# TSG-RAN Meeting #24 Seoul, Korea, 02-04 June 2004

Title: CRs to 25.331 (2) (Rel-5 and associated Rel-6)

Source: TSG-RAN WG2

Agenda item: 7.3.5

Spec	CR	Rev	Phase	Subject	Cat	<b>Version-Current</b>	Version-New	Workitem	Doc-2nd-Level
25.331	2293	1	Rel-5	Missing "v3g0" extension in the UE CAPABILITY INFORMATION	F	5.8.0	5.9.0	TEI5	R2-041183
25.331	2294	1	Rel-6	Missing "v3g0" extension in the UE CAPABILITY INFORMATION	Α	6.1.0	6.2.0	TEI5	R2-041184
25.331	2319	1	Rel-5	UE capability enquiry for GERAN lu mode	F	5.8.0	5.9.0	TEI5	R2-041227
25.331	2320	1	Rel-6	UE capability enquiry for GERAN lu mode	Α	6.1.0	6.2.0	TEI5	R2-041228
25.331	2339	-	Rel-5	Correction to Information Elements for UE Rx-Tx time difference	F	5.8.0	5.9.0	TEI5	R2-041170
25.331	2340	-	Rel-6	Correction to Information Elements for UE Rx-Tx time difference	Α	6.1.0	6.2.0	TEI5	R2-041171
25.331	2349	-		Correction to timing-maintained hard handover regarding the UL transmission timing	F	5.8.0	5.9.0	TEI5	R2-041196
25.331	2350	-		Correction to timing-maintained hard handover regarding the UL transmission timing	А	6.1.0	6.2.0	TEI5	R2-041197
25.331	2357	-		Compressed INTER RAT HANDOVER INFO message modifications/corrections	F	5.8.0	5.9.0	TEI5	R2-041237
25.331	2358	-		Compressed INTER RAT HANDOVER INFO message modifications/corrections	А	6.1.0	6.2.0	TEI5	R2-041238

# 3GPP TSG-RAN WG2 Meeting #42 Montreal, Canada, 10 – 14 May 2004

		CHANGE	REQ	JEST				CR-Form-v7
<b><sup>∺</sup> 25</b>	.331 CR	2293	жrev	<b>1</b> * '	Current vers	ion: <b>5.</b> 8	3.0	¥
Proposed change affec	ets: UICC	аррѕЖ	ME X	Radio Acc	cess Networ	·k <mark>X</mark> Co	re Ne	twork
Title:	ssing "v3g0"	extension in th	e UE CAP	ABILITY II	NFORMATION	NC		
Source: # RA	N WG2							
Work item code:	15				Date: ₩	13/05/2	004	
Deta	F (correction A (correspond B (addition of C (functional D (editorial r	nds to a correction of feature), I modification of the condification of the cons of the above	n in an earl feature)	ier release)	Release: 策 Use <u>one</u> of 2 R96 R97 R98 R99 Rel-4 Rel-5 Rel-6		nse 2) 1996) 1997) 1998) 1999) 4)	eases:
Reason for change: ₩	is missing message. and the In Capability This problethe UE missFN observand From Significant positioning	on container win the ASN.1 realit is optionally part of RAT Hando Information means is not seen by the unable to the contact of the contact is consolved in the contact is consolved is consolved in the contact in the contact is consolved in the contact in t	epresentate present in ver Info message, as as critical o signal its ence type of the profese rare case system sl	on of the both the Ressages, but should I for R99 are UE position 2 measure ocol, but the ses and expould be a	UE Capability RRC Connect out it is not a have been. Ind REL-4. The oning capable ment to the hose are rarxcept for this	ty Information Setup evailable in here are coillity "Supp e UTRAN e and not s specific	ases port for base particular	where or SFN-d on the cularly
Summary of change: ₩		-RadioAcces Information wit						
Consequences if # not approved:	observed	unable to signatime difference Information me	type 2 me	asuremen				

Clauses affected:	$\mathfrak{H}$	11.2	

The correction needs to be implemented by both the UE and the UTRAN in order not to cause interoperability problems between REL-5 compatible entities.

Isolated impact analysis:

Other specs affected:	ж	Y	N X X	Other core specifications Test specifications O&M Specifications	¥	
Other comments:	Ж					

## 11.2 PDU definitions

```
__ *******************
  -- UE CAPABILITY INFORMATION
  UECapabilityInformation ::= SEQUENCE {
          rrc-TransactionIdentifier RRC-TransactionIdentifier ue-RadioAccessCapability UE-RadioAccessCapability
      -- User equipment IEs
                                                                               OPTIONAL,
                                                                                OPTIONAL,
      -- Other IEs
          ue-RATSpecificCapability
                                          InterRAT-UE-RadioAccessCapabilityList
      OPTIONAL,
          	ext{IONAL}, \ 	ext{v370NonCriticalExtensions} 	ext{SEQUENCE } \{
              ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
              v380NonCriticalExtensions SEQUENCE {
                  ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
                  v3a0NonCriticalExtensions
                                                       SEQUENCE {
                      ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext-IEs, laterNonCriticalExtensions SEQUENCE {
                           -- Container for additional R99 extensions
                           ueCapabilityInformation-r3-add-ext
                                                                 BIT STRING
                                                                                   OPTIONAL,
                           -- Reserved for future non critical extension
                           v4b0NonCriticalExtensions SEQUENCE {
                               ueCapabilityInformation-v4b0ext UECapabilityInformation-v4b0ext, v5xyNonCriticalExtensions SEQUENCE {
                                   ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
                                  nonCriticalExtensions
                                                                        SEQUENCE { } OPTIONAL
                                     OPTIONAL
                                  OPTIONAL
                               OPTIONAL
                          OPTIONAL
                       OPTIONAL
              }
                  OPTIONAL
  }
  UECapabilityInformation-v370ext ::= SEQUENCE {
      -- User equipment IEs
         ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext
                                                                                           OPTIONAL
  }
  UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
      -- User equipment IEs
         ue-RadioAccessCapability-v380ext
                                                  UE-RadioAccessCapability-v380ext
          dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
  }
  UECapabilityInformation-v3a0ext-IEs ::= SEQUENCE {
      -- User equipment IEs
          ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
  }
  UECapabilityInformation-v4b0ext ::= SEQUENCE {
      -- User equipment IEs
          ue-RadioAccessCapability-v4b0ext UE-RadioAccessCapability-v4b0ext
  UECapabilityInformation-v5xyext ::= SEQUENCE {
     -- User equipment IEs

    ue-RadioAccessCapability-v3g0ext
    UE-RadioAccessCapability-v3g0ext

    ue-RadioAccessCapability-v5xyext
    UE-RadioAccessCapability-v5xyext

                                                                                           OPTIONAL,
                                                                                             OPTIONAL,
      -- Other IEs
         ue-RATSpecificCapability-v5xyext InterRAT-UE-RadioAccessCapability-v5xyext OPTIONAL
}
}
```

													CR-Form-v7
			(	CHAN	GE	REQ	UE	ST	-				
*	25	.331	CR	2294		<b>⊭rev</b>	1	¥	Curre	nt vers	sion:	6.1.0	¥
Proposed change				apps#								Core N	etwork
Title: 第	Mis	sing "	v3g0" (	extension i	in the	UE CA	PABI	LITY	INFOF	RMATI	ON		
Source: ೫	RA	N WG	2										
Work item code: ₩	TEI	5							D	ate: ೫	13/	05/2004	
Category: 第	Deta	F (cor A (cor B (add C (fur D (edi iled ex	rrection) rrespondition of actional itorial m planatic	ds to a correst feature), modification) ons of the altre 21.900.	rection n of fe	in an ea ature)		eleas	Use 2 e) R F F F F F		the for (GSN (Rele (Rele (Rele (Rele (Rele (Rele	I-6 Illowing re Il	) ) ) )
											,	,	
Reason for change	): 光	is m mes and Cape This the U SFN rare this	issing is sage. If the Interpolation is ability If problem JE might and no specific sage.	on containent on the ASN to is optional or RAT Had information of the most of the contact of the	I.1 repally promoted in messen a ble to differe arly signification in general control of the con	oresent ir esent ir er Info r sage, a s critica signal ii nce type gnificant g capabi	ation of both nessation of sites of the state of the stat	of the ages nould position the system of the	e UE C. RRC C., but it id have land RE itioning irement for those	apabili Connectis not a been. L-4. The capab t" to the e rare should	ty Infection Savaila here a bility " e UTF cases be ab	ormation Setup Co ble in the are cases Support I RAN, but s and exc ble to ope	mplete e UE s where for SFN- those are cept for
Summary of chang	ye: ₩			-RadioAc Information									
Consequences if not approved:	**	obse Capa Isola The	erved ti ability I ated in correc	unable to some different of the new method in th	ence ty n mes lysis: s to be	ype 2 m ssage is implen	easui used nente	reme	ent" to t	he UT	RAN sand th	when the	UE N in order
Clauses affected:	¥	11.2											

YN

Other specs affected:	*	X	Other core specifications Test specifications O&M Specifications	$\mathfrak{R}$	
Other comments:	X				

## 11.2 PDU definitions

```
__ *******************************
  -- UE CAPABILITY INFORMATION
  UECapabilityInformation ::= SEQUENCE {
          rrc-TransactionIdentifier RRC-TransactionIdentifier ue-RadioAccessCapability UE-RadioAccessCapability
      -- User equipment IEs
                                                                               OPTIONAL,
                                                                                 OPTIONAL,
      -- Other IEs
          ue-RATSpecificCapability
                                          InterRAT-UE-RadioAccessCapabilityList
      OPTIONAL,
          	ext{IONAL}, \ 	ext{v370NonCriticalExtensions} 	ext{SEQUENCE } \{
              ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
              v380NonCriticalExtensions SEQUENCE {
                  ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
                  v3a0NonCriticalExtensions
                                                       SEQUENCE {
                       ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext-IEs, laterNonCriticalExtensions SEQUENCE {
                           -- Container for additional R99 extensions
                           ueCapabilityInformation-r3-add-ext
                                                                 BIT STRING
                                                                                    OPTIONAL,
                           -- Reserved for future non critical extension
                           v4b0NonCriticalExtensions SEQUENCE {
                               ueCapabilityInformation-v4b0ext UECapabilityInformation-v4b0ext, v5xyNonCriticalExtensions SEQUENCE {
                                   ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
                                   nonCriticalExtensions
                                                                        SEQUENCE { } OPTIONAL
                                      OPTIONAL
                                   OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       OPTIONAL
              }
                  OPTIONAL
  }
  UECapabilityInformation-v370ext ::= SEQUENCE {
      -- User equipment IEs
         ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext
                                                                                            OPTIONAL
  }
  UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
      -- User equipment IEs
         ue-RadioAccessCapability-v380ext
                                                  UE-RadioAccessCapability-v380ext
          dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
  }
  UECapabilityInformation-v3a0ext-IEs ::= SEQUENCE {
      -- User equipment IEs
          ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
  }
  UECapabilityInformation-v4b0ext ::= SEQUENCE {
      -- User equipment IEs
          ue-RadioAccessCapability-v4b0ext UE-RadioAccessCapability-v4b0ext
  UECapabilityInformation-v5xyext ::= SEQUENCE {
     -- User equipment IEs

    ue-RadioAccessCapability-v3g0ext
    UE-RadioAccessCapability-v3g0ext

    ue-RadioAccessCapability-v5xyext
    UE-RadioAccessCapability-v5xyext

                                                                                           OPTIONAL,
                                                                                              OPTIONAL,
      -- Other IEs
         ue-RATSpecificCapability-v5xyext InterRAT-UE-RadioAccessCapability-v5xyext OPTIONAL
}
}
```

