3GPP TSG RAN Meeting #28 **RP-050378**
Quebec, Canada, 1 - 3 June 2005

Title:	**3GPP TSG RAN Work Item Description Sheets after meeting #27 Active WIs**
Source:	**3GPP support**
	1/4/2005

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3GPP TSG RAN Meeting #28 **RP-050378**
Quebec, Canada, 1 - 3 June 2005

Title: **3GPP TSG RAN Study Item Description Sheets after meeting #27 Concluded Studies**

Source: **3GPP support**

31/3/2005

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Contents

1 Introduction

This document contains Study Item sheets in TSG-RAN for all approved Study Items that have been finished. The WI sheets of the approved and finished WIs are provided in a separate document, RAN_Work_Items_History. The SI sheets for active SIs can be found in RAN_Study_Items.

The following study was completed at TSG RAN#27, a Work Item follows and the WIDS is incorporated to this file:

- **Uplink enhancements for UTRA TDD**.

2 High speed downlink packet access

Last distributed as: RAN_Study_Items_after_RAN_9 (originally RP-000032)

Study Item Description

Title: High Speed Downlink Packet Access

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

This work item proposes to study enhancements that can be applied to UTRA in order to provide very high speed downlink packet access. It's aim is to identify a long term evolution path for the UTRA air interface.

4 Objective

It is proposed that the study should include, but not be restricted to, the following topics:
- Adaptive modulation and coding schemes
- Hybrid ARQ protocols
- Position of the scheduling function within UTRAN
- Other advanced techniques

[note: Technical details of one proposal can be found in TDoc 126]

5 Service Aspects

Probably none– better support of existing packet data services

6 MMI-Aspects

None

7 Charging Aspects

None– uses existing packet data charging schemes

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	Evaluation of High Speed Downlink Packet Data Service	R2	R1, R3, R4	RAN #10	RAN #11	New technical report

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

The technical report should present the results of the study and make a recommendation for which techniques should be incorporated into future releases of the standard. The report should also detail the work items descriptions necessary to continue this work.

11 Work item raporteurs

Amitava Ghosh, Motorola

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

3 Uplink Synchronous Transmission Scheme

Last distributed as: RP-010914 (originally RP-000291)

Study Item Description

Title: Uplink Synchronous Transmission Scheme (USTS)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

USTS is expected to provide good capacity in the uplink with low overhead and minimal impact on hardware and software resources at UE and in the UTRAN.

4 Objective

The purpose of this work item is to increase the uplink capacity by means of making a cell receive orthogonalized signals from UEs.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X

Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.854	USTS	WG1		RAN #12	RAN #14	
25.839	USTS	WG3		RAN #12	RAN #14	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.211		Physical channels and mapping of transport channels onto physical channels (FDD)	RAN #14	
25.213		Spreading and modulation (FDD)	RAN #14	
25.214		FDD : Physical layer procedures	RAN #14	
25.331		Radio Resource Control (RRC) Protocol Specification	RAN #14	
25.413		UTRAN Iu Interface RANAP Signalling	RAN #14	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #14	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #14	

11 Work item raporteurs

Duk Kyung Kim (kdk@sktelecom.com)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

This is a building block part of the radio interface improvement feature.

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

4 Feasibility Study of UE antenna efficiency test methods performance requirements

Last distributed as: RAN_Study_Items_after_RAN_9 (originally in RP-000468 as R4-000732)

Study Item Description

Title: Feasibility study of UE antenna efficiency test methods performance requirements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

This is parented to the RAN improvement feature.

3 Justification

Antenna performance of the UE is very critical to the operation of the network. RAN WG4 had agreed that this should be performed in future releases of its specifications.

4 Objective

To perform a feasibility study on antenna test methods to be used for evaluating the efficiency of UE antenna. The feasibility study will also consider different requirements on different UE types.

5 Proposed building blocks and work tasks:

6 Service Aspects

None

7 MMI-Aspects

None

8 Charging Aspects

None

9 Security Aspects

None

10 Impacts

Affects:	SIM	ME	AN	CN	Others

Yes		X			
No	X		X	X	
Don't know					

11 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at RAN#	Approved at RAN	Comments
	TR on UE antenna test methods				RAN #12	

Affected existing specifications				
Spec No.	CR	Subject	Approved at RAN#12	Comments

12 Work item rapporteur

Olle Edvardsson, Allgon

13 Work item leadership

TSG-RAN WG4

14 Supporting Companies

TSG-RAN

15 Classification of the WI (if known)

	Feature (go to 15a)
	Building Block (go to 15b)
X	Work Task (go to 15c)

15c The WI is a Work Task: parent Feature: Radio interface improvement feature

5 Improvement of Radio Resource Management across RNS and RNS/BSS

Last distributed as: RP-010480

Study Item Description

Title: Study Item Description for an Improvement of RRM across RNS and RNS/BSS

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

At the 3GPP UTRAN Evolution workshop, held in Helsinki, it was agreed to go forward with studies in the area of Multiradio support. To allow an easier load sharing and better quality of service management across RNS and RNS/BSS, a proper method should be studied.

4 Objective

The objective of this study item is to work out the functional grouping and the interface aspects in order to provide efficient resource management across RNS and RNS/BSS. The method which allows efficient resource management across RNS and RNS/BSS shall not affect UE/MS.

If there is a need to define new interface, then the possible interface shall be open.

The objective is also to look into the aspects between GERAN and UTRAN for this feature.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

This is a Release 5 Study Item

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.881	Study Item Description for Improvement of RRM across RNS and RNS/BSS	RAN3	RAN2	RAN #13	RAN #14	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Study item raporteurs

Antti Toskala, Nokia, Helsinki, Finland

12 Study item leadership

RAN 3

13 Supporting Companies

Nokia, Orange PCS Ltd, Siemens, Vodafone Group,

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: Parent Feature: RAN Improvement

6 Mitigating the Effect of CPICH Interference at the UE

Last distributed as: RAN_Study_Items_after_RAN_14 (originally in RP-010431)

Study Item Description

Title: Mitigating the Effect of CPICH Interference at the UE

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Because the CPICH is typically allocated a significant portion of the total Node-B transmit power, the interference impact of the CPICH is particularly strong. On the other hand, the information content and structure of the CPICH channels are completely known a priori at the receiver, which can considerably simplify efforts to mitigate the CPICH interference effect. Mitigating the effect of CPICH interference at the UE may significantly improve UE performance requirements and increase radio network capacity.

4 Objective

The objectives of this study are the verification of the benefits of this feature through additional simulation studies, and further evaluation of complexity issues. Depending on the results of this study, recommendations will be made as to whether to establish a 3GPP Work Item in order to incorporate this feature into the 3GPP standard. This would ultimately involve the establishment of appropriate test scenarios and procedures, as well as the derivation of improved UE performance requirements through physical layer simulations.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X			
No	X		X	X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.991		R4		RAN#14	RAN#15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN #15	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T #15	

11 Work item raporteurs

Shimon Moshavi, Intel (Shimon.Moshavi@intel.com)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

Cingular, T-Mobil, Telecom Italia, AWS, Omnitel/Vodafone, Lucent, Intel

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature
(list of Work Items identified as building blocks)
14b The WI is a Building Block: parent Feature
Improvements of Radio Interface

14c The WI is a Work Task: parent Building Block
(one Work Item identified as a building block)

7 Re-introduction of the downlink SIR measurement

Last distributed as: RAN_Study_Items_after_RAN_13 (originally in RP-010434)

Study Item Description

Title: Introduction of SIR measurement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

The SIR measurement is recognised to be a valuable tool to an operator, since it provides the ability to obtain an indication of intercell interference and hence coverage from subscriber UEs while in call within a network. This is a useful measure when trying to optimise the capacity and coverage of the cells.

4 Objective

The purpose of the study is to:
- elaborate the purposes of the SIR measurement,
- set performance requirements to meet those purposes,
- identify possible techniques to meet those requirements, including techniques that might already be used for other purposes,
- identify reporting procedures and signalling, and
- alignment with the O&M procedures.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
					RAN#14	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.133 25.123 25.215 25.225 25.331 25.302				

11 Work item raporteurs

Torgny Palenius, Ericsson

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

Telecom Italia, Blu, Ericsson, Mobilkom Austria, One2One, Telefonica

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

RAN improvements

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

8 SRNS Relocation Procedure Enhancement

Originally in RP-010490

Study Item Description

Title: SRNS Relocation Procedure Enhancement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

SRNS relocation is used to move the control of a UE connection from a source (old serving) RNC to a target (new serving) RNC. This means that both control and user plane are moved to the target (new serving) RNC.

The current SRNS relocation procedure requires that the Drift RNC maintains all the radio links prior to it becoming the target RNC. In addition it does not support the relocation of a UE to a Drift RNC when another Drift RNC is involved or when previous SRNC is involved. The Iu-r, while the relocation is taking place, is not allowed to establish connections from the new SRNC to the previously existing DRNCs or to the previous SRNC.

Both of these relocation scenarios are included in TR 25.832 Manifestations for Handover and SRNS Relocation (section 5.2.2), but are marked as unsupported by R99 procedures.

4 Objective

The purpose of this Study Item is to identify which enhancements could be made to the SRNS relocation procedure to remove some of the limitations applicable in release 99 and R4.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

The Core Network part of Iu signalling (RANAP) is not affected by the changes implied in this Working Item.

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X			X
Don't know				x	

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR		R3			RAN#17	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Olivier Guyot, Nokia.

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature

14b The SI is a Building Block: parent Feature

14c The SI is a Work Task: parent Building Block

UTRAN Improvement Feature

9 Introduction of direct transport bearers between SRNC and Node-B

Last distributed as: RAN_Study_Items_after_RAN_15 (originally in RP-010492)

Study Item Description

Title: Introduction of direct transport bearers between SRNC and Node-B; removing the artificial limitation present in the Rel99/Rel4 specifications.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

SRNS relocation enhancement

3 Justification

Increased efficiency of the UTRAN and the quality of service to the end user.

4 Objective

In Rel99/Rel4, all Iub/Iur transport bearers used for the transport of Dedicated Transport Channels need to be terminated at the DRNC. However when accepting certain limitations, there is no reason why these transport bearers should not go directly from SRNC to Node-B.

Going directly from SRNC to Node-B has some obvious benefits like decreasing the processing required by the DRNC and decreasing the delay of UTRAN internal transport.

This objective with this study is to identify consequences resulting from removal of the artificial limitation which currently requires transport bearers to be terminated at the DRNC.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		WG3			RAN #16	
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments

11 Work item raporteurs

Risto Sepponen (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The SI is a Work Task: parent Building Block

RRM optimizations for Iur and Iub

10 Feasibility study of UE antenna efficiency test methods performance requirements (2)

Study Item Description

Title: Feasibility study of UE antenna efficiency test methods performance requirements (2)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

This is parented to the RAN improvement feature.

3 Justification

Antenna performance of the UE is very critical to the operation of the network. RAN WG4 had agreed that this should be performed in future releases of its specifications.

4 Objective

To perform a feasibility study on antenna test methods to be used for evaluating the efficiency of UE antenna. The feasibility study will also consider different requirements on different UE types.

5 Proposed building blocks and work tasks:

6 Service Aspects

None

7 MMI-Aspects

None

8 Charging Aspects

None

9 Security Aspects

None

10 Impacts

Affects:	SIM	ME	AN	CN	Others

Yes		X			
No	X		X	X	
Don't know					

11 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at RAN#	Approved at RAN	Comments
	TR on UE antenna test methods				RAN #18	

Affected existing specifications				
Spec No.	CR	Subject	Approved at RAN	Comments

12 Work item rapporteur

Alf Ahlström, Allgon

13 Work item leadership

TSG-RAN WG4

14 Supporting Companies

TSG-RAN

15 Classification of the SI (if known)

	Feature (go to 15a)
	Building Block (go to 15b)
X	Work Task (go to 15c)

15c The SI is a Work Task: parent Feature: Radio interface improvement feature

11 Fast Cell Selection (FCS) for HS-DSCH

Originally in RP-010227
Closed at TSG RAN #19 due to the lack of progress and upon rapporteur's request. Last Status Report in RP-030154.

Study Item Description

Title: Fast Cell Selection (FCS) for HS-DSCH

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

In RAN#7 a study item on High Speed Downlink Packet Access was approved for consideration. FCS was one of the features for HS-DSCH. However, RAN1 recommended that both intra and inter Node-B FCS should be studied further during Release#5 HSDPA work so that it can be a part of Release-6 specification.

4 Objective

Initial simulation studies on HSDPA indicate that FCS provides some benefit in average throughput in certain cases. However, the results were not conclusive. As such, a FCS study item is proposed for Rel-5 so that its benefits w.r.t HSDPA can be fully evaluated. The following analysis should be part of the study item on FCS:

1. Investigate the benefits of FCS with full motion simulator instead of the quasi-motion simulator (users experience Rayleigh faded but do not move) as used in the previous study.
2. Model integrated voice and data, different traffic models (web browsing, WAP, video streaming etc.) and TCP/IP in the system simulator.
3. Model the handoff process in the system simulator.

