS relocation, the UE choses the activation time and sets it in the IE "COUNT-C activation time". • In the event of a SEURITY MODE COMMAND procedure shortly following the setup of the first TM bearers or a SRNS relocation, the UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times had elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). If that happens, the UE actions are not defined in the current specification. • In the case of the 2G to 3G HO, CR1976 from RAN#22 has added a note saying that the UTRAN should not send the Ciphering Mode Info IE again, until all ciphering activation times for RBs using RLC-TM of the concerned CN domain have expired. But it is sufficient that the UTRAN set the activation time for the reconfiguration after the activation time chosen by the UE in the IE "COUNT-C activation time".
Summary of change: ⌘	• It is clarified that when setting the IE "Ciphering activation time for DPCH", UTRAN should take make sure that the ciphering reconfiguration will occur after the expiry of any activation times for RBs

	using RLC-TM of the concerned CN domain.
	• In section 8.3.6.3, the second part of the Note on the inclusion of the IE Ciphering Mode Info is deleted : UTRAN is allowed to send the Ciphering Mode Info IE again, even if ciphering activation times for RBs using RLC-TM of the concerned CN domain have not expired but it has to set the IE "Ciphering activation time for DPCH" so that the ciphering reconfiguration will occur after the expiry.
Consequences if not approved: ⌘	UTRAN may chose an activation time such that the ciphering reconfiguration occurs before all the pending ciphering activation times have elapsed (i.e. the time indicated by the IE "Ciphering activation time for DPCH" would be lower than the one in the IE "COUNT-C activation time"). It will have an unpredictable result and loss of ciphering synchronisation between UE and UTRAN may occur.

Clauses affected:	⌘	8.1.12.2.1, 8.3.6.3		
		Y **N**		
Other specs affected:	⌘	☐ **X** Other core specifications	⌘	
		☐ **X** Test specifications		
		☐ **X** O&M Specifications		
Other comments:	⌘			

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8.1.12.2.1   Ciphering configuration change

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

When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering 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 ciphering 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 ciphering 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 ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

- 1> if a transparent mode radio bearer for this CN domain exists:

  - 2> include the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info", at which time the new ciphering configuration shall be applied and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0);

  NOTE: UTRAN should chose the value for the IE "Ciphering activation time for DPCH" such that the new ciphering configuration will occur after all the pending ciphering activation times have been reached for the transparent mode radio bearers of this CN domain.

- 1> consider a ciphering 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 ciphering activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;

- 1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphering activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" to the value used in the previous security mode control procedure, at which time the latest ciphering 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 ciphering 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.

8.3.6.3   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 $P_{Pilot-DPDCH}$ bearer in FDD;

   3> calculate the Default DPCH Offset Value using the following formula:

   3> in FDD:

   $$\text{Default DPCH Offset Value} = (\text{SRNTI 2 mod 600}) * 512$$

   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;

NOTE: Keys received while in another RAT are not regarded as "new" (i.e. do not trigger the actions in subclause 8.1.12.3.1) in a subsequent security control procedure in UTRAN, irrespective of whether the keys are already being used in the other RAT or not. If the UE has received new keys in the other RAT before handover, then the START values in the USIM (sent in the HANDOVER TO UTRAN COMPLETE message and in the INTER_RAT_HANDOVER_INFO sent to the BSS while in the other RAT) will not reflect the receipt of these new keys. At a subsequent security mode control procedure in UTRA, UE activates ciphering and/or integrity protection using the key set stored in the USIM/SIM.

1> set the value of "THRESHOLD" in the variable "START_THRESHOLD" equal to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain, or to the default value in [40] 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" with the ciphering key set stored in the USIM/SIM and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.

NOTE: If ciphering has been activated and ongoing in the radio access technology from which inter RAT handover is performed, UTRAN should not include the IE "Ciphering mode info" in the SECURITY MODE COMMAND message that starts Integrity protection.~~, and should not send a SECURITY MODE COMMAND including IE "Ciphering mode info" and IE "CN domain identity" set to the same value as UE variable LATEST_CONFIGURED_CN_DOMAIN until all pending ciphering activation times have been reached for the radio bearers using RLC-TM.~~

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> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD;

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 even if the "COUNT-C activation time" is equal to zero;

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.