# 3GPP TSG-RAN2 Meeting #42 Montreal, Canada, 10-14 May 2004

		CHANG	E REQ	UEST			CR-Form-v7
*	25.331	CR 2319	⊭rev	<b>1</b> **	Current vers	ion: <b>5.8.0</b>	ж
For <u>HELP</u> on usir	ng this for	rm, see bottom of	this page or	look at the	e pop-up text	over the ૠ syr	mbols.
Proposed change aff	fects: \	JICC apps#	ME X	] Radio Ad	ccess Networ	k X Core Ne	etwork
Title:	UE capab	ility enquiry for G	ERAN lu mo	de			
Source: #	RAN WG	2					
Work item code:	TEI5				<i>Date:</i> ∺	04/05/2004	
D	Ise <u>one</u> of f F (con A (con B (add C (fun D (edii Detailed exp	the following categorection) responds to a correction of feature), ctional modification torial modification) blanations of the about 3GPP TR 21.900.	ction in an ear of feature)		Use <u>one</u> of 2 2) R96 R97 R98 R99 Rel-4	Rel-5 the following rele (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	eases:
Reason for change:		e is no code point irement".	for GERAN	lu mode i	n the IE "capa	ability update	
Summary of change:	: 第 <mark>Code</mark>	e point has been a	idded.				
	This	ated impact analy change impacts the AN lu mode.		ility enqui	ry procedure	for UEs that su	upport
Consequences if not approved:	₩ UTR	AN can not enqui	re GERAN lu	mode ca	pabilities fron	n the UE.	
Clauses affected:	第 10.3	.3.2, 11.2, 11.3					
Other specs affected:	¥ N X X X	Other core speci Test specification O&M Specification	ns	X			
Other comments:	*						

## How to create CRs using this form:

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

1) Fill out the above form. The symbols above marked \( \mathbb{K} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 10.3.3.2 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
UE radio access FDD capability	MP		Boolean	TRUE indicates	
update requirement				update required	
UE radio access 3.84 Mcps TDD	MP		Boolean	TRUE indicates	Name
capability update requirement				update required	changed
					in REL-4
UE radio access 1.28 Mcps TDD	MP		Boolean	TRUE indicates	REL-4
capability update requirement				update required	
System specific capability	OP	1 to		In this version, a	
update requirement list		<maxsyste< td=""><td></td><td>maximum size of</td><td></td></maxsyste<>		maximum size of	
		mCapabilit		4 of the list shall	
		y>		be applied and	
				any items after the	
				4 <sup>th</sup> item in the list	
				shall be ignored.	
>System specific capability	MP		Enumerated		
update requirement			(GSM <del>)</del>		
			<u>, GERAN lu)</u>		REL-5

#### Default value is:

"UE radio capability FDD update requirement" = false

"UE radio capability 3.84 Mcps TDD update requirement" = false

"UE radio capability 1.28 Mcps TDD update requirement" = false

# 11.2 PDU definitions

```
-- TABULAR: The message type and integrity check info are not
\mbox{--}\mbox{ visible} in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=
BEGIN
__**********************
-- IE parameter types from other modules
__********************
IMPORTS
-- Core Network IEs :
   CN-DomainIdentity,
   CN-InformationInfo,
   CN-InformationInfoFull,
   NAS-Message,
   PagingRecordTypeID,
-- UTRAN Mobility IEs :
   CellIdentity,
   CellIdentity-PerRL-List,
   URA-Identity,
-- User Equipment IEs :
   AccessStratumReleaseIndicator,
```

<sup>&</sup>quot;System specific capability update requirement" not present.

```
ActivationTime,
   C-RNTI,
   CapabilityUpdateRequirement,
   CapabilityUpdateRequirement-r4,
   CapabilityUpdateRequirement-r4-ext,
   CapabilityUpdateRequirement-r5,
   CellUpdateCause,
   CipheringAlgorithm,
   CipheringModeInfo,
   DSCH-RNTI,
   EstablishmentCause,
   FailureCauseWithProtErr,
   FailureCauseWithProtErrTrId,
   GroupReleaseInformation,
   H-RNTI,
   UESpecificBehaviourInformationlidle,
   UESpecificBehaviourInformationlinterRAT,
   InitialUE-Identity,
   IntegrityProtActivationInfo,
   IntegrityProtectionModeInfo,
   N-308,
   PagingCause,
   PagingRecordList,
   PagingRecord2List-r5,
   ProtocolErrorIndicator
   ProtocolErrorIndicatorWithMoreInfo,
   RadioFrequencyBandTDDList,
   Rb-timer-indicator,
   RedirectionInfo,
   RejectionCause,
   ReleaseCause,
   RF-CapabilityComp,
   RRC-StateIndicator
   RRC-TransactionIdentifier,
   SecurityCapability,
   START-Value,
   STARTList,
   SystemSpecificCapUpdateReq-v590ext,
   U-RNTI,
   U-RNTI-Short,
   UE-RadioAccessCapability,
   UE-RadioAccessCapability-v370ext,
   UE-RadioAccessCapability-v380ext,
   UE-RadioAccessCapability-v3a0ext,
   UE-RadioAccessCapability-v3g0ext,
   UE-RadioAccessCapability-v4b0ext,
   UE-RadioAccessCapability-v5xyext,
   UE-RadioAccessCapabilityComp,
   DL-PhysChCapabilityFDD-v380ext,
   UE-ConnTimersAndConstants,
   UE-ConnTimersAndConstants-v3a0ext,
   UE-ConnTimersAndConstants-r5,
   UE-SecurityInformation,
   URA-UpdateCause,
   UTRAN-DRX-CycleLengthCoefficient,
   WaitTime,
-- Radio Bearer IEs :
   DefaultConfigIdentity,
   DefaultConfigIdentity-r4,
   DefaultConfigIdentity-r5,
   DefaultConfigMode,
   DL-CounterSynchronisationInfo,
   DL-CounterSynchronisationInfo-r5,
   PredefinedConfigIdentity,
   PredefinedConfigStatusList
   PredefinedConfigStatusListComp,
   PredefinedConfigSetWithDifferentValueTag,
   RAB-Info,
   RAB-Info-Post,
   RAB-InformationList,
   RAB-InformationReconfigList,
   RAB-InformationSetupList,
   RAB-InformationSetupList-r4,
   RAB-InformationSetupList-r5,
   RB-ActivationTimeInfoList,
   RB-COUNT-C-InformationList,
   RB-COUNT-C-MSB-InformationList,
   RB-IdentityList,
```

```
RB-InformationAffectedList,
   RB-InformationAffectedList-r5,
   RB-InformationReconfigList,
   RB-InformationReconfigList-r4,
   RB-InformationReconfigList-r5,
   RB-InformationReleaseList,
   RB-PDCPContextRelocationList,
   SRB-InformationSetupList,
   SRB-InformationSetupList-r5,
   SRB-InformationSetupList2,
   UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
   CPCH-SetID,
   DL-AddReconfTransChInfo2List,
   DL-AddReconfTransChInfoList,
   DL-AddReconfTransChInfoList-r4,
   DL-AddReconfTransChInfoList-r5,
   DL-CommonTransChInfo,
   DL-CommonTransChInfo-r4,
   DL-DeletedTransChInfoList,
   DL-DeletedTransChInfoList-r5,
   DRAC-StaticInformationList,
   TFC-Subset,
   TFCS-Identity,
   UL-AddReconfTransChInfoList,
   UL-CommonTransChInfo,
   UL-CommonTransChInfo-r4
   UL-DeletedTransChInfoList,
-- Physical Channel IEs :
   Alpha,
   CCTrCH-PowerControlInfo,
   CCTrCH-PowerControlInfo-r4,
   CCTrCH-PowerControlInfo-r5,
   ConstantValue,
   ConstantValueTdd,
   CPCH-SetInfo,
   DL-CommonInformation,
   DL-CommonInformation-r4,
   DL-CommonInformation-r5,
   DL-CommonInformationPost,
   DL-HSPDSCH-Information,
   DL-InformationPerRL-List.
   DL-InformationPerRL-List-r4,
   DL-InformationPerRL-List-r5
   DL-InformationPerRL-List-r5bis,
   DL-InformationPerRL-ListPostFDD,
   DL-InformationPerRL-PostTDD,
   DL-InformationPerRL-PostTDD-LCR-r4,
   DL-PDSCH-Information,
   DL-TPC-PowerOffsetPerRL-List,
   DPC-Mode,
   DPCH-CompressedModeStatusInfo,
   FrequencyInfo,
   FrequencyInfoFDD,
   FrequencyInfoTDD,
   HS-SICH-Power-Control-Info-TDD384,
   MaxAllowedUL-TX-Power,
   OpenLoopPowerControl-IPDL-TDD-r4,
   PDSCH-CapacityAllocationInfo,
   PDSCH-CapacityAllocationInfo-r4,
   PDSCH-Identity,
   PrimaryCPICH-Info,
   PrimaryCCPCH-TX-Power,
   PUSCH-CapacityAllocationInfo,
   PUSCH-CapacityAllocationInfo-r4,
   PUSCH-Identity,
   PUSCH-SysInfoList-HCR-r5,
   PDSCH-SysInfoList-HCR-r5,
   RL-AdditionInformationList,
   RL-RemovalInformationList.
   SpecialBurstScheduling,
   SSDT-Information,
   TFC-ControlDuration,
   SSDT-UL,
   TimeslotList,
   TimeslotList-r4,
   TX-DiversityMode,
   UL-ChannelRequirement,
```

```
UL-ChannelRequirement-r4,
    UL-ChannelRequirement-r5,
    UL-ChannelRequirementWithCPCH-SetID,
    {\tt UL-Channel Requirement With CPCH-Set ID-r4}\,,
    UL-ChannelRequirementWithCPCH-SetID-r5,
    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-Info-r5,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR-r4,
    UL-SynchronisationParameters-r4,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    DeltaRSCP,
    Frequency-Band,
    EventResults,
    Inter-FreqEventCriteriaList-v5xyext,
    Intra-FreqEventCriteriaList-v5xyext,
    IntraFreqReportingCriteria-1b-r5,
    IntraFreqEvent-1d-r5,
    InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResults-v390ext,
    MeasuredResults-v5xyext,
    MeasuredResultsList,
    MeasuredResultsList-LCR-r4-ext,
    MeasuredResultsOnRACH,
    Measurement.Command.
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    SFN-Offset-Validity
    TimeslotListWithISCP
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-Measurement-v390ext
    UE-Positioning-OTDOA-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData-r4ext,
    UE-Positioning-OTDOA-AssistanceData-UEB,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GERANIu-MessageList,
    GERAN-SystemInformation,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-FailureCause,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v5xyext,
    InterRAT-UE-SecurityCapList,
    IntraDomainNasNodeSelector,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements
    maxSIBperMsg,
   maxURNTI-Group
FROM Constant-definitions;
__ ****************
-- RRC CONNECTION SETUP
__ ***************
```

```
RRCConnectionSetup ::= CHOICE {
                                   SEQUENCE {
       rrcConnectionSetup-r3
                                      RRCConnectionSetup-r3-IEs,
                                      SEQUENCE {
       laterNonCriticalExtensions
            -- Container for additional R99 extensions
           rrcConnectionSetup-r3-add-ext
                                             BIT STRING
                                                             OPTIONAL,
               v4b0NonCriticalExtensions
               v5xyNonCriticalExtensions
                                              SEQUENCE {
                   {\tt rrcConnectionSetup-v5xyext}
                                                  RRCConnectionSetup-v5xyext-IEs,
                   nonCriticalExtensions
                                                  SEQUENCE {}
                                                                OPTIONAL
                   OPTIONAL
               OPTIONAL.
           OPTIONAL
   },
                                  SEQUENCE {
   later-than-r3
       initialUE-Identity
                                   InitialUE-Identity,
                                       RRC-TransactionIdentifier,
       rrc-TransactionIdentifier
       criticalExtensions
                                      CHOICE {
                                          SEQUENCE {
           r4
                                          RRCConnectionSetup-r4-IEs,
               rrcConnectionSetup-r4
               v4d0NonCriticalExtensions
                                                  SEQUENCE {
                   -- Container for adding non critical extensions after freezing REL-5
                   rrcConnectionSetup-r4-add-ext BIT STRING
                                                                     OPTIONAL,
                                                  SEQUENCE {
                   v5xyNonCriticalExtensions
                                                  RRCConnectionSetup-v5xyext-IEs,
SEQUENCE {} OPTIONAL
                       rrcConnectionSetup-v5xyext
                       nonCriticalExtensions
                       OPTIONAL
               }
                   OPTIONAL
                                              CHOICE {
           criticalExtensions
                                              SEQUENCE {
               r5
                   rrcConnectionSetup-r5
                                                  RRCConnectionSetup-r5-IEs,
                   -- Container for adding non critical extensions after freezing REL-6
                   rrcConnectionSetup-r5-add-ext BIT STRING OPTIONAL,
                                                  SEQUENCE {}
                                                                 OPTIONAL
                   nonCriticalExtensions
               criticalExtensions
                                             SEQUENCE {}
           }
       }
   }
}
RRCConnectionSetup-r3-IEs ::= SEOUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
   -- User equipment IEs
       initialUE-Identity
                                       InitialUE-Identity,
                                       RRC-TransactionIdentifier,
       rrc-TransactionIdentifier
       activationTime
                                       ActivationTime
                                                                          OPTIONAL.
       new-U-RNTI
                                       U-RNTI,
                                      C-RNTI
       new-c-RNTI
       rrc-StateIndicator
                                      RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff
                                      UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
       capabilityUpdateRequirement
                                     CapabilityUpdateRequirement
    -- Radio bearer IEs
       srb-InformationSetupList
                                      SRB-InformationSetupList2,
    -- Transport channel IEs
       ul-CommonTransChInfo
                                       UL-CommonTransChInfo
        -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
        -- this message
       ul-AddReconfTransChInfoList
                                      UL-AddReconfTransChInfoList,
       dl-CommonTransChInfo
                                      DL-CommonTransChInfo
        -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
        -- of this message
       dl-AddReconfTransChInfoList
                                      DL-AddReconfTransChInfoList,
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                                                          OPTIONAL,
                                      MaxAllowedUL-TX-Power
       maxAllowedUL-TX-Power
                                                                          OPTIONAL.
       ul-ChannelRequirement
                                      UL-ChannelRequirement
                                                                         OPTIONAL.
       dl-CommonInformation
                                      DL-CommonInformation
                                                                          OPTIONAL,
       dl-InformationPerRL-List
                                      DL-InformationPerRL-List
}
RRCConnectionSetup-v4b0ext-IEs ::= SEQUENCE {
       capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext OPTIONAL,
    -- Physical channel IEs
```