5 Service Aspects

Probably none– better support of existing packet data services

6 MMI-Aspects

None

7 Charging Aspects

None– uses existing packet data charging schemes

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR	Evaluation of FCS for HS-DSCH	R1	R2, R3, R4	RAN #19	RAN #20	New technical report

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

The technical report should present the results of the study and make a recommendation for which techniques should be incorporated into future releases of the standard. The report should also detail the work items descriptions necessary to continue this work.

11 Work item raporteurs

Rizwan Hassan, Lucent

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)

	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The SI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The SI is a Work Task: parent Building Block

(one Work Item identified as a building block)

12 Viable deployment of UTRA in additional and diverse spectrum arrangements

Originally in RP-010718.

Study Item Description

Title: Feasibility Study considering the viable deployment of UTRA in additional and diverse spectrum arrangements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

The present 3GPP specifications cover the IMT-2000 2 GHz band (Band I and II), in accordance with ITU-R Radio Regulations Article S5 Footnote S5.388, in R99 and Rel4 and the work is continuing with the UMTS1900 Band II improvements and UMTS 1800 Band III.

ITU-R WRC-2000 identified additional extension bands for IMT-2000 that requires further studies for the subsequent future deployment of UTRA in the whole or parts of the bands as indicated below:

- 806 – 960 MHz (The whole band 806 – 960 MHz is not identified on a global basis for IMT-2000 due to variation in the primary Mobile Service allocation across the three ITU Regions)
- 1710 – 1885 MHz, where the work is progressing under UMTS1800 SI.
- 2500 – 2690 MHz (In ITU Region 1 the bands 2500 – 2520 MHz and 2670 – 2690 MHz is also allocated on a co-primary basis to the Mobile Satellite Service subject to market demand)

4 Objective

The viable deployment of UTRA in additional and diverse spectrum arrangements should be assessed, including

- Duplex spacing arrangements other than for Bands I, II and III.
- Arbitrary selectable or variable duplex spacing methods
- Use of asymmetric spectrum arrangements considering the need for additional downlink traffic capacity
- Terminal capabilities and signalling
- Possible interface impacts

The work will result in a technical report.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.889	FS considering the viable deployment of UTRA in additional and diverse spectrum arrangements	RAN4	RAN2 RAN3	RAN #16	RAN #20	

11 Work item raporteurs

Thomas Unshelm, Ericsson

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)

	Work Task (go to 14c)

14b The SI is a Building Block: parent Feature

Radio Interface Improvement Feature

13 Early UE handling in UTRAN

Study Item Description

Title: Feasibility Study on the early UE handling in UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked study items

SA WI on Early UE handling?
CN SI on early UE handling?
GERAN SI on early UE handling?

3 Justification

The stimulus for the work is the concern that mobiles are unable to be fully tested against all of the features (or combinations of features) in the R'99 standard. Hence when one of the un-tested features is "switched on" in a network, there is a risk that some mobiles will not work with this feature (or particular combination of features). Hence, Operators are keen that methods are available that provide the ability to handle these early mobiles in a smooth manner.

4 Objective

The objective of this Study Item is to study the UTRAN impacts and merits of handling indications regarding UE maturity.

The candidates, as a complement to the new TR (equivalent to 09.94), were:

1) Hooks included into some early RRC messages; hook may be IMEI-SV, derived from IMEI-SV, or other indication
2) Extension mechanism to the RRC messages allowing rel-99 corrections, when rel-4 changes needs to be backwards compatible.
3) IMEI-SV solution to the CN, with an indication to the RAN; indication may be derived from IMEI-SV or may be IMEI-SV itself.

In order that the relative merits of these methods can be studied, it is required that outstanding issues with their handling are resolved.

5 Service Aspects
No

6 MMI-Aspects
No

7 Charging Aspects

No

8 Security Aspects

No

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X	X	
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	SI on Early UE handling in RAN	RAN WG2	RAN WG3	18	20	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Alan Law (Vodafone Ltd)

12 Work item leadership

RAN WG2

13 Supporting Companies

TSG RAN
(Vodafone Group, Nortel, Nokia, Ericsson, Siemens)

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block
Early UE handling (SA2)

14 Improvement of inter-frequency and inter-system measurements for 1.28 Mcps TDD

Originally in RP-010929. Closed at RAN #21, last Status Report in RP-030397.

Study Item Description

Title: Improvement of inter-frequency and inter-system measurements for 1.28 Mcps TDD.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

In the case of 1.28Mcps TDD, some idle time slots due to discontinuous transmission can be used for monitoring GSM, FDD and 3.84 Mcps TDD as compressed mode in FDD mode. However, the current Rel-4 specification may not reserve enough time for each inter-system measurement. This may cause the relativey long measurement time and may result in the increase of terminal power consumption or a call drop in case that UE is locatesd at handover region.
A candidate for some improvement can be as follows:
- Enlarging the measurement window for inter-system measurement.
- Chanege the location of measurement window for inter-system measurement.

4 Objective

The purpose of this study item is to provide the enlarged measurement window and the change of the location of measurement window in 1.28 Mcps TDD for improved system performance.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for informationat plenary#	Approved at plenary#	Comments
TR 25.XXX		WG1		RAN #17	RAN #21	

Affected existing specifications			
Spec No.	Subject	Approved at plenary#	Comments
25.222	Mulplexing and channel coding(TDD)		
25.224	Physical Layer Procedures (TDD)		
25.331	RRC Protocol Specification		
25.423	UTRAN Iur Interface RNSAP Signalling		
25.433	UTRAN Iub Interface NBAP Signalling		
25.123	Requirements for Support of Radio Mesource Management (TDD)		

11 Study item raporteurs

Li Xiao Qiang, SAMSUNG

12 Study item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The SI is a part of the radio interface improvement features.

14c The SI is a Work Task: parent Building Block

(one Work Item identified as a building block)

15 Enhancements to OTDOA Positioning using advanced blanking methods

Last distributed as: RP-020453. Closed at RAN #21, last Status Report in RP-030403.

Study Item Description

Title: Enhancements to OTDOA Positioning using advanced blanking methods

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None.

3 Justification

Currently OTDOA and optionally IPDL are the supported OTD (Observed Time Difference) methods for UE positioning. The use of CDMA in the RAN introduces the problem of hearability, whereby a UE is unable to measure a distant Node B due to interference from a nearby Node B. To compute a position it is necessary to receive and measure signals from at least 3 geographically distinct Node Bs, although in practise it is necessary to receive many more than this if reliable and robust positioning is to be achieved in the presence of multipath.

Location Based Services are gaining momentum spurred on by requirements such as the FCC's E-911 directive. Phase 2 of this directive requires the UE to be located within 50m 67% of the time and within 150m 95% of the time. Any UE positioning technology adopted by RAN will need to meet this accuracy requirement.

IPDL was introduced to RAN in 1999 and the work on standardising it is now nearing completion. Several documents analysing the performance of IPDL have been presented to RAN4 recently. These indicate that it is probably able to meet the E-911 requirements, although it is likely to be some time before supporting field test results are available to verify its performance. Since IPDL's introduction three years ago considerable experience with the performance on E-OTD for GSM has been gathered and new Observed Time Difference techniques and methods have been developed.

In particular new software based approaches using interference cancellation algorithms have emerged. These promise much better performance than traditional IPDL without the need to physically blank the downlink transmission. Being based on software signal processing methods they enable multiple Node Bs to be "blanked" and this results in a dramatic improvement to the positioning accuracy and robustness.

These methods should be studied as they have the following main benefits:-

- Improved performance, compliant with E-911 phase 2,

- No effect upon existing or legacy UEs, or downlink capacity
- Algorithmic enhancements can be made in the network without affecting already deployed UEs.

4 Objective

The objectives of this Study Item are as follows:

- To evaluate the performance of new interference cancellation techniques in comparison to IPDL for UE positioning using downlink OTDOA methods,
- To identify the requirements and format of measurements that would be needed to support these algorithms, specifically avoiding specifying one particular algorithm,
- To identify signalling requirements and message formats.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					X

Note: Impact on the UE is only in so far as a UE implementing the methods will require support for the new measurements and signalling. UEs that do not implement the proposed methods are expected to be completely unaffected, irrespective of whether the network supports the methods or not.

10 Expected Output and Time scale (to be updated at each plenary)

New Technical Reports						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	Enhancements to OTDOA positioning using advanced blanking techniques.	R2	R1	RAN#18	RAN#19	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item rapporteurs

David Bartlett, Cambridge Positioning Systems.

12 Work item leadership

TSG-RAN WG2 supported by WG1
Review by WG3 and WG4.

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

UE Positioning Enhancements.

16 Improved Access to UE Measurement Data for CRNC to support TDD RRM

Approved at TSG RAN #18 as RP-020901. Closed at RAN #21, last Status Report in RP-030402

Study Item Description

Title: Improved Access to UE Measurement Data for CRNC to support TDD RRM.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked study items

None

3 Justification

The Controlling RNC (CRNC) is a critical element of the Radio Resource Management (RRM) function. In TDD the CRNC is responsible for Dynamic Channel Allocation (DCA). In order to effectively perform DCA, the CRNC needs access to measurements that characterize interference and path loss on both a cell and time slot basis.

Currently the Serving RNC (SRNC) requests and receives UE specific measurements. In the case that the SRNC and CRNC are not collocated, the CRNC will be unable to access these critical measurement data, even though they are inherently available to the network.

It is desirable for the CRNC to have access to UE related measurements such as:

- Downlink CCPCH RSCP
- UE TX power
- DL ISCP

The current Iur interface allows the SRNC to forward some UE related measurements in certain scenarios (e.g. DL ISCP data to support Downlink Power Control). However, there is no mechanism to allow the CRNC to request this information according to its own needs.

To better implement DCA, especially for multi-vendor configurations, it may be beneficial to provide the CRNC with a means to initiate the transfer of UE measurement data, rather than be limited by the scheduling dictated by the SRNC.

4 Objective

The objective of this Study Item is to study the need for CRNC access to UE measurements for TDD DCA and the methods to be used to allow the CRNC to receive those measurements. The CRNC may gain access to the measurements through:

- New procedures for the Iur to support transfer of UE measurement information from the SRNC to the CRNC.

- New procedures for permitting the CRNC to request measurements directly from the UE.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 25.xyz	Improved Access to UE Measurement Data for CRNC to support TDD RRM	WG3		RAN#20	RAN#20	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Study item raporteurs

Jim Miller, InterDigital

12 Study item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN (InterDigital, Siemens, Samsung, CATT)

14 Classification of the SI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature
(list of Work Items identified as building blocks)

14b The SI is a Building Block: parent Feature

14c The SI is a Work Task: parent Building Block
RRM optimizations for Iur and Iub

17 Uplink Enhancements for Dedicated Transport Channels

Distributed as RP-020658
Study finished at TSG RAN #23 March 2004

Study Item Description

Title: Feasibility Study on Uplink Enhancements for Dedicated Transport Channels

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked study items

None

3 Justification

As the use of IP based services becomes more important there is an increasing requirement to improve the coverage and throughput as well as reduce the delay of the uplink. Applications that could benefit from an enhanced uplink may include services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming etc. This study item proposes to investigate enhancements that can be applied to UTRA in order to improve the performance on uplink dedicated transport channels.

4 Objective

It is proposed that the study should include, but not be restricted to, the following topics related to enhanced uplink for UTRA FDD to enhance uplink performance in general or to enhance the uplink performance for background, interactive and streaming based traffic:

- Adaptive modulation and coding schemes
- Hybrid ARQ protocols
- Node B controlled scheduling
- Physical layer or higher layer signalling mechanisms to support the enhancements
- Fast DCH setup
- Shorter frame size and improved QoS

5 Service Aspects

None– better support of existing services

6 MMI-Aspects

None

7 Charging Aspects

None– uses existing charging schemes

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	Enhanced Uplink for UTRA FDD	R1	R2, R3, R4		RAN#23	New study item

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

The technical report should present the results of the study and make a recommendation for which techniques should be incorporated into current and future releases of the standard. The report should also detail the work items descriptions necessary to continue this work.

11 Study item rapporteur

Karri Ranta-aho, Nokia

12 Study item leadership

RAN WG1

13 Supporting Companies

TSG RAN
(Motorola, Ericsson, Nokia, AT&T Wireless Services)

14 Classification of the SI (if known)

	Feature (go to 14a)

	Building Block (go to 14b)
	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature

(list of Study Items identified as building blocks)

14b The SI is a Building Block: parent Feature

(one Study Item identified as a feature)

14c The SI is a Work Task: parent Building Block

(one Study Item identified as a building block)

18 Low Output Powers for general purpose FDD BS

Approved at TSG RAN #19 as RP-030198
Finished at TSG RAN#23 March 2004

Study Item Description

Title: Low Output Powers for general purpose FDD BSs

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Many companies have shown interest in the feasibility of a low output power FDD Base Station and the possibilities it offers, e.g.:

1. the flexibility in radio network deployment, which should be one of the characteristics of a 3G system,
2. it is not necessary to attenuate a high power signal before feeding an active external distribution system (lower power consumption, positive environmental effects),
3. it facilitates the sharing of the infrastructure among operators, especially in locations where it is difficult to find sites, or where operators are forced by regulators to share the infrastructures,
4. it allows the placement of one or several base stations in a centralised position with separate RF power amplifiers distributed closer to the subscriber positions, thus reducing interference while meeting the unwanted emissions requirements.
5. by placing the base stations at one location, less supporting infrastructure is required and maintenance is simplified.