I

```
-- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
       ssdt-UL-r4
                                           SSDT-UL
                                                                              OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
                                          CellIdentity-PerRL-List
                                                                             OPTIONAL
}
RRCConnectionSetup-v5xyext-IEs ::= SEQUENCE \{
    -- User equipment IEs
       systemSpecificCapUpdateReq SystemSpecificCapUpdateReq-v590ext
                                                                              OPTIONAL,
    -- Physical channel IEs
       dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
                                                                          OPTIONAL
}
RRCConnectionSetup-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
       activationTime
                                      ActivationTime
                                                                          OPTIONAL,
       new-U-RNTI
                                      U-RNTI.
                                      C-RNTI
       new-c-RNTI
                                                                          OPTIONAL,
       rrc-StateIndicator
                                      RRC-StateIndicator,
                                     UTRAN-DRX-CycleLengthCoefficient,
       utran-DRX-CycleLengthCoeff
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
                                      CapabilityUpdateRequirement-r4
       capabilityUpdateRequirement
                                                                          OPTIONAL.
    -- Radio bearer IEs
       srb-InformationSetupList
                                     SRB-InformationSetupList2,
    -- Transport channel IEs
       ul-CommonTransChInfo
                                     UL-CommonTransChInfo-r4
                                                                          OPTIONAL,
       ul-AddReconfTransChInfoList
                                      UL-AddReconfTransChInfoList
                                                                          OPTIONAL.
       dl-CommonTransChInfo
                                       DL-CommonTransChInfo-r4
                                                                          OPTIONAL,
       dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
                                                                          OPTIONAL,
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                                                          OPTIONAL.
       maxAllowedUL-TX-Power
                                     MaxAllowedUL-TX-Power
                                                                          OPTIONAL,
       ul-ChannelRequirement
                                      UL-ChannelRequirement-r4
                                                                          OPTIONAL,
       dl-CommonInformation
                                     DL-CommonInformation-r4
                                                                          OPTIONAL,
       dl-InformationPerRL-List
                                     DL-InformationPerRL-List-r4
                                                                          OPTIONAL
}
RRCConnectionSetup-r5-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
                                                                          OPTIONAL,
       activationTime
                                      ActivationTime
       new-U-RNTI
                                       U-RNTI,
       new-c-RNTI
                                      C-RNTI
                                                                          OPTIONAL,
                                      RRC-StateIndicator,
       rrc-StateIndicator
       utran-DRX-CycleLengthCoeff
                                      UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
       capabilityUpdateRequirement
                                      CapabilityUpdateRequirement-r54
                                                                          OPTIONAL,
   -- Specification mode information
                                       CHOICE {
       specificationMode
                                        SEQUENCE {
           complete
               -- Radio bearer IEs
               srb-InformationSetupList
                                              SRB-InformationSetupList2,
               -- Transport channel IEs
               ul-CommonTransChInfo
                                              UL-CommonTransChInfo-r4
                                                                                  OPTIONAL,
               ul-AddReconfTransChInfoList
                                             UL-AddReconfTransChInfoList
                                                                                  OPTIONAL,
               dl-CommonTransChInfo
                                              DL-CommonTransChInfo-r4
               dl-AddReconfTransChInfoList
                                             DL-AddReconfTransChInfoList-r4
                                                                                  OPTIONAL
           preconfiguration
                                          SEQUENCE {
               -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
               -- one for the FDD only elements and one for the TDD only elements, so that one
               -- \mbox{FDD/TDD} choice in this level is sufficient.
               preConfigMode
                                              CHOICE {
                                              PredefinedConfigIdentity,
                   predefinedConfigIdentity
                                                  SEQUENCE {
                   defaultConfig
                       defaultConfigMode
                                                      DefaultConfigMode,
                       defaultConfigIdentity
                                                      DefaultConfigIdentity-r5
                   }
               }
           }
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                                                          OPTIONAL,
       maxAllowedUL-TX-Power
                                      MaxAllowedUL-TX-Power
                                                                          OPTIONAL.
       ul-ChannelRequirement
                                      UL-ChannelRequirement-r4
                                                                          OPTIONAL,
```

```
DL-CommonInformation-r4
                   dl-CommonInformation
                                                                                                                                                                                        OPTIONAL,
                   dl-InformationPerRL-List
                                                                                                DL-InformationPerRL-List-r5bis
                                                                                                                                                                                         OPTIONAL
      -- UE CAPABILITY ENOUIRY
__ *************************
UECapabilityEnquiry ::= CHOICE {
                                                                                        SEOUENCE {
                                                                                       UECapabilityEnquiry-r3-IEs,
                   ueCapabilityEnquiry-r3
                    laterNonCriticalExtensions
                                                                                                         SEQUENCE {
                               -- Container for additional R99 extensions
                             ueCapabilityEnquiry-r3-add-ext
                                                                                                                  BIT STRING
                                                                                                                                                            OPTIONAL.
                                                                                                        SEQUENCE {
                             v4b0NonCriticalExtensions
                                       {\tt UECapabilityEnquiry-v4b0ext} \qquad {\tt UECapabilityEnquiry-v4b0ext-IEs},
                                                                                                                      SEQUENCE {
                                       v590NonCriticalExtensions

    0NonCriticalExtension
    UECapabilityEnquiry-v590ext

    ueCapabilityEnquiry-v590ext
    UECapabilityEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEnguiryEn
                                                                                                                               UECapabilityEnquiry-v590ext-IEs,
                                                                                                                                                                     OPTIONAL
                                                                                                 OPTIONAL
                                                 OPTIONAL
                   }
                             OPTIONAL
         later-than-r3
                                                                                       SEQUENCE {
                  rrc-TransactionIdentifier
                                                                                          RRC-TransactionIdentifier,
                   criticalExtensions
                                                                                                 SEQUENCE {}
UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
         -- User equipment IEs
                   rrc-TransactionIdentifier
                                                                                                RRC-TransactionIdentifier,
                   capabilityUpdateRequirement CapabilityUpdateRequirement
}
UECapabilityEnquiry-v4b0ext-IEs ::= SEQUENCE {
                   capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext
}
UECapabilityEnquiry-v590ext-IEs ::= SEQUENCE {
                                                                                               SystemSpecificCapUpdateReq-v590ext
                   systemSpecificCapUpdateReq
```

## 11.3 Information element definitions

```
USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
__ ********************************
CapabilityUpdateRequirement ::=
                                  SEQUENCE {
   ue-RadioCapabilityFDDUpdateRequirement BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement is for 3.84Mcps TDD update requirement
   ue-RadioCapabilityTDDUpdateRequirement BOOLEAN,
   systemSpecificCapUpdateReqList
                                      SystemSpecificCapUpdateReqList OPTIONAL
}
CapabilityUpdateRequirement-r4-ext ::= SEOUENCE {
   ue-RadioCapabilityUpdateRequirement-TDD128 BOOLEAN
CapabilityUpdateRequirement-r4 ::= SEQUENCE {
   ue-RadioCapabilityFDDUpdateRequirement-FDD BOOLEAN,
   \verb"ue-RadioCapabilityTDDUpdateRequirement-TDD384" BOOLEAN",
   \verb"ue-RadioCapabilityTDDUpdateRequirement-TDD128"
   systemSpecificCapUpdateReqList SystemSpecificCapUpdateReqList
                                                                        OPTIONAL
}
CapabilityUpdateRequirement-r5 ::= SEQUENCE {
   ue-RadioCapabilityFDDUpdateRequirement-FDD
                                              BOOLEAN,
   ue-RadioCapabilityTDDUpdateRequirement-TDD384 BOOLEAN,
```

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			C	CHAN	GE	REG	UE	ST	•				CR-Form-v/
*	25.	331	CR	2320		≋ rev	1	¥	Curren	nt versi	ion:	6.1.0	æ
For <u>HELP</u> on t	using t	his for	m, see	bottom c	of this	page o	r look	at th	e pop-u	p text	over	the 光 sy	mbols.
Proposed change	affect	s: l	JICC a	pps#	]	ME	( Ra	dio A	ccess N	letwor	k X	Core No	etwork
Title:	€ UE	capab	ility en	quiry for	GERA	N lu mo	ode						
Source: 3	€ RAI	N WG	2										
Work item code: ₽	€ TEI	5							Da	nte: ೫	04/	05/2004	
Category: ३	l l l Detai	F (corr A (corr B (add C (fund D (edit led exp	rection) respond dition of ctional i torial mo planatio	wing cate ds to a confeature), modification odification, ns of the a TR 21.900.	rection on of fe ) above o	in an ea			2 e) R9 R9 R9 R9 R6	one of 1 96 97 98 99 el-4 el-5	the fo. (GSN (Rele (Rele (Rele (Rele (Rele	-6 Ilowing rel 1 Phase 2) ase 1996) ase 1998) ase 1999) ase 4) ase 5) ase 6)	
Reason for chang	ıe: ∺		e is no iremen	code poi t".	nt for	GERAN	l lu m	ode i	in the IE	"сара	ability	update	
Summary of chan	ge: Ж	<b>Isola</b> This	ited im	pact ana	alysis:	:	bility	enqu	iry proc	edure	for U	Es that s	upport
Consequences if not approved:	ж	UTR	AN car	n not enq	uire G	ERAN I	u mo	de ca	apabilitie	es from	n the	UE.	
Clauses affected:	ж	10.3.	.3.2, 11	.2, 11.3									
Other specs affected:	¥	Y N X X	Test s	core spe specificati Specifica	ions	ions	*						
Other comments:	æ												

## How to create CRs using this form:

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

1) Fill out the above form. The symbols above marked \( \mathbb{K} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 10.3.3.2 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

Information Element/Group	Need	Multi	Type and	Semantics	Version
name			reference	description	
UE radio access FDD capability	MP		Boolean	TRUE indicates	
update requirement				update required	
UE radio access 3.84 Mcps TDD	MP		Boolean	TRUE indicates	Name
capability update requirement				update required	changed
					in REL-4
UE radio access 1.28 Mcps TDD	MP		Boolean	TRUE indicates	REL-4
capability update requirement				update required	
System specific capability	OP	1 to		In this version, a	
update requirement list		<maxsyste< td=""><td></td><td>maximum size of</td><td></td></maxsyste<>		maximum size of	
		mCapabilit		4 of the list shall	
		y>		be applied and	
				any items after the	
				4 <sup>th</sup> item in the list	
				shall be ignored.	
>System specific capability	MP		Enumerated		
update requirement			(GSM <del>)</del>		
			<u>, GERAN lu)</u>		REL-5

#### Default value is:

"UE radio capability FDD update requirement" = false

"UE radio capability 3.84 Mcps TDD update requirement" = false

"UE radio capability 1.28 Mcps TDD update requirement" = false

# 11.2 PDU definitions

```
-- TABULAR: The message type and integrity check info are not
\mbox{--}\mbox{ visible} in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=
BEGIN
__**********************
-- IE parameter types from other modules
__********************
IMPORTS
-- Core Network IEs :
   CN-DomainIdentity,
   CN-InformationInfo,
   CN-InformationInfoFull,
   NAS-Message,
   PagingRecordTypeID,
-- UTRAN Mobility IEs :
   CellIdentity,
   CellIdentity-PerRL-List,
   URA-Identity,
-- User Equipment IEs :
   AccessStratumReleaseIndicator,
```