4 Objective

The study item shall identify the application scenarios and the relevant parameters that best characterise this low output power FDD Base Station, for instance the range of output powers to be considered (eg. -15 to 10 dBm). It shall identify the changes needed in the specifications to permit this low output power FDD Base Station, taking into account the document RP-030194, and other contributions.

Submission of initial results is planned for RAN4 #27 and RAN3#36

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		O&M, RRM
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR xx.yyy.	Low Output Powers for FDD BS	WG4	WG3		RAN#23	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

The conclusion of the study item is planned for RAN #23.

11 Work item rapporteurs

Ana Burgos & José Alberto Martín (Telefónica)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
(Tekmar Sistemi,Telefónica, TDF, Mikom, Marconi)

14 Classification of the SI

	Building Block (go to 14b)

14b The SI is a Building Block: parent Feature is Radio Interface Improvement Feature

19 Analysis of OFDM for UTRAN enhancement

Distributed as RP-020672. Revised at TSG RAN #22 as RP-030724.
The Study was completed at TSG RAN #24 June 2004.

Study Item Description

Title: Feasibility Study for the analysis of OFDM for UTRAN enhancement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked study items

Feasibility Study considering the viable deployment of UTRA in additional and diverse spectrum arrangements

3 Justification

As the mobile radio systems evolve and become more integrated with daily activities, there is an increasing requirement for services requiring very high bit rates and higher system capacity for such services. These include services to individuals as well as multimedia broadcast services. OFDM (Orthogonal Frequency Division Multiplexing) is one of the technologies that are proving themselves well suited to mobile radio access for high rate and multimedia services (i.e. DAB, DVB-T, 802.11a). Given the availability of this radio technology, its applicability to UTRAN and its potential to enhance UTRAN should be studied.

4 Objective

The objective of this Study Item is to study the applicability of OFDM in UTRAN and its potential to enhance UTRAN.

It should be possible to use OFDM in a 5MHz spectrum allocation. As a starting point , OFDM will be considered in the downlink only.
The use of OFDM should have minimal impact on the signalling as well as physical layer, changes be limited to those needed to support a new modulation in UTRAN.

The following list provides examples of areas that may be considered in the study:

- Throughput for data services. To be compared with throughput of current UTRAN releases
- Complexity aspects of multimode UEs supporting both OFDM and Release 99/Release 5 UMTS

Deployment scenarios, including frequency reuse aspects, within diverse spectrum allocations

The study should consider performance aspects, aspects linked to the evolution of UMTS (high level architecture, diverse spectrum arrangements and allocations), impact on signalling in UTRAN,

aspects of capacity/cost/complexity/ coverage and aspects of co-existence with the existing UTRAN releases.

The output of the study item will be a Technical Report containing an analysis of the feasibility of introducing OFDM in UTRAN and a comparison of OFDM performance with HSDPA. The analysis of OFDM performance, and its comparison with reference HSDPA performance, should be based on a basic OFDM design (referred often as textbook OFDM). Consideration of more elaborate OFDM techniques (MIMO, advanced OFDM modulations, etc) should not be considered and may be subject to later consideration.

5 Service Aspects

No

6 MMI-Aspects

No

7 Charging Aspects

No

8 Security Aspects

No

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 25.892	Feasibility study for Orthogonal Frequency Division Multiplexing (OFDM) for UTRAN enhancement	RAN1	RAN 4	RAN 23	RAN 24	

11 Work item raporteurs

Sarah Boumendil (Nortel Networks)

12 Work item leadership

RAN WG1

13 Supporting Companies

TSG RAN
(Nortel Networks, Wavecom, France Telecom, Alcatel, Philips, Samsung)

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

20 UTRA Wideband Distribution Subsystems (WDS)

Originally in RP-010488
The Study was closed in TSG RAN #24 June 2004 due to the lack of progress

Study Item Description

Title: Feasibility Study on UTRA Wideband Distribution Subsystems (WDS)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

This study item shall assess the feasibility for a new class of equipment that would allow for improved flexibility of radio access network solutions; this is here called *Wideband Distribution Subsystem, or WDS* – and includes a generic interface to the UTRA FDD Node B. TDD applicability is possible and will also be considered as part of the feasibility study.
WDS are a capable of flexible remoting of multiple Node B's RF interface, on a possible multi-operator, multi-vendor scenario, both for indoor and outdoor applications while granting substantially compliant Node B performance.

In many cases existing 2G WDS were accepted for network integration under Operator's direct responsibility, as existing specifications were not addressable for clearly and neatly defining equipment reference specification and network integration techniques, with even more severe issues in case of a multi-operator application scenario.

4 Objective

The feasibility study should identify the WDS' requirements for interfacing to Node B and demonstrate that WDS doesn't impact negatively into radio network performances on a multioperator environment. Therefore it shall include a study on WDS RF multicarrier performances, e.g.:

Linearity
Transparency
Inter-operator Power Control and RF transmit power behaviour
Transmit characteristics
Receive characteristics

These characteristics will be identified while considering WDS as ancillary equipment on a multi-vendor Node B scenario. TDD applicability shall also be investigated and clarified.

End-to-end system performance shall also be studied to identify the application scenario for WDS. Additionally the study shall identify the requirements and the impact for a communication interface (e.g. for O&M purposes) between WDS and other network elements. RAN WG3 and SA WG5 will be involved for evaluation of any impact in O&M aspects.
Submission of initial results is planned for RAN4 #18.

5 Service Aspects

There could be service aspects to be considered, e.g. impact on LCS. The Feasibility Study should clarify this aspect.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		O&M
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.867		WG4				TR on feasibility for WDS

11 Work item rapporteurs

Andrea Casini (Tekmar Sistemi)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the SI

	Building Block (go to 14b)

14b The SI is a Building Block: parent Feature is Radio Interface Improvement Feature

21 Radio link performance enhancements

Last distributed as: RP-010914 (originally RP-000181rev4). Finished at TSG RAN #25 (September 2004).

Study Item Description

Title: Radio link performance enhancements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

After completition of Release –99, possible topics have been identified that could improve the radio link performance. In order to improve the performance it is felt necessary to continue related studies after Release –99 completition and to include possible agreed improvements to the coming UTRA releases.

4 Objective

- The purpose of this study item is to study the radio link performance enhancements for both UTRA FDD and TDD. This is a permanent study item to be repeated for every UTRA Release.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects	USIM	ME	AN	CN	Others

:					
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be defined on a per work task basis)
This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.899	HSDPA enhancements	WG1			RAN#24	

11 Work item raporteurs

Antti Toskala, Nokia Networks

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the SI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The SI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The SI is a Building Block: parent Feature

This is a building block part of the radio interface improvement feature.

14c The SI is a Work Task: parent Building Block

(one Work Item identified as a building block)

22 Analysis of higher chip rates for UTRA TDD evolution

Distributed as RP-020673, finished at TSG RAN#25 (September 2004)

Study Item Description

Title: Feasibility Study for the analysis of higher chip rates for UTRA TDD evolution

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked study items

"Feasibility Study considering the viable deployment of UTRA in additional and diverse spectrum arrangements"

3 Justification

In the early standardisation of 3GPP several different chip rates were considered. These included multiples of the basic chip rate 1x, 2x and 4x or approximately 4Mcps, 8Mcps and 16Mcps. The limited amount of spectrum available in the core UMTS bands forced a choice of the lowest chip rate which ultimately became 3.84Mcps. However it was the assumption that higher chip rates would not be precluded from future releases and indeed the statement "The information presented in this section is based on a chip rate of 3.84 Mcps. NOTE: Other chip rates may be considered in future releases" is included in Section 5.1 under *Frequency bands and channel arrangement* of all Node B and UE specifications in Release 99 (25.101, 25.102, 25.104 and 25.105).

Therefore, with the imminent allocation of considerably more spectrum for 3G in bands other than the current IMT-2000 band in which systems are currently being deployed, and the demand for higher burst rates and sector throughputs for data traffic in the wide area, there is a necessity to re-examine the benefits and consequences of these higher chip rates for the 3GPP standards in this newer spectrum.

4 Objective

The study will consider higher chip rates, such as 2x the standard chip rate, 7.68Mcps.

There is an increasing requirement for additional services requiring very high bit
Rates. The potential added value of introducing higher chip rate UTRA TDD should be investigated.
The following list provides examples of areas that may be considered in the study:

- Throughput for data services. To be compared with throughput of current UTRAN releases
- Support for personal, multimedia and broadcast services
- Deployment scenarios within diverse spectrum allocations

- Implementation complexity for NodeB and UE

The study should consider performance aspects, aspects linked to the evolution of UMTS (high level architecture, diverse spectrum arrangements and allocations), impact on signalling in UTRAN, aspects of capacity/cost/complexity/ coverage and aspects of co-existence with the existing UTRAN releases.

The output of the study item will be a Technical Report containing an analysis of the feasibility and potential benefits of introducing higher chip rate UTRA TDD in UTRAN, and a recommendation to RAN Plenary on a potential work item time-frame and work plan.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR25.895		WG1	WG4	RAN#19	RAN#25	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Tim Wilkinson (IPWireless)

12 Work item leadership

WG1

13 Supporting Companies

TSG RAN
(IPWireless Inc, Cingular Wireless LLC, Cisco Systems Europe, Vodafone Group)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

23 Evolution of UTRAN Architecture

Closed at TSG RAN #26 (December 2004) without conclusion, work will carry on under the study on Evolved UTRA and UTRAN.

Study Item Description

Title: Feasibility Study on the Evolution of UTRAN Architecture

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work/study items

None

3 Justification

The first step of UTRAN architecture evolution was the introduction of the IP transport in Rel-5. The next step is to study the architecture evolution for UTRAN that could lead to better transport layer utilization. The study could for example consider new of distribution of some RAN functionalities e.g. Node Bs would contain more control operation. Also potential benefits for the radio capacity may be achieved from the proposed methods due e.g. reduced delay.

4 Objective

The objective of this study item is to study UTRAN architecture evolution considering a new functional split berween the nodes. It should be possible to introduce this evolved architecture together with the existing Release'99 based network elements. The study item should consider also impacts on the existing UTRAN interfaces and co-existence with the existing UTRAN architecture as well as potential benefits for the system performance, deployment and radio interface evolution.

The study item includes study on new distribution of some RAN functionalities between existing nodes e.g. between Node Bs and RNCs.

The new architecture to be considered shall be such there is no UE impacts i.e. support R99 and later radio interface.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None/

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X			X
Don't know				X	

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	Distributed RAN architecture	R3				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401				

11 Study item raporteurs

Woonhee Hwang, Nokia.

12 Study item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
(Nokia, H3G, NEC, T-Mobil, Sonera, mmO2, Siemens)

14 Classification of the SI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14 The SI is a Work Task: parent Building Block

UTRAN Improvement Feature

24 Uplink Enhancements for UTRA TDD

Approved at TSG RAN #20 as RP-030359.
Completed at TSG RAN#27 (March 2005), last status report in RP-050019

Study Item Description

Title: Feasibility Study on Uplink Enhancements for UTRA TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

With the growth in IP based services, there is a burgeoning requirement for increasing the coverage and throughput and reducing the delay of the uplink. Applications that could benefit from an enhanced uplink include web browsing, video clips, multimedia messaging and other IP based applications. This study item proposes to investigate enhancements that can be applied to UTRA in order to improve the performance for uplink dedicated and shared transport channels.

4 Objective

It is proposed that the study should include, but not be restricted to the following topics related to uplink enhancements for UTRA TDD to enhance uplink performance in general or to enhance the uplink performance for background, interactive and streaming based traffic:

- Adaptive modulation and coding
- Hybrid ARQ
- Node B controlled scheduling
- Fast allocation of dedicated and/or shared resources
- Enhancements to uplink dedicated channels
- Enhancements to uplink shared channels
- Physical layer and higher layer signalling mechanisms to support the enhancements

5 Service Aspects

None – better support of existing services

6 MMI-Aspects

None

7 Charging Aspects

None – uses existing charging schemes

8 Security Aspects

None

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 25.804	TDD Uplink enhancements	R1	R2,R3,R4		RAN#27	New study item

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

The technical report should present the results of the study and make a recommendation for which techniques should be incorporated into current and future releases of the standard. The report should also detail the work items descriptions necessary to continue this work.

11 Work item rapporteurs

[TBA]

12 Work item leadership

RAN WG1

13 Supporting Companies

TSG RAN (IPWireless, InterDigital, Alcatel, Samsung, **3)**

14 Classification of the WI (if known)

TSG RAN Study Item

3GPP TSG RAN Meeting #28 **RP-050378**
Quebec, Canada, 1 - 3 June 2005

Title: **3GPP TSG RAN Work Item Description Sheets after meeting #27 Concluded WIs**

Source: **3GPP support**

31/3/2005

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Contents

1 Introduction

This document contains Work Item sheets in TSG RAN for all approved Work Items that have been finished. The WI sheets of the approved and finished Study Items are provided in a separate document, RAN_Study_Items_History. The SI sheets for active WIs can be found in the document RAN_Work_Items.