<sup>&</sup>quot;System specific capability update requirement" not present.

```
ActivationTime,
   C-RNTI,
   CapabilityUpdateRequirement,
   CapabilityUpdateRequirement-r4,
   CapabilityUpdateRequirement-r4-ext,
   CapabilityUpdateRequirement-r5,
   CellUpdateCause,
   CipheringAlgorithm,
   CipheringModeInfo,
   DSCH-RNTI,
   EstablishmentCause,
   FailureCauseWithProtErr,
   FailureCauseWithProtErrTrId,
   GroupReleaseInformation,
   H-RNTI,
   UESpecificBehaviourInformationlidle,
   UESpecificBehaviourInformationlinterRAT,
   InitialUE-Identity,
   IntegrityProtActivationInfo,
   IntegrityProtectionModeInfo,
   N-308,
   PagingCause,
   PagingRecordList,
   PagingRecord2List-r5,
   ProtocolErrorIndicator
   ProtocolErrorIndicatorWithMoreInfo,
   RadioFrequencyBandTDDList,
   Rb-timer-indicator,
   RedirectionInfo,
   RedirectionInfo-r6,
   RejectionCause,
   ReleaseCause,
   RF-CapabilityComp,
   RRC-StateIndicator,
   RRC-TransactionIdentifier,
   SecurityCapability,
   START-Value,
   STARTList,
 SystemSpecificCapUpdateReq-v590ext,
   U-RNTI,
   U-RNTI-Short,
   UE-RadioAccessCapability,
   UE-RadioAccessCapability-v370ext,
   UE-RadioAccessCapability-v380ext,
   UE-RadioAccessCapability-v3a0ext,
   UE-RadioAccessCapability-v3g0ext,
   UE-RadioAccessCapability-v4b0ext,
   UE-RadioAccessCapability-v5xyext,
   UE-RadioAccessCapabilityComp,
   DL-PhysChCapabilityFDD-v380ext,
   UE-ConnTimersAndConstants,
   UE-ConnTimersAndConstants-v3a0ext,
   UE-ConnTimersAndConstants-r5,
   UE-SecurityInformation,
   URA-UpdateCause,
   UTRAN-DRX-CycleLengthCoefficient,
   WaitTime,
-- Radio Bearer IEs :
   DefaultConfigIdentity,
   DefaultConfigIdentity-r4,
   DefaultConfigIdentity-r5,
   DefaultConfigMode,
   DL-CounterSynchronisationInfo,
   DL-CounterSynchronisationInfo-r5,
   {\tt PredefinedConfigIdentity},
   PredefinedConfigStatusList
   PredefinedConfigStatusListComp,
   PredefinedConfigSetWithDifferentValueTag,
   RAB-Info,
   RAB-Info-Post,
   RAB-InformationList,
   RAB-InformationReconfigList,
   RAB-InformationSetupList,
   RAB-InformationSetupList-r4,
   RAB-InformationSetupList-r5,
   RB-ActivationTimeInfoList,
   RB-COUNT-C-InformationList,
   RB-COUNT-C-MSB-InformationList,
```

```
RB-IdentityList,
   RB-InformationAffectedList,
   RB-InformationAffectedList-r5,
   RB-InformationReconfigList,
   RB-InformationReconfigList-r4,
   RB-InformationReconfigList-r5,
   RB-InformationReleaseList
   RB-PDCPContextRelocationList,
   SRB-InformationSetupList,
   SRB-InformationSetupList-r5,
   SRB-InformationSetupList2,
   UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
   CPCH-SetID,
   DL-AddReconfTransChInfo2List,
   DL-AddReconfTransChInfoList,
   DL-AddReconfTransChInfoList-r4,
   DL-AddReconfTransChInfoList-r5,
   DL-CommonTransChInfo,
   DL-CommonTransChInfo-r4,
   DL-DeletedTransChInfoList,
   DL-DeletedTransChInfoList-r5,
   DRAC-StaticInformationList,
   TFC-Subset,
   TFCS-Identity,
   UL-AddReconfTransChInfoList,
   UL-CommonTransChInfo,
   UL-CommonTransChInfo-r4
   UL-DeletedTransChInfoList,
-- Physical Channel IEs :
   Alpha,
   CCTrCH-PowerControlInfo,
   CCTrCH-PowerControlInfo-r4,
   CCTrCH-PowerControlInfo-r5,
   ConstantValue,
   ConstantValueTdd,
   CPCH-SetInfo,
   DL-CommonInformation,
   DL-CommonInformation-r4,
   DL-CommonInformation-r5,
   DL-CommonInformationPost,
   DL-HSPDSCH-Information,
   DL-InformationPerRL-List,
   DL-InformationPerRL-List-r4,
   DL-InformationPerRL-List-r5,
   DL-InformationPerRL-List-r5bis,
   DL-InformationPerRL-ListPostFDD,
   DL-InformationPerRL-PostTDD
   DL-InformationPerRL-PostTDD-LCR-r4,
   DL-PDSCH-Information,
   DL-TPC-PowerOffsetPerRL-List,
   DPC-Mode,
   DPCH-CompressedModeStatusInfo,
   FrequencyInfo,
   FrequencyInfoFDD,
   {\tt FrequencyInfoTDD},
   HS-SICH-Power-Control-Info-TDD384,
   MaxAllowedUL-TX-Power,
   OpenLoopPowerControl-IPDL-TDD-r4,
   PDSCH-CapacityAllocationInfo,
   PDSCH-CapacityAllocationInfo-r4,
   PDSCH-Identity,
   PrimaryCPICH-Info,
   PrimaryCCPCH-TX-Power,
   PUSCH-CapacityAllocationInfo,
   PUSCH-CapacityAllocationInfo-r4,
   PUSCH-Identity,
   PUSCH-SysInfoList-HCR-r5,
   PDSCH-SysInfoList-HCR-r5,
   RL-AdditionInformationList.
   RL-RemovalInformationList,
   SpecialBurstScheduling,
   SSDT-Information,
   TFC-ControlDuration,
   SSDT-UL,
   TimeslotList,
   TimeslotList-r4,
   TX-DiversityMode,
```

```
UL-ChannelRequirement,
    UL-ChannelRequirement-r4,
    UL-ChannelRequirement-r5,
    {\tt UL-Channel RequirementWith CPCH-SetID}\,,
    UL-ChannelRequirementWithCPCH-SetID-r4,
    UL-ChannelRequirementWithCPCH-SetID-r5,
    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-Info-r5,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR-r4,
    UL-SynchronisationParameters-r4,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
   UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    DeltaRSCP,
    Frequency-Band,
    EventResults,
    Inter-FreqEventCriteriaList-v5xyext,
    Intra-FreqEventCriteriaList-v5xyext,
    IntraFreqReportingCriteria-1b-r5,
    IntraFreqEvent-1d-r5,
    InterFreqEventResults-LCR-r4-ext,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResults-v390ext,
    MeasuredResults-v5xyext,
    MeasuredResultsList,
    MeasuredResultsList-LCR-r4-ext,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    SFN-Offset-Validity
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-Measurement-v390ext,
    UE-Positioning-OTDOA-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData-r4ext,
    UE-Positioning-OTDOA-AssistanceData-UEB,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-TargetCellInfoList,
    GERANIu-MessageList,
    GERAN-SystemInformation,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-FailureCause,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v5xyext,
    InterRAT-UE-SecurityCapList,
    IntraDomainNasNodeSelector,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements
    maxSIBperMsq,
   maxURNTI-Group
FROM Constant-definitions;
__ ****************
-- RRC CONNECTION SETUP
```

```
__ ****************************
RRCConnectionSetup ::= CHOICE {
                                   SEQUENCE {
       -- Container for additional R99 extensions
           rrcConnectionSetup-r3-add-ext BIT STRING
                                                            OPTIONAL,
                                          SEQUENCE {
           v4b0NonCriticalExtensions
               rrcConnectionSetup-v4b0ext RRCConnectionSetup-v4b0ext-IEs, v5xyNonCriticalExtensions SEQUENCE {
                                              SEQUENCE {
                   rrcConnectionSetup-v5xyext RRCConnectionSetup-v5xyext-IEs,
                   nonCriticalExtensions
                                                  SEQUENCE {}
                                                                 OPTIONAL
                  OPTIONAL
               OPTIONAL
       }
           OPTIONAL
                                  SEQUENCE {
    later-than-r3
       rrc-TransactionIdentifier RRC-TransactionIdentifier criticalExtensions
                                      RRC-TransactionIdentifier,
       criticalExtensions
                                      CHOICE {
               RRCConnectionSetup-r4-IEs,
               v4d0NonCriticalExtensions
                                                 SEOUENCE {
                   -- Container for adding non critical extensions after freezing REL-5
                   rrcConnectionSetup-r4-add-ext BIT STRING OPTIONAL, v5xyNonCriticalExtensions SEQUENCE {
                       rrcConnectionSetup-v5xyext RRCConnectionSetup-v5xyext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                       OPTIONAL
               }
                   OPTIONAL
           criticalExtensions
                                              CHOICE {
                                              SEQUENCE {
                   rrcConnectionSetup-r5
                                              RRCConnectionSetup-r5-IEs,
                   -- Container for adding non critical extensions after freezing REL-6
                   rrcConnectionSetup-r5-add-ext
                                                     BIT STRING OPTIONAL,
                   nonCriticalExtensions
                                                  SEQUENCE {} OPTIONAL
               },
               criticalExtensions
                                  SEQUENCE {}
           }
       }
   }
}
RRCConnectionSetup-r3-IEs ::= SEQUENCE {
   -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
       initialUE-Identity
                                      InitialUE-Identity,
       rrc-TransactionIdentifier
                                      RRC-TransactionIdentifier,
                                      ActivationTime
       activationTime
                                                                          OPTIONAL,
       new-U-RNTI
                                      U-RNTI,
       new-c-RNTI
                                      C-RNTI
                                                                          OPTIONAL,
                                    RRC-StateIndicator,
UTRAN-DRX-CycleLengthCoefficient,
       rrc-StateIndicator
       utran-DRX-CycleLengthCoeff
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
       capabilityUpdateRequirement
                                     CapabilityUpdateRequirement
                                                                          OPTIONAL,
    -- Radio bearer IEs
       srb-InformationSetupList
                                    SRB-InformationSetupList2,
    -- Transport channel IEs
                                      UL-CommonTransChInfo
                                                                          OPTIONAL.
       ul-CommonTransChInfo
        -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
        -- this message
       ul-AddReconfTransChInfoList
                                      UL-AddReconfTransChInfoList,
       dl-CommonTransChInfo
                                      DL-CommonTransChInfo
        -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
        -- of this message
       dl-AddReconfTransChInfoList
                                     DL-AddReconfTransChInfoList,
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                                                          OPTIONAL,
       maxAllowedUL-TX-Power
                                     MaxAllowedUL-TX-Power
                                                                         OPTIONAL,
       ul-ChannelRequirement
                                      UL-ChannelRequirement
                                                                         OPTIONAL,
                                      DL-CommonInformation
       dl-CommonInformation
                                                                         OPTIONAL,
       dl-InformationPerRL-List
                                     DL-InformationPerRL-List
                                                                         OPTIONAL
RRCConnectionSetup-v4b0ext-IEs ::= SEQUENCE {
```

```
{\tt capabilityUpdateRequirement-r4-ext} \quad {\tt CapabilityUpdateRequirement-r4-ext} \quad {\tt OPTIONAL},
    -- Physical channel IEs
       -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
                                           SSDT-UL
                                                                               OPTIONAL,
        ssdt-UL-r4
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
                                                                              OPTIONAL
        cell-id-PerRL-List
                                           CellIdentity-PerRL-List
}
RRCConnectionSetup-v5xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
       systemSpecificCapUpdateReq
                                       SystemSpecificCapUpdateReq-v590ext
                                                                              OPTIONAL,
    -- Physical channel IEs
       dl-TPC-PowerOffsetPerRL-List
                                     DL-TPC-PowerOffsetPerRL-List
                                                                           OPTIONAL
}
RRCConnectionSetup-r4-IEs ::= SEQUENCE {
     - TABULAR: Integrity protection shall not be performed on this message.
                                                                           OPTIONAL,
       activationTime
                                       ActivationTime
       new-U-RNTI
                                       U-RNTI,
       new-c-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
                                       RRC-StateIndicator,
        rrc-StateIndicator
                                      UTRAN-DRX-CycleLengthCoefficient,
       utran-DRX-CycleLengthCoeff
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement CapabilityUpdateRequirement-r4
    -- Radio bearer IEs
       srb-InformationSetupList
                                     SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                       UL-CommonTransChInfo-r4
                                                                           OPTIONAL.
        ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
        dl-CommonTransChInfo
                                       DL-CommonTransChInfo-r4
                                                                           OPTIONAL,
       dl-AddReconfTransChInfoList
                                       DL-AddReconfTransChInfoList-r4
                                                                           OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                       FrequencyInfo
                                                                           OPTIONAL,
       maxAllowedUL-TX-Power
                                     MaxAllowedUL-TX-Power
                                                                           OPTIONAL,
        ul-ChannelRequirement
                                       UL-ChannelRequirement-r4
                                                                           OPTIONAL,
        dl-CommonInformation
                                       DL-CommonInformation-r4
                                                                           OPTIONAL,
        dl-InformationPerRL-List
                                                                          OPTIONAL
                                     DL-InformationPerRL-List-r4
}
RRCConnectionSetup-r5-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
       activationTime
                                      ActivationTime
                                                                           OPTIONAL,
       new-U-RNTI
                                       U-RNTI,
       new-c-RNTT
                                       C-RNTT
                                                                           OPTIONAL.
       rrc-StateIndicator
                                       RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff
                                       UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement
                                       CapabilityUpdateRequirement-r<u>5</u>4
                                                                          OPTIONAL,
    -- Specification mode information
       specificationMode
                                       CHOICE {
           complete
                                           SEQUENCE {
                -- Radio bearer IEs
                srb-InformationSetupList
                                               SRB-InformationSetupList2,
                -- Transport channel IEs
                ul-CommonTransChInfo
                                               UL-CommonTransChInfo-r4
                                                                                   OPTIONAL,
                ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                   OPTIONAL,
                                                                                   OPTIONAL,
                dl-CommonTransChInfo
                                               DL-CommonTransChInfo-r4
               dl-AddReconfTransChInfoList
                                               DL-AddReconfTransChInfoList-r4
                                                                                   OPTIONAL
           },
                                           SEQUENCE {
           preconfiguration
                -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                -- one for the FDD only elements and one for the TDD only elements, so that one
                -- FDD/TDD choice in this level is sufficient.
                preConfiqMode
                                              CHOICE {
                                                PredefinedConfigIdentity,
                   {\tt predefinedConfigIdentity}
                    defaultConfig
                                                   SEQUENCE {
                       defaultConfigMode
                                                      DefaultConfigMode,
                       defaultConfigIdentity
                                                       DefaultConfigIdentity-r5
                    }
                }
           }
    -- Physical channel IEs
       frequencyInfo
                                       FrequencyInfo
                                                                           OPTIONAL,
```

```
MaxAllowedUL-TX-Power
       maxAllowedUL-TX-Power
                                                                       OPTIONAL,
       ul-ChannelRequirement
                                     UL-ChannelRequirement-r4
                                                                       OPTIONAL,
       dl-CommonInformation
                                    DL-CommonInformation-r4
                                                                       OPTIONAL,
                                     DL-InformationPerRL-List-r5bis
       dl-InformationPerRL-List
                                                                       OPTIONAL
__ *****************
-- UE CAPABILITY ENQUIRY
__ ******************************
UECapabilityEnquiry ::= CHOICE {
                                  SEQUENCE {
       ueCapabilityEnquiry-r3
                                     UECapabilityEnquiry-r3-IEs,
       laterNonCriticalExtensions
                                        SEQUENCE {
           -- Container for additional R99 extensions
           ueCapabilityEnquiry-r3-add-ext
                                             BIT STRING OPTIONAL,
           v4b0NonCriticalExtensions
                                         SEQUENCE {
               ueCapabilityEnquiry-v4b0ext
                                          UECapabilityEnquiry-v4b0ext-IEs,
                                                SEQUENCE {
               v590NonCriticalExtensions
                   ueCapabilityEnquiry-v590ext
                                                 UECapabilityEnquiry-v590ext-IEs,
                                                 SEQUENCE {}
                   nonCriticalExtensions
                                                                OPTIONAL
                                     OPTIONAL
                   OPTIONAL
       }
           OPTIONAL
    later-than-r3
                                  SEQUENCE {
                                     RRC-TransactionIdentifier,
       rrc-TransactionIdentifier
       criticalExtensions
                                     SEQUENCE {}
}
UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
       capabilityUpdateRequirement CapabilityUpdateRequirement
}
UECapabilityEnquiry-v4b0ext-IES ::= SEQUENCE {
       capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext
}
UECapabilityEnquiry-v590ext-IEs ::= SEQUENCE {
       systemSpecificCapUpdateReq
                                   SystemSpecificCapUpdateReq-v590ext
```

## 11.3 Information element definitions

```
USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
__ *****************************
CapabilityUpdateRequirement ::=
                                 SEQUENCE {
   ue-RadioCapabilityFDDUpdateRequirement BOOLEAN,
   -- ue-RadioCapabilityTDDUpdateRequirement is for 3.84Mcps TDD update requirement
   ue-RadioCapabilityTDDUpdateRequirement BOOLEAN,
   systemSpecificCapUpdateReqList
                                     SystemSpecificCapUpdateReqList
}
CapabilityUpdateRequirement-r4-ext ::= SEQUENCE {
   ue-RadioCapabilityUpdateRequirement-TDD128 BOOLEAN
CapabilityUpdateRequirement-r4 ::= SEQUENCE {
   ue-RadioCapabilityFDDUpdateRequirement-FDD BOOLEAN,
   ue-RadioCapabilityTDDUpdateRequirement-TDD384 BOOLEAN,
   ue-RadioCapabilityTDDUpdateRequirement-TDD128
                                                 BOOLEAN.
                                                                       OPTIONAL
   systemSpecificCapUpdateReqList
                                    SystemSpecificCapUpdateReqList
}
```

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Other comments:

#### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{x} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 10.3.7.83 UE Rx-Tx time difference type 1

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link, as defined in [7]. This measurement is for FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 1	MP		Integer(768 1280)	In chips. 511 spare values are needed.

# 10.3.7.84 UE Rx-Tx time difference type 2

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link, as defined in [7].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 2	MP		Integer (08191)	According to [19].