The following Rel-6 Work Items were completed at TSG RAN #27, the WIDSs are included in this document for the first time:

- **Performance Requirements of Receive Diversity for HSDPA**
- **Optimisation of downlink channelisation code utilisation**
- **Optimisation of downlink channelisation code utilisation for 3.84 Mcps TDD**
- **FDD Enhanced Uplink**
  - **FDD Enhanced Uplink - Physical Layer**
  - **FDD Enhanced Uplink - Layer 2 and 3 Protocol Aspects**
  - **FDD Enhanced Uplink - UTRAN Iub/Iur Protocol Aspects**
  - FDD Enhanced Uplink - RF is not finished, due for June 2005. The WIDS is in RAN_Work_Items

The following table lists all TSG RAN Work Items included in Release 4 under their parent Feature and the group that led the work:

Type	Rel-4 WI name	WI Acronym	Leading Group	Section in this document
Feat	**Transcoder-Free Operation**	TrFO	CN4	2.2
BB	OoBTC Solution	TRFO-OOBTC	CN4	2.2.1
WT	Implementation in UTRAN	TRFO-OOBTC-UTRAN	RAN3	2.2.1.1
Feat	**Low Chip Rate TDD option**	LCRTDD	RAN1	2.1
BB	Physical layer	LCRTDD-Phys	RAN1	2.1.1
BB	Layer 2 and layer 3 protocol aspects	LCRTDD-L23	RAN2	2.1.2
BB	UE radio access capability	LCRTDD-UErac	RAN2	2.1.3
BB	Iub/Iur protocol aspects	LCRTDD-Iublur	RAN3	2.1.4
BB	RF radio transmission/reception, system performance requirements and conformance testing	LCRTDD-RF	RAN4	2.1.5
Feat	**UMTS QoS Architecture for PS Domain**	QoSPS	SA2	2.3
BB	RAB Quality of Service (re)Negotiation over Iu	QoSPS-MAPEND-RABQoS	RAN3	2.3.1
WT	RAB Quality of Service Negotiation over Iu	QoSPS-MAPEND-RABQoS-Negot	RAN3	2.3.1.1
WT	RAB Quality of Service Negotiation over Iu during relocation	QoSPS-MAPEND-RABQoS-NegotReloc	RAN3	2.3.1.3
WT	RAB Quality of Service Re-Negotiation over Iu	QoSPS-MAPEND-RABQoS-ReNegot	RAN3	2.3.1.2
Feat	**Rel-4 Evolutions of the transport in the UTRAN**	ETRAN	TSG RAN	2.4
BB	QoS optimisation for AAL2 connections over Iub and Iur interfaces	ETRAN-QoSAAL2	RAN3	2.4.1
BB	Transport bearer modification procedure on Iub, Iur, and Iu	ETRAN-MigrMod	RAN3	2.4.2
Feat	**Rel-4 Improvements of Radio Interface**	RInImp	TSG RAN	2.5
BB	UTRA repeater specification (master)	RInImp-REP	RAN4	2.5.1
BB	DSCH power control improvement in soft handover	RInImp-DSCHsho	RAN1	2.5.2
BB	UMTS 1900	RInImp-UMTS19	RAN4	2.5.3
Feat	**Rel-4 RAN improvements**	RANimp	TSG RAN	2.6
BB	RAB support enhancement for Rel-4	RANimp-RABSE	RAN2	2.6.1

Type	Rel-4 WI name	WI Acronym	Leading Group	Section in this document
BB	Node B synchronisation for TDD	RANimp-NBsync	RAN1	2.6.2
Feat	**Rel-4 Location Services enhancements**	LCS1	SA2	2.7
BB	UE positioning Rel-4	LCS1-UEpos	TSG RAN	2.7.1
WT	Iub/Iur interfaces for methods Rel 99	LCS1-UEpos-IubIur	RAN3	2.7.1.1
WT	UE positioning enhancements - IPDL for TDD	LCS1-UEpos-enh	RAN2	2.7.1.2

The following table lists all TSG RAN Work Items included in Release 5 under their parent Feature and the group that led the work:

Type	Rel-5 WI name	WI Acronym	Leading Group	Section in this document
Feat	**Rel-5 Evolution of the transport in the UTRAN**	ETRAN	TSG RAN	3.2
BB	IP transport in the UTRAN	ETRAN-IPtrans	RAN3	3.2.1
Feat	**High Speed Downlink Packet Access**	HSDPA	RAN2	3.1
BB	Physical Layer	HSDPA-Phys	RAN1	3.1.1
BB	Layer 2 and 3 aspects	HSDPA-L23	RAN2	3.1.2
BB	Iub/Iur protocol aspects	HSDPA-IubIur	RAN3	3.1.3
BB	RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing	HSDPA-RF	RAN4	3.1.4
Feat	**Rel-5 Improvements of Radio Interface**	RInImp	TSG RAN	3.3
BB	Base station classification	RInImp-BSClass	RAN4	3.3.1
WT	TDD Base station classification	RInImp-BSClass-TDD	RAN4	3.3.1.1
WT	Base Station Classification for 1.28 Mcps TDD option	RInImp-BSClass-LCRTDD	RAN4	3.3.1.2
BB	Enhancement on the DSCH hard split mode	RInImp-DSCHhsp	RAN1	3.3.2
BB	UMTS1800	RInImp-UMTS18	RAN4	3.3.3
Feat	**Rel-5 RAN improvements**	RANimp	TSG RAN	3.4
BB	RRM optimization for Iur and Iub	RANimp-RRMopt	RAN3	3.4.1
WT	Iur common transport channel efficiency optimisation	RANimp-RRMopt-ctc	RAN3	3.4.1.1
WT	Iur neighbouring cell reporting efficiency optimisation	RANimp-RRMopt-ncr	RAN3	3.4.1.2
BB	RL Timing Adjustment	RANimp-RLTA	RAN3	3.4.1.3
BB	Separation of resource reservation and radio link activation	RANimp-SepRR	RAN3	3.4.1.4
BB	Re-arrangements of Iub transport bearers	RANimp-TTPS	RAN3	3.4.2
BB	RAB support enhancement for Rel-5	RANimp-RABSE5	RAN2	3.4.3
BB	Beamforming requirements for UE	RANimp-BFR-UE	RAN1	3.4.4
BB	Support of Site Selection Diversity Transmission in UTRAN	RANimp-SSDT	RAN1	3.4.5
BB	Node B Synchronisation for 1.28 Mcps TDD	RANimp-NBSLCR	RAN1	3.4.6
BB	UTRAN sharing in connected Mode	NETSHARE	RAN3	3.4.7
Feat	**Rel-5 Location Services enhancements**	LCS1	SA2	3.5
BB	UE positioning	LCS1-UEpos	TSG RAN	3.5.1
WT	UE positioning enhancements for 1.28 Mcps TDD	LCS-128Pos	RAN2	3.5.1.1
WT	Open SMLC-SRNC Interface within the UTRAN to support A-GPS Positioning	LCS-INTF	RAN2	3.5.1.2
Feat	**Intra Domain Connection of RAN Nodes to Multiple CN Nodes**	IUFLEX	SA2	3.6
BB	Stage 3: RAN node selecting CN node	IUFLEX	RAN3	3.6.1

The following table lists all Rel-6 TSG RAN Work Items finished so far, under their parent Feature and the group that led the work:

Type	Rel-6 WI name	WI Acronym	Leading Group	Section in this document
Feat	**Rel-6 Improvements of Radio Interface**	RInImp	TSG RAN	4.1
BB	Base station classification	RInImp-BSClass	RAN4	4.1.1
WT	FDD BS Classification	RInImp-BSClass-FDD	RAN4	4.1.1.1

Type	Rel-6 WI name	WI Acronym	Leading Group	Section in this document
BB	Improving Receiver Performance Requirements for the FDD UE	RInImp -UERecPerf	RAN4	4.1.2
BB	UMTS-850	RInImp-UMTS850	RAN4	4.1.3
BB	DS-CDMA introduction in the 800 MHz band	RInImp-UMTS800	RAN4	4.1.4
BB	UMTS 1.7/2.1 GHz	RInImp-UMTS1721	RAN4	4.1.5
BB	Improved Receiver Performance Requirements for HSDPA	RInImp-HSPerf	RAN4	4.1.6
WT	Performance Requirements of Receive Diversity for HSDPA	RInImp-HSPerf-RxDiv	RAN4	4.1.6.1
Feat	**Location Services enhancements 2 (Rel-6)**	LCS2	SA2	4.2
BB	UE positioning	LCS2-UEpos	TSG RAN	4.2.1
WT	Open interface between the SMLC and the SRNC within the UTRAN to support Rel-4 positioning methods	LCS-Rel4Pos	RAN2	4.2.1.1
WT	A-GPS minimum performance specification	LCS-UEPos-AGPSPerf	RAN4	4.2.1.2
Feat	**Rel-6 RAN improvements**	RANImp	TSG RAN	4.3
BB	Beamforming Enhancements	RANimp-BFE	RAN1	4.3.1
BB	Rel6 RRM optimization for Iur and Iub	RANimp-RRMopt	RAN3	4.3.2
WT	Improved access to User Equipment (UE) measurement data for Controlling Radio Network Controller (CRNC) to support Time Division Duplex (TDD) Radio Resource Management (RRM)	RANimp-RRMopt-UEMsD	RAN3	4.3.2.1
BB	Network Assisted Cell Change (NACC) from UTRAN to GERAN - network-side aspects	RANimp-NACC	RAN3	4.3.3
BB	Remote Control of Electrical Tilting Antennas	RANimp-TiltAnt	RAN3	4.3.4
WT	Tilting Antenna - RAN aspects	RANimp-TiltAnt	RAN3	4.3.4
WT	OAM&P impacts	RANimp-TiltAnt-OAM	SA5	4.3.4
BB	RAB support enhancement	RANimp-RABSE	RAN2	4.3.5
WT	HS-DPCCH ACK/NACK Enhancement	RANimp-RABSE-ACKNACK	RAN1	4.3.5.1
WT	Optimisation of downlink channelisation code utilisation	RANimp-RABSE-CodeOptFDD	RAN1	4.3.5.2
WT	Optimisation of channelisation code utilisation for 3.84 Mcps TDD	RANimp-RABSE-CodOptTDD	RAN1	4.3.5.3
Feat	**Operations, Administration, Maintenance & Provisioning - OAM&P**	OAM	SA5	4.4
BB	Trace Management	OAM-Trace	SA5	4.4.1
WT	Subscriber and equipment trace in UTRAN	OAM-Trace-RAN	RAN3	4.4.1
Feat	**Multimedia Broadcast and Multicast Service**	MBMS	SA1	4.5
BB	Introduction of MBMS in RAN	MBMS-RAN	RAN2	4.5.1
WT	Introduction of MBMS in RAN (physical & upper layers, access network interfaces)	MBMS-RAN	RAN2	4.5.1
Feat	**Network Sharing**	NTShar	SA1	4.6
BB	Enhancement of the support of network sharing in the UTRAN	NTShar-UTRANEnh	RAN2	4.6.1
Feat	**FDD Enhanced Uplink**	EDCH	RAN	4.7
BB	FDD Enhanced Uplink - Stage 2	EDCH-Stage2	RAN2	4.7
BB	FDD Enhanced Uplink - Physical Layer	EDCH-Phys	RAN1	4.7.1
BB	FDD Enhanced Uplink - Layer 2 and 3 Protocol Aspects	EDCH-L23	RAN2	4.7.2
BB	FDD Enhanced Uplink - UTRAN Iub/Iur Protocol Aspects	EDCH-IurIub	RAN3	4.7.3

2 Release 4

2.1 Low chip rate TDD option

Originally RP-000191

Work Item Description

Title: Low chip rate TDD option

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low Chip Rate TDD Physical Layer
Low chip rate TDD layer 2 and layer 3 protocol aspects
Low Chip Rate TDD RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing
Low Chip Rate TDD UE radio access Capability
Low chip rate TDD UTRAN network Iub/Iur protocol aspects

3 Justification

The integration of TDD low chip rate option in Release 2000 is discussed and approved in RAN#6. This paper is to describe the work plan of the integration for low chip rate TDD in R00.

4 Objective

The technical objective of this work item is the integration of the low chiprate TDD functionality in UTRA TDD, in line with decisions at RAN#6.

- For physical layer, the features include:
  - The frame structure and the burst structure
  - Channel description and mapping
  - Modulation and spreading
  - Channel coding and multiplexing
  - Physical layer procedures
  - Measurements by physical layer

- For higher layers:
  The work will focus on adding extensions and Add-Ons for low chip rate support.

- For Iur/Iub interface:

For the adoption of some new features, e.g. the smart antenna, baton hand-over, some additional messages in Iur and Iub interface signalling for low chip rate TDD option should be taken into consideration.