# 3GPP TSG-RAN WG2 Meeting #42 Montreal, Canada, May 10<sup>th</sup> – 14<sup>th</sup>, 2004

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## 10.3.7.83 UE Rx-Tx time difference type 1

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link, as defined in [7]. This measurement is for FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 1	MP		Integer(768 1280)	In chips. 511 spare values are needed.

# 10.3.7.84 UE Rx-Tx time difference type 2

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH frame from the measured radio link, as defined in [7].

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE Rx-Tx time difference type 2	MP		Integer (08191)	According to [19].

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Reason for change: # In the case of timing-maintained hard handover, the section 8.3.5.2.1 suggests that UL transmission timing is maintained after the new RLs are established.

8.3.5.2 Timing-maintained hard handover

**A** (corresponds to a correction in an earlier release)

8.3.5.2.1 *General* 

F (correction)

**B** (addition of feature),

**D** (editorial modification)

be found in 3GPP TR 21.900.

**C** (functional modification of feature)

Detailed explanations of the above categories can

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the UL transmission timing and the CFN in the UE.

2

R96

R97

R98

R99

Rel-4

Rel-5 Rel-6 (GSM Phase 2)

(Release 1996)

(Release 1997)

(Release 1998)

(Release 1999)

(Release 4) (Release 5)

(Release 6)

In case of HHO (with or without change of frequency) the UE will perform the L1 synchronization procedure A as described in 25.214 section 4.3.2.3. The UE will establish first DL DPCCH synchronization, UL transmission being stopped until the DL is synchronized. When the higher layers considered that DL synchronization is fulfilled, the UE will start the UL DPCCH transmission. The above described UE behaviour applies regardless of the type of HHO i.e. timing maintained or timing re-initialised.

In case of UL initial transmission timing, the 25.133 section 7.1.2 sets the requirement of T0=1024 chips between the UL/DL frame timing. In 25.133 the case of timing-maintained HHO is not mentioned explicitly in this section.

#### 7.1.2 Requirements

The UE initial transmission timing error shall be less than or equal to \$\$1.5 Chip. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T0 chips. T0 is defined in [2].

If the UE maintains the old UL transmission timing, this requirement will probably

not be fulfilled compared to the new DL transmission timing. This is due to the rounding to the closest 256 chip boundary done in Node B of the DL DPCH transmission timing (as specified in 25.402 sections 8 and 9). Indeed, the UE measures the Timing difference between its DPCH and SFN in the target cell when doing handover and reports it to SRNC. SRNC sends this Time difference value in two parameters Frame Offset and Chip Offset over lub to Node B. Node B rounds this value to the closest 256 chip boundary in order to get DL orthogonality (regardless of used spreading factor). The rounded value is used in Node B for the DL DPCH.

Therefore two UE behaviours may happen:

- the UE keeps the UL transmission timing as suggested in 25.331 and the UL Tx timing requirement in 25.133 is not fulfilled, or
- B. the UE during the synchronization procedure A re-aligns the UL timing to the new DL timing according to the 25.133 and the UE does not comply with the RRC.

Summary of change: # It is proposed to align the RRC with requirements on 25.214 and 25.133 specifications regarding the UL transmission timing compared to the DL transmission timing after the Hard handover. The UL transmission timing mention is removed from section 8.3.5.2.1 and added a note with a reference to 25.211.

> For consistency, the UL transmission timing mention is removed also from section 8.3.5.1.1 and added a note with a reference to 25.211.

Implementation of this CR by a R99/Rel-4 UE will not cause compatibility

issues.

### Consequences if not approved:

# If the CR is not agreed the UE behaviour is not well specified leading to two UE behaviours depending on which specification was considered as correct. The impact is then on the NodeB which will not position correctly its UL reception window after the hard handover leading to HHO failure.

Clauses affected:	第 <u>8.3.5.1.1,</u> <u>8.3.5.2.1</u>
Other specs Affected:	Y N  X Other core specifications
Other comments:	$\aleph$

#### How to create CRs using this form:

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

## 8.3.5.1 Timing re-initialised hard handover

## 8.3.5.1.1 General

The purpose of the timing re-initialised hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) along with a change in the UL transmission timing and the CFN in the UE according to the SFN of the target cell.(see subclause 8.5.15).

NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure is initiated when UTRAN does not know the target SFN timing before hard handover.

## 8.3.5.2 Timing-maintained hard handover

#### 8.3.5.2.1 General

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the UL transmission timing and the CFN in the UE.

NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure can be initiated only if UTRAN knows the target SFN timing before hard handover. The target SFN timing can be known by UTRAN in the following 2 cases:

- UE reads SFN when measuring "Cell synchronisation information" and sends it to the UTRAN in MEASUREMENT REPORT message.
- UTRAN internally knows the time difference between the cells.

CHANGE REQUEST							CR-Form-vi		
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For <u>HELP</u> 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: Correction to timing-maintained hard handover regarding the UL transmission timing Source: RAN WG2 Α Category: Release: # Rel-6 Use one of the following releases: Use one of the following categories: 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) (Release 1998) R98 **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: 

In the case of timing-maintained hard handover, the section 8.3.5.2.1 suggests that UL transmission timing is maintained after the new RLs are established.

8.3.5.2 Timing-maintained hard handover

8.3.5.2.1 *General* 

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the UL transmission timing and the CFN in the UE.

In case of HHO (with or without change of frequency) the UE will perform the L1 synchronization procedure A as described in 25.214 section 4.3.2.3. The UE will establish first DL DPCCH synchronization, UL transmission being stopped until the DL is synchronized. When the higher layers considered that DL synchronization is fulfilled, the UE will start the UL DPCCH transmission. The above described UE behaviour applies regardless of the type of HHO i.e. timing maintained or timing re-initialised.

In case of UL initial transmission timing, the 25.133 section 7.1.2 sets the requirement of T0=1024 chips between the UL/DL frame timing. In 25.133 the case of timing-maintained HHO is not mentioned explicitly in this section.

#### 7.1.2 Requirements

The UE initial transmission timing error shall be less than or equal to  $$\phi 1.5$$  Chip. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T0 chips. T0 is defined in [2].

If the UE maintains the old UL transmission timing, this requirement will probably

not be fulfilled compared to the new DL transmission timing. This is due to the rounding to the closest 256 chip boundary done in Node B of the DL DPCH transmission timing (as specified in 25.402 sections 8 and 9). Indeed, the UE measures the Timing difference between its DPCH and SFN in the target cell when doing handover and reports it to SRNC. SRNC sends this Time difference value in two parameters Frame Offset and Chip Offset over lub to Node B. Node B rounds this value to the closest 256 chip boundary in order to get DL orthogonality (regardless of used spreading factor). The rounded value is used in Node B for the DL DPCH.

Therefore two UE behaviours may happen:

- the UE keeps the UL transmission timing as suggested in 25.331 and the UL Tx timing requirement in 25.133 is not fulfilled, or
- B. the UE during the synchronization procedure A re-aligns the UL timing to the new DL timing according to the 25.133 and the UE does not comply with the RRC.

Summary of change: # It is proposed to align the RRC with requirements on 25.214 and 25.133 specifications regarding the UL transmission timing compared to the DL transmission timing after the Hard handover. The UL transmission timing mention is removed from section 8.3.5.2.1 and added a note with a reference to 25.211.

> For consistency, the UL transmission timing mention is removed also from section 8.3.5.1.1 and added a note with a reference to 25.211.

Implementation of this CR by a R99/Rel-4/Rel-5 UE will not cause compatibility issues.

## Consequences if not approved:

# If the CR is not agreed the UE behaviour is not well specified leading to two UE behaviours depending on which specification was considered as correct. The impact is then on the NodeB which will not position correctly its UL reception window after the hard handover leading to HHO failure.

Clauses affected:	第 8.3.5.1.1, 8.3.5.2.1
Other specs Affected:	Y N  X Other core specifications   Test specifications   O&M Specifications
Other comments:	<b>x</b>

#### How to create CRs using this form:

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## 8.3.5.1 Timing re-initialised hard handover

## 8.3.5.1.1 General

The purpose of the timing re-initialised hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) along with a change in the UL transmission timing and the CFN in the UE according to the SFN of the target cell.(see subclause 8.5.15).

NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure is initiated when UTRAN does not know the target SFN timing before hard handover.

## 8.3.5.2 Timing-maintained hard handover

#### 8.3.5.2.1 General

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the UL transmission timing and the CFN in the UE.

NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure can be initiated only if UTRAN knows the target SFN timing before hard handover. The target SFN timing can be known by UTRAN in the following 2 cases:

- UE reads SFN when measuring "Cell synchronisation information" and sends it to the UTRAN in MEASUREMENT REPORT message.
- UTRAN internally knows the time difference between the cells.

# 3GPP TSG-RAN-WG2 Meeting #42 Montreal, Canada, 10<sup>th</sup>- 14<sup>th</sup> May 2004

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Title:	$\mathbb{H}$	Comp	ressed INTER RAT HANDOV	ER INFO mess	age modifica	tions/corrections
Source:	¥	RAN	WG2			
Work item code	<i>:</i>	TEI5			<i>Date:</i> ∺	May 2004
Category:	æ	F			Release: ∺	Rel-5
Category.	00	Use <u>or</u>	ne of the following categories: (correction)		Use <u>one</u> of	the following releases: (GSM Phase 2)
		A	(corresponds to a correction in a	n earlier release	) R96	(Release 1996)
		C	(addition of feature), (functional modification of featur	e)	R98	(Release 1997) (Release 1998)
			<ul> <li>(editorial modification)</li> <li>ed explanations of the above cate</li> </ul>	gories can		(Release 1999) (Release 4)
		be fou	nd in 3GPP <u>TR 21.900</u> .	-		(Release 5) (Release 6)

## Reason for change: ₩

- Currently there is ambiguous and double specified UE behaviour on receiving SIB16, in the case that the UE receives a pre-defined configuration with a different value tag to the value tag currently stored.
- 2) In RRC it is specified behaviour that the UE should act on information received from the other access technology informing it of the number of pre-defined configurations to report. However GERAN2/CN1 have clarified that they will not provide such information to the UE in Release 5. Therefore, it should not be required for the UE to expect to receive this information.
- 3) The specification of the configuration of the INTER-RAT HANDOVER INFO WITH INTER RAT CAPABILITIES (RRC) container by the other RAT is currently incorrect, and does not include the "pre-defined configuration status information compressed" that was added in Release 5.
- 4) The UE behaviour with regards to how to indicate non-stored predefined configurations within the compressed "predefined configuration status information compressed" IE is currently not clear.
- 5) The tabular of the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES does not currently include the "compressed" IEs that were added in Release 5. This is incorrect.

#### Summary of change: ₩

- 1) In section 8.1.1.6.16, the behaviour of the UE on receiving SIB16 is clarified to allow only a single behaviour.
- 2) In section 8.1.16, the specification that the UE should act on "number of reported PDC indications" is removed.
- 3) In section 8.1.16, the inclusion of the "pre-defined configuration status information compressed" is described in the "Inter RAT Handover Info" procedure text, with regards to the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES container configuration.
- 4) In section 10.3.4.5b, the tabular is aligned to allow for the fact that nonstored pre-defined configurations are absent, and the semantics description is updated to clarify the UE behaviour.
- 5) In section 14.12.4.1, the tabular description of the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES is updated to include the missing "compressed" IEs.