– For radio transmission and reception:
  – The system performance requirements supporting low chip rate services
  – The Rx characteristics requirement
  – The Transmitter characteristics requirement
  – The frequency bands and channel arrangements

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments

The expected finalisation date is TSG-RAN #11

11 Work item raporteurs

Mr. Guiliang Yang (CATT/CWTS)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
The building blocks should be discussed and approved via email discussion

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.1.1 Low chip rate TDD physical layer

Originally RP-000311

Work Item Description

Title: Low chip rate TDD physical layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low Chip Rate TDD UE radio access capabilities
Low chip rate TDD Layer 2 and Layer 3 protocol aspects
Low chip rate TDD Iub/Iur protocol aspects
Smart Antenna
Low chip rate TDD RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing
Low Chip Rate TDD Inter-working with GERAN

3 Justification

For the low chip rate TDD, it has commonalties but also difference on physical layer with the high chip rate TDD option e.g. chip rate, frame structure, burst structure, some physical layer procedures etc. This paper is to describe one of the low chip rate TDD building blocks –physical layer.

4 Objective

The technical objective of this work item is to clarify the integration work to be done for the physical layer. And this work will affect the specifications for working group on physical layer. The integration work for low chip rate TDD with its properties should maximize the commonality with high chip rate TDD options.

- For physical layer, it includes the following work tasks:
  - Physical Channels and Mapping of Transport Channels onto Physical Channels
  - Multiplexing and Channel Coding
  - Modulation and spreading
  - Physical layer procedures
  - Physical Layer Measurements

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.928	Low Chip Rate TDD Physical Layer	WG1		RAN #10	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.201		Physical layer – General description	RAN#11	
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)	RAN#11	
25.222		Multiplexing and channel coding (TDD)	RAN#11	
25.223		Spreading and modulation (TDD)	RAN#11	
25.224		TDD; physical layer procedures	RAN#11	
25.225		Physical layer; measurements	RAN#11	
25.302		Services Provided by the physical layer	RAN#11	
25.944		Channel coding and multiplexing examples	RAN#11	

11 Work item raporteurs

Mr. Guiliang Yang (CATT/CWTS)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies
TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

Low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.1.2 Low chip rate TDD layer 2 and layer 3 protocol aspects

Originally RP-000312

Work Item Description

Title: Low chip rate TDD layer 2 and layer 3 protocol aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low Chip Rate TDD physical layer
Low chip rate TDD Iub/Iur protocol aspects
Smart Antenna
Low chip rate TDD RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing
Low Chip Rate TDD Inter-working with GERAN
Low chip rate TDD UE radio access capabilities

3 Justification

Although most of the L2/L3 features are common with high chip rate TDD option , there are some differences ,e.g. modification of signalling, baton handover etc., which should be described and clarified. Basically, most of them were originated from the differences of physical layer between low chip rate TDD and UTRA TDD and the involvement of Smart Antenna. This paper is to describe one of the low chip rate TDD building blocks – layer 2 and layer 3 protocol aspects.

4 Objective

The technical objective of this work item is to complete the low chip rate TDD L2/L3 functionality adaptation in UTRA TDD. And this work will affect the specifications for working group on L2/L3. The integration work for low chip rate TDD with its properties should follow the principle to maximize the commonality with high chip rate TDD.

- For layer 2 and layer 3 protocol aspects, it includes the following work tasks:
  - UE procedures in idle mode
  - Interlayer procedures in connected mode
  - Control plane protocol aspects
  - User plane protocol aspects
  - mobility aspects

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.834	Low chip rate TDD layer 2 and layer 3 protocol aspects	WG2		RAN #11	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.301		Radio interface protocol architecture	RAN#11	
25.302		Service provided by the physical Layer	RAN#11	
25.303		UE functions and Inter-layer procedures in connected mode	RAN#11	
25.304		UE procedures in idle mode and procedures for cell reselection in connected mode	RAN#11	
25.305		Stage 2 functional specification of location service in UTRAN (LCS)	RAN#11	
25.321		Medium access control (MAC) protocol specification	RAN#11	
25.322		Radio link control(RLC) protocol specification	RAN#11	
25.331		Radio resource control (RRC) protocol specification	RAN#11	
25.324		Radio Interface for Broadcast/Multicast Services	RAN#11	

25.925		Radio Interface for Broadcast/Multicast Services	RAN#11	
25.922		Radio Resource Management Strategies	RAN#11	

11 Work item raporteurs

Mr. Yanhui LIU (CATT/CWTS)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

14b The WI is a Building Block: parent Feature

low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.1.3 Low Chip Rate TDD UE radio access Capability

Originally RP-000315

Work Item Description

Title: Low chip rate TDD UE radio access capability

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low Chip Rate TDD physical layer
Low chip rate TDD Layer 2 and Layer 3 protocol aspectsLow chip rate TDD Iub/Iur protocol aspects
Smart Antenna
Low chip rate TDD RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing
Low Chip Rate TDD Inter-working with GERAN

3 Justification

For the low chip rate TDD, it has commonalties but also difference on radio access capabilities with the high chip rate TDD option e.g. usage of timeslots for different UE classes, usage of USCH /DSCH, etc. This paper is to describe one of the low chip rate TDD building block – UE radio access capabilities.

4 Objective

The technical objective of this work item is complete the UE radio access capabilities. And this work will affect the specifications for working group on UE radio access capability.

– For UE radio access capability, it includes the following work tasks:
  – Definition of UE radio access capabilities for low chip rate option

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.926		UE Radio Access Capabilities	RAN #11	

11 Work item raporteurs

Mr. Yanhui LIU (CATT/CWTS)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies
TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

Low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.1.4 Low chip rate TDD UTRAN network Iub/Iur protocol aspects

Originally RP-000316

Work Item Description

Title: Low chip rate TDD Iub/Iur protocol aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low Chip Rate TDD physical layer
Low chip rate TDD layer2 and layer3 protocol aspects
Smart Antenna
Low chip rate TDD RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing
Low chip rate TDD UE radio access capabilities
Low Chip Rate TDD Inter-working with GERAN

3 Justification

In Iub and Iur interfaces, especially, low chip rate TDD will result in adaptations of Information Elements in radio link related signaling, to support the changed physical channel parameters. In addition, low chip rate TDD should define some procedures which are different from those of high chip rate TDD such as uplink synchronisation. This paper is to describe one of the low chip rate TDD building blocks – Low chip rate TDD Iub/Iur protocol aspects

4 Objective

The integration work for low chip rate TDD with its properties should follow the principle to maximize the commonality with high chip rate TDD.

- For Low chip rate TDD Iub/Iur protocolaspects, it includes the following work tasks:
  - Iub aspects
  - Iur aspects

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.937	TR on Low chip rate TDD Iub/Iur protocol aspects	WG3		RAN #11	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401	23	UTRAN Overall Description	RAN#11	
25.402	14	Synchronisation in UTRAN Stage 2	RAN#11	
25.433	358, 359	UTRAN Iub Interface NBAP Signalling	RAN#11	
25.423	309	UTRAN Iur Interface RNSAP Signalling	RAN#11	
25.425	23	UTRAN Iur Interface User Plane Protocols for Common Transport Channel data streams	RAN#11	
25.427	42	UTRAN Iub/Iur Interface User Plane Protocols for DCH data streams	RAN#11	
25.430	14	UTRAN I_{ub} Interface: General Aspects and Principles	RAN#11	
25.435	37	UTRAN Iub Interface User Plane Protocols for Common Transport Channel data streams	RAN#11	

11 Work item raporteurs

Mr. Bing Xu (CATT/CWTS)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.1.5 Low Chip Rate TDD RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

Originally RP-000313

Work Item Description

Title: RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Low chip Rate TDD physical layer
Low Chip Rate TDD UE radio access capabilities
Low chip rate TDD Layer 2 and Layer 3 protocol aspects
Low chip rate TDD Iub/Iur protocol aspects
Low Chip Rate TDD Inter-working with GERAN
Smart Antenna

3 Justification

For the low chip rate TDD, due to the difference on chip rate, the parameters for RF are affected like e.g. operation band width, mask, out of band emission, blocking, etc. This paper is to describe one of the low chip rate TDD building blocks - RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing.

4 Objective

The technical objective of this work item is the description of the low chiprate TDD RF characters, the system performance requirements and conformance testing. And this work will affect the specifications for working group on RF character and other working group related to the system performance and conformance testing and the work on UE radio access capability.

- As a building block, it includes the following work task:
- UE radio transmission and reception
- BTS radio transmission and reception
- BTS Conformance testing
- BTS Electromagnetic compatibility
- Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.945		WG4		RAN #10	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.102		UE Radio Transmossion and Reception (TDD)	RAN#11	
25.105		BTS Radio Transmission and Reception (TDD)	RAN#11	
25.123		Requirements for support of Radio Resource Management (TDD)	RAN#11	
25.142		Base station conformance testing(TDD)	RAN#11	
25.942		RF system scenarios	RAN#11	
25.113		Base station EMC	RAN#11	
25.133		Requirements for support of Radio Resource Management (FDD)	RAN#11	

11 Work item raporteurs

Mr. Daijun Zhang (CATT/CWTS)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies
TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

Low chip rate TDD

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.2 Transcoder Free Operation

This was a Feature led by CN WG4.

2.2.1 Out of band Transcoder Control

Building block led by CN WG4

2.2.1.1 Transcoder Free Operations in UTRAN

Originally RP-000507

Work Item Description

Title: Transcoder Free Operations in UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Out of band Transcoder Control (CN Work Item)

3 Justification

This WI is the complementary part of the WI that has been agreed for TSG CN. It shall provide more details for the Radio Access Network standardisation that is required for the Transcoder Free Operation.

4 Objective

- *The number of transcoders to be installed in the core network can be minimised.*
- *The bandwidth to be provided in the core network may be reduced by TrFO or transcoder at the core network edge for both MS to MS calls and for MS from/to wireline calls.*

5 Service Aspects

The service aspects for Transcoder Free Operation are:

- *Usage of the framing protocol as defined in TS 25.415 in the Core Network needs to be supported*
- *Symmetrical set of RFCIs needs to be supported*
- *The behaviour of an RNC for receiving RFCIs at Iu UP initialisation from the core network shall be changed to be applied for both uplink and downlink.*
- *The mechanism to make the RFCIs available during TrFO Break needs to be supported (storage of RFCIs)*
- *Specific adaptations of the inband rate control procedure needs to be performed ("distributed – ", "maximum – ", and "immediate rate control")*
- *RNC behaviour on a RAB Assignment Request needs to be adopted for TrFO calls.*
- *25.415 should in principle define the IuUP framing protocol in a way, that it covers its applicability for the Nb interface as well. This needs to be confirmed and co-ordinated with CN3.*

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			
Don't know					X

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
23.153	Out of Band Transcoder Control - Stage 2	CN4	RAN3	TSG-CN#7	TSG-CN#10	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.401			TSG-RAN#11	
TS 25.410			TSG-RAN#11	
TS 25.413		see “Service Aspects”	TSG-RAN#11	
TS 25.415		see “Service Aspects”	TSG-RAN#11	

11 Work item rapporteurs

Siemens, Alexander Vesely (alexander.vesely@siemens.at)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

Out of Band Transcoder Control

2.3 UMTS QoS Architecture for PS Domain

This was a feature led by SA WG2.

2.3.1 RAB Quality of Service Negotiation/Renegotiation over Iu

Originally RP-000137, major revision RP-000498, part of it included in WI "RAB Quality of Service Negotiation over Iu" (see section 4.1.1 below)

Work Item Description

Title: RAB Quality of Service Negotiation/Renegotiation over Iu

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

In release 99, UTRAN can only accept or reject a radio access bearer request from the core network. For services that could accept looser QoS requirements than those requested by the CN in the RAB establishment request there exist no means for UTRAN to propose alternative (looser) QoS. For such services the RAB establishment will fail, or alternatively the CN could re-attempt the RAB reestablishment with looser QoS requirements which would significantly increase the setup time.

Release 99 also does not allow the UTRAN to renegotiate RAB/QoS parameters for on-going calls/session. Since the UTRAN is responsible for managing the radio resources, it is necessary for the UTRAN to be able to initiate RAB renegotiation for efficient use of the radio interface.

4 Objective

This work item should enhance the Radio Access Bearer setup to something more sophisticated using e.g. QoS profiles to align with the already existing CN solution used in GPRS. However, it should be as simple as possible.

This work item should also enhance the management of Radio Access Bearers for on-going calls/session so that QoS parameters can be renegotiated by the UTRAN.

5 Service Aspects

The intention with the work item is to reduce the setup time of services.

The intention is also to allow continuation of service through UTRAN initiated QoS renegotiation.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413			RAN #11	
23.060				
24.008				

11 Work item raporteurs

Anders Molander, Ericsson

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)

X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

UMTS QoS Architecture for PS Domain

2.3.1.1 RAB Quality of Service Negotiation over Iu

Originally partly in RP-000137, revised in RP-000499

Work Item Description

Title: RAB Quality of Service Negotiation over Iu

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

In release 99, UTRAN can only accept or reject a radio access bearer request from the core network. For services that could accept looser QoS requirements than those requested by the CN in the RAB establishment request there exist no means for UTRAN to propose alternative (looser) QoS. For such services the RAB establishment will fail, or alternatively the CN could re-attempt the RAB reestablishment with looser QoS requirements which would significantly increase the setup time.

4 Objective

This work item should enhance the Radio Access Bearer setup to something more sophisticated using e.g. QoS profiles to align with the already existing CN solution used in GPRS. However, it should be as simple as possible.

5 Service Aspects

The intention with the work item is to reduce the setup time of services.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects	USIM	ME	AN	CN	Others

:					
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413			RAN #11	
23.060				
24.008				

11 Work item raporteurs

Anders Molander, Ericsson

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

RAB Quality of Service Negotiation/Renegotiation over Iu

2.3.1.2 RAB Quality of Service Renegotiation over Iu

Originally RP-000500

Work Item Description

Title: RAB Quality of Service Renegotiation over Iu

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

Release 99 also does not allow the UTRAN to renegotiate RAB/QoS parameters for on-going calls/session. Since the UTRAN is responsible for managing the radio resources, it is necessary for the UTRAN to be able to initiate RAB renegotiation for efficient use of the radio interface.

4 Objective

This work item should also enhance the management of Radio Access Bearers for on-going calls/session so that QoS parameters can be renegotiated by the UTRAN.

5 Service Aspects

The intention is also to allow continuation of service through UTRAN initiated QoS renegotiation.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X

Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413			RAN #11	
23.060				
24.008				

11 Work item raporteurs

Sania Irwin, Motorola

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

RAB Quality of Service Negotiation/Renegotiation over Iu

2.3.1.3 RAB Quality of Service Negotiation over Iu during relocation

Last distributed as: RP-010168

Work Item Description

Title: RAB Quality of Service Negotiation over Iu during relocation

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

In release 99, for services that could accept looser QoS requirements than those requested by the CN in the relocation request, there exist no means for UTRAN to propose alternative (looser) QoS. For such services the relocation will fail.

4 Objective

This work item should enhance the relocation so that QoS parameters can be negotiated by the UTRAN during relocation. However, it should be as simple as possible.

5 Service Aspects

The intention of the work item is to allow continuation of service during relocation

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects	USIM	ME	AN	CN	Others

:					
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413			RAN #11	
23.060				
24.008				

11 Work item raporteurs

Chenghock Ng, NEC

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

NEC, Siemens, Motorola, Telecom Italia, Alcatel

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

RAB Quality of Service Negotiation/Renegotiation over Iu

2.3.2 PS-Domain handover for real-time services

Originally RP-000127

Work Item Description

Title: PS-Domain handover for real-time services

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

(list of linked WIs)

3 Justification

In release 99, Relocation for services from PS domain is only optimised for non-real-time services. In current design, the content of the data buffers from the source RNC are fetched, which is not fully optimal for real-time services, and means that delay may exceed the requirement for real-time services. It is expected that real-time services from the PS domain, such as voice over IP would benefit from fully optimised handover.

4 Objective

This work item should design handover in RAN (mainly Iu) that supports real-time services from PS domain in an optimised way. The solution should be as simple as possible.

5 Service Aspects

The intention with the work item is to assure more optimised support for services such as voice over IP.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.936	PS-Domain handover for real-time services	R3		RAN #10	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413			RAN #11	

11 Work item raporteurs

Atte Länsisalmi (Nokia)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

Radio Interface Improvement, RAN Improvement and Evolution of bearers on the radio to enable IP based multimedia in UMTS Features

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

2.4 Rel-4 Evolution of the transport in UTRAN

This is a generic feature. See Description Sheet in file RAN_Work_Items.

2.4.1 QoS optimization for AAL type 2 connections over Iub and Iur interfaces

Originally RP-000188

Work Item Description

Title: QoS optimization for AAL type 2 connections over Iub and Iur interfaces

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

(list of linked Wis)

3 Justification

In Release 99, traffic like compressed voice (AAL type 2 connection) and traffic like data (AAL type 2 connection) are accommodated in common underlying VC(s) for AAL type 2 connections as real time traffics over Iub and Iur interfaces to ease management of CFN (Connection Frame Number) allocation to Down link data frame or scheduling at SRNC (Serving RNC). In addition to that, in sections with AAL type 2 switches, I.363.2 and Q.2630.1 referred in Release 99 have no capability to prioritize real time traffic like compressed voice or non-real time traffic like data.

In general, this requires much higher capacity underlying VC for AAL type 2 connections to meet the delay requirements for real time traffic like compressed voice especially in case of real time traffic data frame (smaller) right after non-real time traffic data frame (much bigger). Typical simulation on the case was given in TSG R3#8(99)e19 by Alcatel in Release 99 time frame. Higher capacity underlying VC for AAL type 2 connections over Iub interface impacts very much on initial and running costs of the Iub interface which usually consists of leased line.

4 Objective

This work item intends to introduce the capability to optimize the bandwidth of underlying VC for AAL type 2 connections over Iub and Iur interfaces in addition to the scheduling capability at SRNC in Release 4 time frame.

The capability should be realized with standardized solution(s) for multi-vendor environment, and the one(s) should cover all possible UTRAN transport network configurations.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.934	QoS optimization for AAL type 2 connections over Iub and Iur interfaces	WG3		RAN #10	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.414	26	UTRAN Iu interface: data transport & transport signalling	RAN #11	
TS 25.415	51	UTRAN Iu interface: user plane protocols	RAN #11	
TS 25.420	11	UTRAN Iur interface: general aspects and principles	RAN #11	
TS 25.424	10	UTRAN Iur interface: data transport & transport signalling for common transport channel data streams	RAN #11	
TS 25.425	25	UTRAN Iur interface: user plane protocols for common transport channel data streams	RAN #11	
TS 25.426	13	UTRAN Iur and Iub interfaces: data transport & transport signalling for DCH data streams	RAN #11	
TS 25.430	17	UTRAN Iub interface: general aspects and principles	RAN #11	
TS 25.434	8	UTRAN Iub interface: data transport & transport signalling for common transport channel data streams	RAN #11	
TR 25.931	7	UTRAN functions, examples on signalling procedures	RAN #11	

11 Work item rapporteurs

Takayuki Yoshimura (Japan Telecom)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

Evolution of transport in UTRAN

2.4.2 Transport bearer modification procedure on Iub, Iur, and Iu

Originally RP-000446

Work Item Description

Title: Transport bearer modification procedure on Iub, Iur, and Iu (originally Migration to Modification procedure)

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

Subclause 7.8 “Radio access bearer modification” of 3G TR 25.931 “UTRAN functions, examples on signalling procedures” (Release 99) utilizes Modification procedure of transport network bearer. But it is associated with a note that if the referred signalling protocol does not have the modification procedure, tentative procedure with establish new bearer and then release old one is applied to. The referred signalling protocol does not have the procedure.

The modification procedure has advantages to the tentative procedure in the transport network bearer bandwidth optimization and required number of signalling messages for the capability. Furthermore the procedure also becomes functionally less complex; A transport channel needs no longer be moved from one transport bearer to another. Especially in the unsynchronised reconfiguration case (e.g. subclause 7.14.1 (should be 7.14.2) "Unsyncronised transport channel reconfiguration" in TR 25.931), the current/tentative procedure seems quite complex with respect to the "moment of moving".

4 Objective

In Release 2000 time frame, the modification procedure is available in enhanced the referred transport network signalling protocol.

This work item is to make successful migration from the tentative procedure to the modification procedure.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
		WG3			RAN #10	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.410	15	UTRAN Iu interface: general aspects and principles	RAN #11	
TS 25.413	250	UTRAN Iu Interface RANAP Signalling	RAN #11	
TS 25.414	25	UTRAN Iu interface: data transport & transport signalling	RAN #11	
TS 25.420	10	UTRAN Iur interface: general aspects and principles	RAN #11	
TS 25.424	9	UTRAN Iur interface: data transport & transport signalling for common transport channel data streams	RAN #11	
TS 25.426	12	UTRAN Iur and Iub interfaces: data transport & transport signalling for DCH data streams	RAN #11	
TS 25.430	16	UTRAN Iub interface: general aspects and principles	RAN #11	
TS 25.434	7	UTRAN Iub interface: data transport & transport signalling for common transport channel data streams	RAN #11	
TR 25.931	6	UTRAN functions, examples on signalling procedures	RAN #11	

11 Work item rapporteurs

Takayuki Yoshimura (Japan Telecom)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

Evolution of transport in UTRAN

2.5 Rel-4 Improvements of the Radio interface

This is a generic feature. See Description Sheet in file RAN_Work_Items.

2.5.1 UTRA FDD Repeater Specification

Originally RP-000083

Work item Description

Title: UTRA FDD Repeater Specification

1 3GPP work area
Radio Access

2 Linked work items
None

3 Justification
Repeaters have proven to be useful for extending the coverage into buildings, train/car tunnels, subways, highways, etc in 2nd generation systems. Also, by installing repeaters at the sector borders or in highly dense areas, the transmitted power from the MS and the BS could possibly be lowered, leading to an improvement in C/I and thereby capacity.

For the installation of repeaters in cellular networks a specification is needed in e.g. Europe due to regulatory requirements.

For operators without the capability of handover to 2nd generation systems, extending the coverage of UTRA will be of importance especially at the initial rollout stage. For operators with capability of handover to 2nd generation systems, user requirements (e.g. high data rates) may not be met by those systems and extended UTRA coverage might be needed.

4 Objective
The objective of the work item is to create a technical specification of the UTRA repeater's minimum RF characteristics which, at least, should include:

- Spurious emissions
- Intermodulation products
- Out of band gain
- Frequency stability
- Modulation accuracy
- Blocking characteristics

In addition to the minimum RF characteristics, conformance requirements and Electro Magnetic Compatibility (EMC) shall also be specified.

5 Service Aspects
The use of repeater in a network may reduce the performance of the LCS method OTDOA. This is addressed in more detail in document R4-000012.

6 MMI-Aspects
None

7 Charging Aspects
None

8 Security Aspects
None

9 Impacts

Affects:	USIM	ME	Access Network	Core Network	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scales

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TS 25.106	UTRA Repeater; Radio transmission and reception	WG4		RAN#9	RAN#11	Repeater minimum RF characteristics
TS 25.143	UTRA Repeater; Conformance testing	WG4		RAN#9	RAN#11	Repeater conformance testing

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.113		UTRA Repeater EMC	RAN#11	Repeater EMC requirements

11 Work item rapporteurs
Martin Nilsson, Allgon AB
Thomas Kummetz, Mikom GmbH

12 Work item leadership
TSG-RAN WG4

13 Supporting companies
TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:
This is a building block part of the radio interface improvement feature.
In addition there is a relation to the building block UE positioning in UTRA FDD.

2.5.2 DSCH power control improvement in soft handover

Originally RP-000442

Work Item Description

Title: DSCH power control improvement in soft handover

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

After consideration in TSG RAN WG1 it was identified that DSCH power control operation in case of soft handover possibility (for the associated DCH is) needs improvement. This topic has been studied in TSG RAN WG1 as part of the study item "radio link performance improvements".

4 Objective

- The purpose of this work item is to specify improvement for the DSCH power control operation.
-

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	

Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.841	DSCH power control improvement in SHO	WG1		RAN #11	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.211		Physical Channels and mapping of transport channels to physical channels (FDD)	RAN #11	
25.214		Physical Layer Procedures (FDD)	RAN #11	
25.331		RRC Protocol Specification	RAN #11	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #11	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #11	
25.101			RAN #11	
25.104			RAN #11	
25.141			RAN #11	
34.121			RAN #11	

11 Work item raporteurs

Antti Toskala, Nokia

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

This is a building block part of the radio interface improvement feature.

2.5.3 UMTS 1900

Originally RP-010234

Work Item Description

Title: UMTS 1900

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

A decision was made at WARC 00 to extend the current IMT 2000 frequency allocation to include the bands currently occupied by PCS-1900. It is noted that Release 99 does not provide complete support for these bands. In addition, coexistence with other technologies has not been evaluated.

4 Objective

The purpose of this work item is to generate a report summarizing a study of co-existence of UTRA FDD and PCS1900, TIA/EIA-136, TIA/EIA/IS-95 in the following bands:

1850 – 1910 MHz: Up-link (UE transmit, Node B receive)
1930 – 1990 MHz: Down-link (Node B transmit, UE receive)

Based on the report the RF characteristics for both UE and BTS supporting this band will need to be added/corrected compared to Release 99.

TSG RAN WG2 will be asked to study the terminal capabilities. TSG RAN WG3 will be asked to study any possible interface impacts.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#14	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#14	
25.113		Requirements for Support of Radio Resource Management (FDD)	RAN#14	
25.133		Base Station Electromagnetic compatibility (EMC)	RAN#14	
25.141		Base station conformance testing (FDD)	RAN#14	
25.331		RRC Protocol	RAN#14	
25.942		RF System Scenarios	RAN#14	
25.306		Radio UE capability	RAN#14	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T#14	

11 Work item raporteurs

Howard Benn

12 Work item leadership

RAN WG 4

13 Supporting Companies

Cingular, AWS, Motorola, Nortel Networks, Nokia, Ericsson, VoiceStream Wireless

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
This is a building block part of the radio interface improvement feature.