## Consequences if not approved:

 $\mathfrak{R}$ 

If the changes in points 1 and 4 are not approved, then could cause misunderstanding of the pre-defined configuration value tags between UTRAN and UE. Hence the feature would not work properly.

If the change in point 2 is not agreed, then it would not be clear what the UE is required to implement in Release 5.

If the changes in point 3 and 5 are not approved, then this could cause the other RAT to send incomplete information to the UTRAN. Hence the UTRAN could not use the feature.

### **Isolated Impact analysis:**

The changes 1 and 4 impact the UE and UTRAN. They would not affect UE/UTRAN implementations that have implemented as indicated in the CR. They would affect implementations supporting the corrected functionality otherwise.

Changes 3 and 5 impacts the non-UTRAN node and the UTRAN. It would not affect UTRAN and non-UTRAN network nodes that have implemented as indicated in the CR.

Change 2 has only impact on the UE implementation.

#### Impact on the test specifications

There is no test defined in 34.123 which covers these changes.

Clauses affected:	器 <u>8.1.1.6.16, 8.1.</u>	16, 10.3.4.5b, 14.12.4.1	
Other specs affected:	X Test spec	e specifications # cifications ecifications	
Other comments:	<b></b>		

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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.

## 8.1.1.6.16 System Information Block type 16

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the preconfiguration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the System Information Block with the same predefined configuration identity;
- 1> in case the UE has no predefined configuration stored with the same identity or in case the predefined configuration value tag is different:
  - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
  - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

## 8.1.16 Inter RAT handover information transfer



Figure 8.1.16-1: Inter RAT handover information transfer, normal flow

### 8.1.16.1 General

The inter RAT handover information transfer procedure is used by the UE to convey RRC information needed for inter RAT handover to UTRAN.

### 8.1.16.2 Initiation

If:

- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, orders the UE to provide the INTER RAT HANDOVER INFO message; or
- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, configures the UE to send the INTER RAT HANDOVER INFO message upon system specific conditions not involving an explicit order e.g. early classmark sending upon entering connected mode; or
- while in connected mode using another radio access technology, the inter RAT handover info changes compared to what has previously been sent via the other radio access technology:

#### the UE shall:

1> initiate the inter RAT handover information transfer procedure.

To determine if the inter RAT handover info has changed compared to what has previously been sent, the UE shall:

- 1> store the information last sent in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED;
- 1> if this variable has not yet been set:
  - 2> not initiate the inter RAT handover information transfer procedure due to change of inter RAT handover info.

NOTE: Currently neither the UE security information nor the predefined configuration status information change while in connected mode using GSM radio access technology.

## 8.1.16.3 INTER RAT HANDOVER INFO message contents to set

#### The UE shall:

- 1> include the IE "UE security information"; and
- 1> not include the IE "UE Specific Behaviour Information 1 interRAT".
- 1> in case support for the compressed version of the inter RAT handover info is indicated via the other radio access technology:
  - 2> in case the other radio access technology indicates the number of pre defined configurations mandatory to report:
    - 3> omit reporting (some) of the pre-defined configurations beyond the number indicated by the other radio access technology if this makes the INTER RAT HANDOVER INFO message size optimised for the other radio access technology.
- NOTE: In case of GSM, the omission of pre defined configurations applies in case it makes the message fit within one LapDm segment on the radio interface.
  - 2> include of the following IEs the IE that after encoding has the smallest size: IE "Predefined configuration status information compressed" or the IE "Predefined configuration status information";
  - 2> include the IE "UE radio access capability compressed".

#### 1> else:

- 2> include the IE "Predefined configuration status information";
- 2> include the IE "UE capability container", containing the IE "UE radio access capability" and the IE "UE radio access capability extension", in accordance with the following:
  - 3> if the UE supports multiple UTRA FDD Frequency Bands; or
  - 3> if the UE supports a single UTRA FDD Frequency Band different from Band I [21]:
    - 4> include the IE "UE radio access capability", excluding IEs "RF capability FDD" and "Measurement capability";

4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".

#### 3> else:

- 4> include the IE "UE radio access capability", including the IEs "RF capability FDD" and "Measurement capability" associated with the Band I [21];
- 4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".
- 1> initiate the transfer of the INTER RAT HANDOVER INFO message via the other radio access technology, using radio access technology-specific procedures;
- 1> store the following in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED if they were included in the INTER RAT HANDOVER INFO message:
  - 2> the IE "Predefined configuration status information";
  - 2> the IE "Predefined configuration status information compressed";
  - 2> the IE "UE security information";
  - 2> the IE "UE radio access capability";
  - 2> the IE "UE radio access capability extension"; and
  - 2> the IE "UE radio access capability compressed".
- 1> and the procedure ends.

### 10.3.4.5b Predefined configuration status information compressed

Another system may provide the UE with one or more predefined UTRAN configurations, comprising of radio bearer, transport channel and physical channel parameters. If requested, the UE shall indicate the configurations it has stored. The compressed predefined configuration status information should include the following RRC information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Sets with different value	MP		Telefelice		REL-5
tags	1 1 1 1				IXEE 0
>Pre-defined	MP	12			REL-5
configuration set with					
different value tags					
>>Start position	MD		INTEGER	Default value is 0,	REL-5
			(010)	corresponding with the first pre-	
				defined configuration.	
				The pre-defined configuration	
				where the consecutive	
				sequence of pre-defined	
Due defined	MP	0	Pre-defined	configurations begins.	REL-5
>>Pre-defined configuration value tag	MP	6 <max predefco<="" td=""><td>configuration</td><td>Value Tags for each pre-defined configuration starting from the</td><td>REL-5</td></max>	configuration	Value Tags for each pre-defined configuration starting from the	REL-5
list		nfig>	value tag	lowest.	
list		rilig>	10.3.4.6	lowest.	
Other Entries	OP		10.0.1.0		REL-5
>Pre-defined	MP	1 <max< td=""><td>Predefined-</td><td>List of other pre-defined</td><td>REL-5</td></max<>	Predefined-	List of other pre-defined	REL-5
configuration list with		predefco	Configuration -	configurations not included	
variable size		nfig>	Status -	within the Sets with different	
			Information	value tags, in consecutive order	
			<del>10.3.4.5a</del>	starting with the lowest. If there	
				are stored pre-defined	
				configurations positioned after a	
				pre-defined configuration that is	
				not stored, the UE shall indicate the not-stored pre-defined	
				configuration by explicitly	
				indicating it to be absent. If	
				there are no stored pre-defined	
				configurations positioned after a	
				pre-defined configuration that is	
				not stored, then the UE may	
				totally omit these pre-defined	
				configurations from the IE, i.e.	
				reduce the size of the list to	
				correspond to the last position	
				that contained a stored pre-	
				defined configuration. Not stored	
				pre-defined configurations- appearing at the end of the list	
				need not be included.	
>>Predefined	OP	1	Predefined	The UE shall include the value	REL-5
configuration value tag	<u> </u>		configuration	tag if it has stored the	<u></u>
			value tag	concerned configuration	
			10.3.4.6		

## 14.12.4.1 INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES

This RRC message is sent between network nodes when preparing for an inter RAT handover to UTRAN.

Direction: source RAT→target RNC

Information Element/Group	Need	Multi	Type and	Semantics description
Name			reference	-

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
UE Information elements			reference	
Predefined configuration status	<u>OP</u>		Predefined	
information	<u> </u>		configuration	
<u>information</u>			status	
			information	
			10.3.4.5a	
Predefined configuration status	OP		Predefined	REL-5
information compressed	_		configuration	
			status	
			information	
			compressed	
			<u>10.3.4.5b</u>	
UE security information	OP		UE security	
			information	
			10.3.3.42b	
UE Specific Behaviour	<u>OP</u>		UE Specific	This IE shall not be included in
Information 1 interRAT			<u>Behaviour</u>	this version of the protocol
			Information 1	
			interRAT	
			<u>10.3.3.52</u>	
UE capability container	OP			
>UE radio access capability	MP		UE radio	
			access	
			capability	
	NAD		10.3.3.42	Ald I di IE:
>UE radio access capability	MP		UE radio	Although this IE is not always
extension			access	required, the need has been
			capability	set to MP to align with the
			extension	ASN.1
			10.3.3.42a	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
>UE Specific Behaviour-	<del>OP</del>		UE Specific	This IE shall not be included in
Information 1 interRAT			Behaviour-	this version of the protocol
			Information 1	·
			interRAT-	
			<del>10.3.3.52</del>	
UE radio access capability	<u>OP</u>		<u>UE radio</u>	REL-5
compressed			access	
			<u>capability</u>	
			compressed	
			<u>10.3.3.420</u>	
Non RRC IEs				
Radio Bearer IEs				
Predefined configuration status	<del>OP</del>		Predefined	
information			configuration-	
			<del>status</del>	
			information-	
			<del>10.3.4.5a</del>	
Other Information elements				
	OP	1 to		
UE system specific capability	OP			
		<maxsyste< td=""><td></td><td></td></maxsyste<>		
		mCapabilit		
>Inter-RAT UE radio access	MP	y>	Inter-RAT	
	IMP		UE radio	
capability			access	
			capability 10.3.8.7	
Fallura sauca	OD			Diagraphica information valetad
Failure cause	OP		Failure	Diagnostics information related to an earlier handover to
			cause	10 000 00000000000000000000000000000000
Protocol error information	CV-ProtErr		10.3.3.13 Protocol	UTRAN request
Protocol error information	GV-Proterr			
			error information	
			10.3.8.12	

Condition	Explanation
ProtErr	This IE is mandatory present if the IE "Protocol error
	indicator" is included and has the value "TRUE".
	Otherwise it is not needed.

NOTE 1: To facilitate that network nodes can transparently forward the RRC information received, the INTER

RAT HANDOVER INFO WITH INTER RAT CAPABILITIES should include the entire INTER RAT

HANDOVER INFO message. The network node, which may not be able to decode the information
received, may only append some information to what was received.

NOTE <u>2</u>: The above table does not need to reflect the order of the information elements in the actual encoded message. The order, that is reflected in the ASN.1, should be chosen in a manner that avoids that network nodes need to perform reordering of information elements.

# 3GPP TSG-RAN-WG2 Meeting #42 Montreal, Canada, 10<sup>th</sup>- 14<sup>th</sup> May 2004

## Tdoc #R2-041238

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For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{K} symbols.

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

Title:	$\mathfrak{H}$	Comp	oressed INTER RAT HANDOVE	R INFO mess	age modifica	tions/corrections
Source:	$\mathfrak{H}$	RAN	I WG2			
Work item code	<i>:</i>	TEIS	5		Date: ૠ	May 2004
Category:		F A E C Detail	ne of the following categories:  (correction)  (corresponds to a correction in all (addition of feature), (functional modification of feature) (editorial modification) ed explanations of the above categorical in 3GPP TR 21.900.	e)	2 ) R96 R97	Rel-6 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)

## 

- Currently there is ambiguous and double specified UE behaviour on receiving SIB16, in the case that the UE receives a pre-defined configuration with a different value tag to the value tag currently stored.
- 2) In RRC it is specified behaviour that the UE should act on information received from the other access technology informing it of the number of pre-defined configurations to report. However GERAN2/CN1 have clarified that they will not provide such information to the UE in Release 5. Therefore, it should not be required for the UE to expect to receive this information.
- 3) The specification of the configuration of the INTER-RAT HANDOVER INFO WITH INTER RAT CAPABILITIES (RRC) container by the other RAT is currently incorrect, and does not include the "pre-defined configuration status information compressed" that was added in Release 5.
- 4) The UE behaviour with regards to how to indicate non-stored predefined configurations within the compressed "predefined configuration status information compressed" IE is currently not clear.
- 5) The tabular of the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES does not currently include the "compressed" IEs that were added in Release 5. This is incorrect.