2.6 Rel-4 RAN improvements

This is a generic feature. See Description Sheet in file RAN_Work_Items.

2.6.1 RAB support enhancements

This is a generic feature. See Description Sheet in file RAN_Work_Items.

2.6.2 Node B Synchronisation for TDD

Originally RP-000055

Work Item Description

Title: Node B Synchronisation for UTRA TDD mode

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

NodeB synchronisation is beneficial in UTRA TDD to minimise cross-interference in neighbouring cells. Currently, no method has been specified how NodeB synchronisation can be achieved with UTRAN's and UE's internal resources such as signalling via the air interface.

The following benefits of the introduction of NodeB synchronisation by means of internal resources are seen:

- A substantial reduction of the cost of the transmission network.
- An autonomous synchronisation procedure without the need of external references.
- An easily extendable method for the purpose of inter-system NodeB synchronisation.

4 Objective

The purpose of this new work item is to enable the synchronisation of NodeBs in UTRA TDD by means of UTRAN's and UE's internal resources such as air interface signals and NodeB cross measurements. NodeB synchronisation involves

- radio frame und multi frame synchronisation and
- intra-system and inter-system synchronisation.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.836	NodeB synchronisation for TDD	WG1		RAN #10	RAN #11	
25.838	NodeB synchronisation for TDD	WG3		RAN #10	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.123		Requirements for Support of Radio Resource Management (TDD)	RAN #11	
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)	RAN #11	
25.224		Physical Layer Procedures (TDD)	RAN #11	
25.225		Physical layer – Measurements (TDD)	RAN #11	
25.301		Radio Interface Protocol Architecture	RAN #11	
25.302		Services provided by the physical layer	RAN #11	
25.303		Interlayer procedures in connected mode	RAN #11	
25.321		MAC Protocol Specification	RAN #11	
25.331		RRC Protocol Specification	RAN #11	
25.402		Synchronisation in UTRAN Stage 2	RAN #11	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #11	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #11	

11 Work item raporteurs

Stefan Oestreich, Siemens AG

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Radio Interface Improvements and RAN Improvements Features

2.7 Rel-4 Location services enhancements

This is a generic Feature led by SA WG2

2.7.1 UE positioning

This is a generic Building Block led by TSG RAN. See Description Sheet in file RAN_Work_Items.

2.7.1.1 Iub/Iur interfaces for UE positioning methods supported on the radio interface R99

Originally RP-000509

Work Item Description

Title: Iub/Iur interfaces for UE positioning methods supported on the radio interface release 99

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Currently, the UE positioning if a function of UTRAN where several methods are supported on the radio interface:

- cell coverage based positioning method;
- OTDOA method with network configurable idle periods; and
- network assisted GPS method.

Nevertheless, only the cell coverage based positioning method is supported on the Iub and Iur interface of release 99.

4 Objective

The purpose of this work item is to add on the Iub and Iur protocols the necessary support for the positioning methods defined for release 99.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN Overall Description	RAN #10	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN #10	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #10	
25.430		UTRAN Iub Interface: General Aspects and Principles	RAN #10	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #10	

11 Work item raporteurs

to be decided by RAN WG3

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

UE positioning

2.7.1.2 UE positioning enhancements- IPDLs for TDD

Originally RP-000509

Work Item Description

Title: UE positioning enhancements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

UE positioning is a function of UE and UTRAN (Access Stratum) which can be utilised for a number of purposes:

- Radio Resource Management
- Support for location based services (LCS)

Different accuracy can be requested when positioning a UE for these purposes.

4 Objective

The purpose of this work item are to increase the accuracy of the UE positioning or define methods allowing UE positioning with less complexity for a given accuracy.

Examples of enhancements are:

- Addition of IPDL for UE positioning in TDD [This was finished in TSG-RAN #11]
- Almanac corrections

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.305		Stage 2 Functional Specification of Location Services in UTRAN	RAN #11	
25.123		Requirements for Support of Radio Resource Management (TDD)	RAN #11	
25.224		Physical Layer Procedures (TDD)	RAN #11	
25.225		Physical layer – Measurements (TDD)	RAN #11	
25.302		Services provided by the physical layer	RAN #11	
25.303		Interlayer procedures in connected mode	RAN #11	
25.304		UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode	RAN #11	
25.331		RRC Protocol Specification	RAN #11	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN #11	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #11	
25.430		UTRAN Iub Interface: General Aspects and Principles	RAN #11	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #11	

11 Work item rapporteur

Mark Beckmann, Siemens AG

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
x	Building Block (go to 14b)
	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

UE positioning

3 Release 5

3.1 High Speed Downlink Packet Access (HSDPA)

Originally RP-010262

Work Item Description

Title: High Speed Downlink Packet Access

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

HSDPA Physical Layer
HSDPA Layer 2 and 3 Protocol Aspects
HSDPA UTRAN Iub/Iur Protocol Aspects
HSDPA RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#7 a study item on High Speed Downlink Packet Access was approved. The aim of the study was to look at the feasibility and potential of various techniques such as Adaptive Modulation and Coding and Hybrid ARQ for increasing throughput and peak data rates with reduction in concomitant delay. Since RAN#7, RAN WG1 and RAN WG2 have considered many contributions on this subject and have concluded on the feasibility and potential of various techniques and provided recommendations on the inclusion of these techniques for Rel-5. This work item is in line with the recommendations from WG2 and WG1.

4 Objective

The technical objective of this work item is the integration of HSDPA functionality in UTRA, in line with recommendations from WG1 and WG2, to increase the throughput and peak data rates while reducing the overall delay. The works tasks include support for both FDD and TDD. In those cases where differences between FDD and TDD are identified, they should be considered as separate work tasks.

- For physical layer, the features include:
  - Physical and Transport Channels mapping
  - Higher Order Modulation
  - Multiplexing and Hybrid ARQ Channel Coding
  - Physical Layer procedures

- For higher layers:
  - Architecture aspects

- MAC entity (Scheduling and Hybrid ARQ protocol)
- Interlayer procedures in connected mode
- Control plane aspects
- UE capabilities

- For Iur/Iub interface:
  For the adoption of HSDPA some modifications to the present Iub and Iur signalling and user data streams will need to be included.

- For radio transmission and reception:
  - UE radio transmission and reception
  - BTS radio transmission and reception
  - BTS Conformance testing
  - Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.855		R2			RAN#13	
25.308		R2			RAN#13	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Ravi Kuchibhotla (Motorola)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
HSDPA Physical Layer
HSDPA Layer 2 and 3 Protocol Aspects
HSDPA UTRAN Iub/Iur Protocol Aspects
HSDPA RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)
This WI has not finished yet. See RAN_Work_Items.

3.1.1 High Speed Downlink Packet Access (HSDPA) - *Physical Layer*

Last distributed as: RP-010915 (originally RP-010262)

Work Item Description

Title: High Speed Downlink Packet Access - Physical Layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

HSDPA Layer 2 and 3 Protocol Aspects
HSDPA UTRAN Iub/Iur Protocol Aspects
HSDPA RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

The study item on HSDPA was concluded in RAN WG#11with recommendations on the techniques to be included in Rel-5. This work item enables the inclusion of the identified techniques at the physical layer.

4 Objective

The technical objective of this work item is the integration of HSDPA physical layer functionality in UTRA, while maintaining commonality with the R99 general physical layer aspects to the maximum extent possible.

- For physical layer, the features include:
  - Physical and Transport Channels mapping
  - Higher Order Modulation
  - Multiplexing and Hybrid ARQ Channel Coding
  - Physical Layer procedures

The work task for physical layer procedures will also consider additional physical layer measurements that may be required.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.858		R1		RAN#14		

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.201		Physical layer – General description	RAN#15	
25.211		Physical channels and mapping of transport channels onto physical channels (FDD)	RAN#15	
25.212		Multiplexing and channel coding (FDD)	RAN#15	
25.213		Spreading and modulation (FDD)	RAN#15	
25.214		Physical layer procedures(FDD)	RAN#15	
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)	RAN#15	
25.222		Multiplexing and channel coding (TDD)	RAN#15	
25.223		Spreading and modulation (TDD)	RAN#15	
25.224		Physical layer procedures(TDD)	RAN#15	

The expected finalisation date is TSG-RAN #15

11 Work item raporteurs

Amitava Ghosh (Motorola)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

Motorola, Nokia, Ericsson, Vodafone Group, Mannesmann Mobilfunk

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

High Speed Downlink Packet Access (HSDPA)

14c The WI is a Work Task: parent Building Block

3.1.2 High Speed Downlink Packet Access (HSDPA) - *layer 2 and 3 aspects*

Last distributed as: RP-010915 (originally RP-010262)

Work Item Description

Title: High Speed Downlink Packet Access - layer 2 and 3 aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

HSDPA Physical Layer
HSDPA UTRAN Iub/Iur Protocol Aspects
HSDPA RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

The study item on HSDPA was concluded in RAN WG#11with recommendations on the techniques to be included in Rel-5. This work item enables the inclusion of the identified techniques at layers 2 and 3.

4 Objective

The technical objective of this work item is the integration of HSDPA physical layer functionality in UTRA, while maintaining commonality with the R99 general layer 2 and 3 aspects to the maximum extent possible. While most of the control aspects will be identical to those for R99, some additional signaling for the configuration of HSDPA channels will need to be defined. Also, in order to enable the support of fast scheduling, support for a new MAC-HSDSCH entity shall be included. This new entity at the Node B will handle all the scheduling and HARQ (non-physical layer aspects) of the HSDPA feature. UE capabilities will need to be updated to indicate support of HSDPA. Physical Layer aspects of UE capabilities will be handled by WG1.

- For layers 2 and 3, the features include:
  - Architecture aspects
  - MAC entity (Scheduling and Hybrid ARQ protocol)
  - Interlayer procedures in connected mode
  - Control plane aspects
  - UE capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.301		Radio interface protocol architecture	RAN#15	
25.302		Service provided by the physical Layer	RAN#15	
25.303		UE functions and Inter-layer procedures in connected mode	RAN#15	
25.306		UE Radio Access Capabilites	RAN#15	
25.321		Medium access control (MAC) protocol specification	RAN#15	
25.331		Radio resource control (RRC) protocol specification	RAN#15	

The expected finalisation date is TSG-RAN #15

11 Work item raporteurs

Ravi Kuchibhotla (Motorola)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

Motorola, Nokia, Ericsson, Vodafone Group, Mannesmann Mobilfunk

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

High Speed Downlink Packet Access (HSDPA)

14c The WI is a Work Task: parent Building Block

3.1.3 High Speed Downlink Packet Access (HSDPA) - *Iub/Iur Protocol Aspects*

Last distributed as: RP-010915 (originally RP-010262)

Work Item Description

Title: High Speed Downlink Packet Access - Iub/Iur Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

HSDPA Physical Layer
HSDPA Layer 2 and 3 Protocol Aspects
HSDPA RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

The study item on HSDPA was concluded in RAN WG#11with recommendations on the techniques to be included in Rel-5. This work item enables support of the identified techniques over the Iub and Iur.

4 Objective

The technical objective of this work item is the integration of HSDPA physical layer functionality in UTRA, while maintaining commonality with the R99 general Iub and Iur aspects to the maximum extent possible. While most of the control aspects will be identical to those for R99, some additional signaling for the configuration of HSDPA shared channels will need to be defined. Also frame protocol for the user data stream will need to be defined for the HSDPA shared channels. Flow control for the HSDPA channels on the Iub will need to be supported.

– For Iub and Iur, the features include:
  - Iub and Iur architecture aspects
  - Iub and Iur control plane aspects
  - Iub and Iur user plane aspects

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications					
Spec No.	CR	Subject		Approved at plenary#	Comments
TS 25.401		UTRAN Overall Description	RAN #15		
TS 25.420		UTRAN Iur Interface: General Aspects and Principles	RAN #15		
TS 25.422		UTRAN Iur interface signalling transport	RAN #15		
TS 25.423		UTRAN Iur Interface RNSAP Signalling	RAN #15		
TS 25.424		UTRAN Iur interface data transport & transport signalling for CCH data streams	RAN #15		
TS 25.425		UTRAN Iur interface user plane protocols for CCH data streams	RAN #15		
TS 25.426		UTRAN I_{ur} and I_{ub} Interface Data Transport & Transport Signalling for DCH Data Streams	RAN #15		
TS 25.430		UTRAN I_{ub} Interface General Aspects and Principles	RAN #15		
TS 25.432		UTRAN Iub interface signalling transport	RAN #15		
TS 25.433		UTRAN Iub Interface NBAP Signalling	RAN #15		
TS 25.434		UTRAN Iub interface data transport & transport signalling for CCH data streams	RAN #15		
TS 25.435		UTRAN Iub interface user plane protocols for CCH data streams	RAN #15		
TS 25.442		UTRAN Implementation Specific O&M Transport	RAN #15		

The expected finalisation date is TSG-RAN #15

11 Work item raporteurs

Mike Diesen, Motorola

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

Motorola, Nokia, Ericsson, Vodafone Group, Mannesmann Mobilfunk

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

High Speed Downlink Packet Access (HSDPA)

14c The WI is a Work Task: parent Building Block

3.1.4 High Speed Downlink Packet Access (HSDPA) - RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

Originally RP-010262

Work Item Description

Title: High Speed Downlink Packet Access - RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

HSDPA Physical Layer
HSDPA Layer 2 and 3 Protocol Aspects
HSDPA UTRAN Iub/Iur Protocol Aspects

3 Justification

The study item on HSDPA was concluded in RAN WG#11with recommendations on the techniques to be included in Rel-5. This work item supports the specifications of the various RF characteristics of the HSDPA feature as they impact the base station and mobile station performance and the radio resource management aspects.