#### Summary of change: ₩

- 1) In section 8.1.1.6.16, the behaviour of the UE on receiving SIB16 is clarified to allow only a single behaviour.
- 2) In section 8.1.16, the specification that the UE should act on "number of reported PDC indications" is removed.
- 3) In section 8.1.16, the inclusion of the "pre-defined configuration status information compressed" is described in the "Inter RAT Handover Info" procedure text, with regards to the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES container configuration.
- 4) In section 10.3.4.5b, the tabular is aligned to allow for the fact that nonstored pre-defined configurations are absent, and the semantics description is updated to clarify the UE behaviour.
- 5) In section 14.12.4.1, the tabular description of the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES is updated to include the missing "compressed" IEs.

## Consequences if not approved:

 $\mathfrak{R}$ 

If the changes in points 1 and 4 are not approved, then could cause misunderstanding of the pre-defined configuration value tags between UTRAN and UE. Hence the feature would not work properly.

If the change in point 2 is not agreed, then it would not be clear what the UE is required to implement in Release 5.

If the changes in point 3 and 5 are not approved, then this could cause the other RAT to send incomplete information to the UTRAN. Hence the UTRAN could not use the feature.

### **Isolated Impact analysis:**

The changes 1 and 4 impact the UE and UTRAN. They would not affect UE/UTRAN implementations that have implemented as indicated in the CR. They would affect implementations supporting the corrected functionality otherwise.

Changes 3 and 5 impacts the non-UTRAN node and the UTRAN. It would not affect UTRAN and non-UTRAN network nodes that have implemented as indicated in the CR.

Change 2 has only impact on the UE implementation.

#### Impact on the test specifications

There is no test defined in 34.123 which covers these changes.

Clauses affected:	器 8.1.1.6.16, 8.1. 	16, 10.3.4.5b, 14.12.4.1	
Other specs affected:	X Test spe	re specifications	
Other comments:	<b></b>		

#### How to create CRs using this form:

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

## 8.1.1.6.16 System Information Block type 16

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the preconfiguration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the System Information Block with the same predefined configuration identity;
- 1> in case the UE has no predefined configuration stored with the same identity or in case the predefined configuration value tag is different:
  - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
  - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

## 8.1.16 Inter RAT handover information transfer



Figure 8.1.16-1: Inter RAT handover information transfer, normal flow

### 8.1.16.1 General

The inter RAT handover information transfer procedure is used by the UE to convey RRC information needed for inter RAT handover to UTRAN.

## 8.1.16.2 Initiation

If:

- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, orders the UE to provide the INTER RAT HANDOVER INFO message; or
- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, configures the UE to send the INTER RAT HANDOVER INFO message upon system specific conditions not involving an explicit order e.g. early classmark sending upon entering connected mode; or
- while in connected mode using another radio access technology, the inter RAT handover info changes compared to what has previously been sent via the other radio access technology:

#### the UE shall:

1> initiate the inter RAT handover information transfer procedure.

To determine if the inter RAT handover info has changed compared to what has previously been sent, the UE shall:

- 1> store the information last sent in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED;
- 1> if this variable has not yet been set:
  - 2> not initiate the inter RAT handover information transfer procedure due to change of inter RAT handover info.

NOTE: Currently neither the UE security information nor the predefined configuration status information change while in connected mode using GSM radio access technology.

## 8.1.16.3 INTER RAT HANDOVER INFO message contents to set

#### The UE shall:

- 1> include the IE "UE security information"; and
- 1> not include the IE "UE Specific Behaviour Information 1 interRAT".
- 1> in case support for the compressed version of the inter RAT handover info is indicated via the other radio access technology:
  - 2> in case the other radio access technology indicates the number of pre defined configurations mandatory to report:
    - 3> omit reporting (some) of the pre-defined configurations beyond the number indicated by the other radio access technology if this makes the INTER RAT HANDOVER INFO message size optimised for the other radio access technology.
- NOTE: In case of GSM, the omission of pre defined configurations applies in case it makes the message fit within one LapDm segment on the radio interface.
  - 2> include of the following IEs the IE that after encoding has the smallest size: IE "Predefined configuration status information compressed" or the IE "Predefined configuration status information";
  - 2> include the IE "UE radio access capability compressed".

#### 1> else:

- 2> include the IE "Predefined configuration status information";
- 2> include the IE "UE capability container", containing the IE "UE radio access capability" and the IE "UE radio access capability extension", in accordance with the following:
  - 3> if the UE supports multiple UTRA FDD Frequency Bands; or
  - 3> if the UE supports a single UTRA FDD Frequency Band different from Band I [21]:
    - 4> include the IE "UE radio access capability", excluding IEs "RF capability FDD" and "Measurement capability";

4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".

#### 3> else:

- 4> include the IE "UE radio access capability", including the IEs "RF capability FDD" and "Measurement capability" associated with the Band I [21];
- 4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".
- 1> initiate the transfer of the INTER RAT HANDOVER INFO message via the other radio access technology, using radio access technology-specific procedures;
- 1> store the following in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED if they were included in the INTER RAT HANDOVER INFO message:
  - 2> the IE "Predefined configuration status information";
  - 2> the IE "Predefined configuration status information compressed";
  - 2> the IE "UE security information";
  - 2> the IE "UE radio access capability";
  - 2> the IE "UE radio access capability extension"; and
  - 2> the IE "UE radio access capability compressed".
- 1> and the procedure ends.

#### 10.3.4.5b Predefined configuration status information compressed

Another system may provide the UE with one or more predefined UTRAN configurations, comprising of radio bearer, transport channel and physical channel parameters. If requested, the UE shall indicate the configurations it has stored. The compressed predefined configuration status information should include the following RRC information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Sets with different value	MP		Telefelice		REL-5
tags	1011				I TELL O
>Pre-defined	MP	12			REL-5
configuration set with					
different value tags					
>>Start position	MD		INTEGER	Default value is 0,	REL-5
			(010)	corresponding with the first pre-	
				defined configuration.	
				The pre-defined configuration	
				where the consecutive	
				sequence of pre-defined	
Dan defined	MP	0	Pre-defined	configurations begins.	REL-5
>>Pre-defined configuration value tag	IMP	6 <max predefco<="" td=""><td>configuration</td><td>Value Tags for each pre-defined configuration starting from the</td><td>REL-5</td></max>	configuration	Value Tags for each pre-defined configuration starting from the	REL-5
list		nfig>	value tag	lowest.	
list		rilig>	10.3.4.6	lowest.	
Other Entries	OP		10.0.1.0		REL-5
>Pre-defined	MP	1 <max< td=""><td>Predefined-</td><td>List of other pre-defined</td><td>REL-5</td></max<>	Predefined-	List of other pre-defined	REL-5
configuration list with		predefco	Configuration -	configurations not included	
variable size		nfig>	Status-	within the Sets with different	
			Information	value tags, in consecutive order	
			<del>10.3.4.5a</del>	starting with the lowest. If there	
				are stored pre-defined	
				configurations positioned after a	
				pre-defined configuration that is	
				not stored, the UE shall indicate the not-stored pre-defined	
				configuration by explicitly	
				indicating it to be absent. If	
				there are no stored pre-defined	
				configurations positioned after a	
				pre-defined configuration that is	
				not stored, then the UE may	
				totally omit these pre-defined	
				configurations from the IE, i.e.	
				reduce the size of the list to	
				correspond to the last position	
				that contained a stored pre-	
				defined configuration. Not stored	
				pre-defined configurations appearing at the end of the list	
				need not be included.	
>>Predefined	OP	1	Predefined	The UE shall include the value	REL-5
configuration value tag	<u> </u>		configuration	tag if it has stored the	
			value tag	concerned configuration	
			10.3.4.6		

## 14.12.4.1 INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES

This RRC message is sent between network nodes when preparing for an inter RAT handover to UTRAN.

Direction: source RAT→target RNC

Information Element/Group	Need	Multi	Type and	Semantics description
Name			reference	-

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
UE Information elements			reference	
Predefined configuration status	<u>OP</u>		Predefined	
information	<u> </u>		configuration	
<u>information</u>			status	
			information	
			10.3.4.5a	
Predefined configuration status	OP		Predefined	REL-5
information compressed	_		configuration	
			status	
			information	
			compressed	
			<u>10.3.4.5b</u>	
UE security information	OP		UE security	
			information	
			10.3.3.42b	
UE Specific Behaviour	<u>OP</u>		UE Specific	This IE shall not be included in
Information 1 interRAT			<u>Behaviour</u>	this version of the protocol
			Information 1	
			interRAT	
			<u>10.3.3.52</u>	
UE capability container	OP			
>UE radio access capability	MP		UE radio	
			access	
			capability	
	NAD		10.3.3.42	Ald I di IE:
>UE radio access capability	MP		UE radio	Although this IE is not always
extension			access	required, the need has been
			capability	set to MP to align with the
			extension	ASN.1
			10.3.3.42a	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
>UE Specific Behaviour-	<del>OP</del>		UE Specific	This IE shall not be included in
Information 1 interRAT			Behaviour-	this version of the protocol
			Information 1	·
			interRAT-	
			<del>10.3.3.52</del>	
UE radio access capability	<u>OP</u>		<u>UE radio</u>	REL-5
compressed			access	
			capability	
			compressed	
			<u>10.3.3.420</u>	
Non RRC IEs				
Radio Bearer IEs				
Predefined configuration status	<del>OP</del>		Predefined	
information			configuration-	
			<del>status</del>	
			information-	
			<del>10.3.4.5a</del>	
Other Information elements				
	OD	4.4-		
UE system specific capability	OP	1 to		
		<maxsyste< td=""><td></td><td></td></maxsyste<>		
		mCapabilit		
L C DATUE E	MP	y>	I C DAT	
>Inter-RAT UE radio access	MP		Inter-RAT UE radio	
capability				
			access	
			capability 10.3.8.7	
Fallers	OD			Diamagnia information valetad
Failure cause	OP		Failure	Diagnostics information related
			cause	to an earlier handover to
Protocol error information	CV/ Draff		10.3.3.13	UTRAN request
Protocol error information	CV-ProtErr		Protocol	
			error	
			information	
			10.3.8.12	

Condition	Explanation
ProtErr	This IE is mandatory present if the IE "Protocol error
	indicator" is included and has the value "TRUE".
	Otherwise it is not needed.

NOTE 1: To facilitate that network nodes can transparently forward the RRC information received, the INTER

RAT HANDOVER INFO WITH INTER RAT CAPABILITIES should include the entire INTER RAT

HANDOVER INFO message. The network node, which may not be able to decode the information
received, may only append some information to what was received.

NOTE <u>2</u>: The above table does not need to reflect the order of the information elements in the actual encoded message. The order, that is reflected in the ASN.1, should be chosen in a manner that avoids that network nodes need to perform reordering of information elements.