4 Objective

The technical objective of this work item is the description of the HSDPA characteristics, the system performance requirements and conformance testing.

- For radio transmission and reception:
  - UE radio transmission and reception
  - BTS radio transmission and reception
  - BTS Conformance testing
  - Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR 25.890	High Speed Downlink Packet Access: UE Radio Tranmission and Reception (FDD)	WG4		RAN#16	RAN #20	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio Transmission and Reception (FDD)	RAN #20	
25.102		UE Radio Transmission and Reception (TDD)	RAN #20	
25.104		UTRA (BS) FDD; Radio transmission and Reception	RAN#17 NOTE 1	
25.105		UTRA (BS) TDD; Radio transmission and Reception	RAN#17 NOTE 1	
25.123		Requirements for support of Radio Resource Management (TDD)	RAN#17 NOTE 1	
25.133		Requirements for support of Radio Resource Management (FDD)	RAN#17 NOTE 1	
25.141		Base station conformance testing(FDD)	RAN#17 NOTE 1	
25.142		Base station conformance testing(TDD)	RAN#17 NOTE 1	

11 Work item raporteurs

Howard Benn (Motorola)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
High Speed Downlink Packet Access (HSDPA)

3.2 Rel-5 Evolution of the transport in the UTRAN

This is a generic feature. See Description Sheet in file RAN_Work_Items.

3.2.1 IP transport in UTRAN

Work Item Description

Title: IP-transport in UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Release 2000 workplan includes, as an option, an all-IP transport architecture aimed at allowing operators to deploy IP technology to deliver 3rd generation services.

The foreseen benefits of the introduction of IP as transport technology inside the UTRAN are:

- To give the operator the option to use IP transport as an alternative to AAL2/ATM transport within UTRAN.
- In which networks, or parts of network, the IP option is beneficial over the AAL2/ATM option will vary between different operators, e.g. depending on existing transport network infrastructure, other applications using the same transport, available physical links, etc.
- A consistent approach allowing for end-to-end IP transport solutions.
- The more detailed requirements and expected benefits will be documented in the Technical Report.

4 Objective

The purpose of this new work task is to enable the usage of IP technology for the transport of signalling and user data over Iu, Iur and Iub in the UTRAN. This work task is only related to the transport aspects.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

Security aspects linked with the use of IP as transport technology.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X[1]	
No	X	X			
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

The first step of the work will consist in providing the necessary changes to the generic specifications (TS 25.401, TS 25.402). Then, the CRs to the other specs introducing the possibility to use IP as a transport mechanism will be generated.
The QOS aspects should be studied closely with IETF.

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR 25.933	IP Transport in UTRAN Work Task Technical Report	WG3		RAN #14	RAN #15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.401		UTRAN Overall Description	RAN #15	Only text related to Transport Network Layer.
TS 25.402		Synchronisation in UTRAN, Stage 2	RAN #15	To be confirmed during the study
TS 25.410		UTRAN Iu Interface: General Aspects and Principles	RAN #15	Only text related to Transport Network Layer.
TS 25.411		UTRAN Iu Interface Layer 1	RAN #15	
TS 25.412		UTRAN Iu interface signalling transport	RAN #15	
TS 25.413		UTRAN Iu Interface RANAP Signalling	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.414		UTRAN Iu interface data transport & transport signalling	RAN #15	
TS 25.415		UTRAN Iu interface user plane protocols	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.420		UTRAN Iur Interface: General Aspects and Principles	RAN #15	Only text related to Transport Network Layer.
TS 25.422		UTRAN Iur interface signalling transport	RAN #15	
TS 25.423		UTRAN Iur Interface RNSAP Signalling	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.424		UTRAN Iur interface data transport & transport signalling for CCH data streams	RAN #15	

[1] None of the TSG-CN specifications are impacted.

TS 25.425		UTRAN Iur interface user plane protocols for CCH data streams	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.426		UTRAN I_{ur} and I_{ub} Interface Data Transport & Transport Signalling for DCH Data Streams	RAN #15	
TS 25.430		UTRAN I_{ub} Interface General Aspects and Principles	RAN #15	Only text related to Transport Network Layer.
TS 25.432		UTRAN Iub interface signalling transport	RAN #15	
TS 25.433		UTRAN Iub Interface NBAP Signalling	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.434		UTRAN Iub interface data transport & transport signalling for CCH data streams	RAN #15	
TS 25.435		UTRAN Iub interface user plane protocols for CCH data streams	RAN #15	Only parameters and interface related to the Transport Network Layer.
TS 25.442		UTRAN Implementation Specific O&M Transport	RAN #15	
TR 25.931		UTRAN Functions, Examples on Signalling Procedures	RAN #15	Only messages related to transport bearers.
TR 25.932		Delay Budget within the Access Stratum	RAN #15	

11 Work item rapporteurs

Nicolas Drevon, Alcatel

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

Parent Building Block is "Evolution of the Transport in the UTRAN".

3.3 Rel-5 Improvements of the Radio interface

This is a generic feature. See Description Sheet in file RAN_Work_Items.

3.3.1 Base station classification

This Building Block is split between Release 5 and Release 6. The Work Tasks are as follows:

- FDD BS classification (Rel-6)
- TDD BS classification (Rel-5)
- LCR TDD BS classification (Rel-5)

Work Item Description

Last distributed as: RAN_Work_Items_after_RAN_15 (originally RP-000186)

Title: Base station classification

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

This work item proposes a building block for new base station classifications

4 Objective

This is the parent building block for the TDD and FDD basestation classification work tasks. Technical details for the work tasks can be found in TDoc RP-000132, and RP-000183

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R4		RAN #18	RAN #18	
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

11 Work item raporteurs

Antti Toskala, Nokia

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature – Radio Interface Improvement

3.3.1.1 TDD Base station classification

Originally RP-000185

Work Item Description

Title: TDD Base Station Classification

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Current TSG RAN WG4 specifications have been done according to the requirements for the macrocell base stations (NodeBs). For the UTRA evolution requirements specific for other type of base stations are needed as well (e.g. micro, pico)

4 Objective

- definition of base station classes according to deployment scenarios (e.g. macro, micro, pico)
- identification, review and possible update of radio parameters dependent on deployment scenarios
- identification, review and possible update of UTRAN (Node B) measurement requirements and conformance where the maximum base station output power is reflected, dependent on deployment scenarios
- review and possible update of conformance test specifications
- recording of related information into RF System Scenarios

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.952	TDD Base station classification	R4		RAN #16	RAN #16	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.105		UTRA (BS) TDD, Radio Transmission and Reception	RAN #16	
25.142		Base Station Conformance Testing (TDD)	RAN #16	
25.123		RF parameters in support of RRM (TDD)	RAN #16	?
25.942		RF System Scenarios	RAN #16	

11 Work item raporteurs

Antti Toskala, Nokia Networks

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block: Base Station Classification

(one Work Item identified as a building block)

3.3.1.2 Base Station Classification for 1.28 Mcps TDD

Originally RP-010450

Work Item Description

Title: Base Station Classification for 1.28 Mcps TDD option

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Current TSG RAN WG4 specifications have been done according to the requirements for the general purpose base station (Node B). For the UTRA evolution requirements specific for other type of base stations are needed as well (e.g. local area base station).

4 Objective

- definition of base station classes according to deployment scenarios (e.g. indoor, outdoor)
- identification, review and possible update of radio parameters dependent on deployment scenarios
- identification, review and possible update of UTRAN (Node B) measurement requirements and conformance where the maximum received signal level at the base station is reflected, dependent on deployment scenarios
- review and possible update of conformance test specifications
- recording of related information into RF System Scenarios

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.882	Base station classification for 1.28 Mcps TDD option	R4		RAN #16	RAN #16	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.105		UTRA (BS) TDD, Radio Transmission and Reception	RAN #16	
25.142		Base Station Conformance Testing (TDD)	RAN #16	
25.123		Requirements for Support of Radio Resources Management (TDD)	RAN #16	
25.942		RF System Scenarios	RAN #16	

11 Work item raporteurs

Meik Kottkamp, Siemens

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block: Base Station Classification

3.3.2 Enhancement on the DSCH hard split mode

Originally RP-010216

Work Item Description

Title: Enhancement on the DSCH hard split mode

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

1) It was identified by RAN WG's (WG1, WG2 and WG3) that in the current Rel99 specification, logical split cannot be supported over Iur during the DSCH soft handover if DSCH scheduling should be done in DRNC. Furthermore, hard split has advantage over logical split in the sense that it can be supported over Iur. However, it was also identifed that hard split has some limitation and therefore there is some need to study the enhancement for TFCI coding in the DSCH hard split mode
2) And also, it was identified by RAN WG1, that in the current Rel99 specification, TFCI2 (TFCI for DSCH) is not transmitted from all the cells in the active set when the UE is in soft handover. Furthermore, in the current specification, the power offset should be set high enough to always detect TFCI bits reliably even if UE is not in soft handover.

4 Objective

The purpose of this work item is to specify the enhancements of TFCI coding and power control in DSCH hard split mode for UTRA FDD. This work item is composed of two work tasks.
1)TFCI coding in DSCH hard split mode
Currently DSCH hard split mode can support only 5 bit long DSCH and DCH TFCIs. As a result, the number of TFCI is limited upto 32 for DCH and DSCH in DSCH hard split mode. A new TFCI coding scheme to support the variable bit length can enhance the DSCH hard split mode.
2) TFCI power control in DSCH hard split mode
Currently the reliability of TFCI cannot be guaranteed when the UE is in soft handover. As well, in the current specification, the power offset should be set high enough to always detect TFCI bits reliably even if UE is not in soft handover. New power control scheme for TFCI can enhance the DSCH hard split mode.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR 25.870				RAN # 14	RAN # 16	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.212		Multiplexing and channel coding (FDD)	RAN #16	
25.214		Physical Layer Procedure (FDD)	RAN #16	
25.331		RRC Protocol Specification	RAN #16	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #16	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #16	

11 Work item raporteurs

Jaeyoel KIM, SAMSUNG Electronics. kimjy@samsung.com

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

This is a building block part of the radio interface improvement feature.

14c The WI is a Work Task: parent Building Block

Work Task 1:TFCI coding in DSCH hard split mode
Work Task 2 :TFCI power control in DSCH hard split mode

3.3.3 UMTS 1800

Originally RP-000448

Work Item Description

Title: UMTS 1800

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

A decision was made at WARC 00 to extend the current IMT 2000 frequency allocation to include the current 2G cellular bands.

4 Objective

The purpose of this work item is to add the following frequency band to the 3GPP specifications

UMTS 1 800 Band:

1 710 - 1 785 MHz: mobile transmit, base receive
1 805 - 1 880 MHz: base transmit, mobile receive

A report will be generated to study the radio compatibilities of DCS1800 and UMTS1800.

TSG RAN WG2 will be asked to study the terminal capabilities. TSG RAN WG3 will be asked to study any possible interface impacts.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN #14	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN #14	
25.141		Base station conformance testing (FDD)	RAN #14	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T #14	

11 Work item raporteurs

Howard Benn (howard.benn@motorola.com)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

This is a building block part of the radio interface improvement feature.

3.4 Rel-5 RAN improvements

This is a generic feature. See Description Sheet in file RAN_Work_Items.

3.4.1 RRM optimizations for Iur and Iub

Originally RP-000310

The Work Tasks finished in TSG-RAN #11 are mentioned in this WI description

Work Item Description

Title: RRM optimizations for Iur and Iub

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

This work item focuses on optimising the existing procedures and functions related to:

1) Congestion handling of DCH
   Currently a DRNC accepting a dedicated RL, in principle needs to reserve resources for the maximum bitrate which could possibly be required for the DCH's on this RL. This because the DRNC has a very limited view on the load statistics of the DCH's (source descriptor) and has no possibility to control the DL-rate of the DCH's in congestion situations.

2) Procedure parallelism on Iub/Iur
   Currently almost no procedure parallelism is allowed in NBAP/RNSAP (dedicated) procedures. As a result, an RRM procedure used for handling problems in a fast changing radio environment, could have to wait for termination of a procedure e.g. introducing a new service on the RL.

   In order to improve the capability of the UTRAN to respond to fast changes in the radio environment, the restrictions on parallelism between procedures coping with radio environment changes (e.g. RL_ADDITION/RL_DELETION) and other procedures (e.g. RL_RECONFIGURATION) should be decreased.

3) DPC Rate Reduction in soft handover
Currently R1 describes two DPC_modes in 25.214, however mode change signalling is not supported by R3.

By supporting DPC-mode change signalling in the UTRAN, the UTRAN should be better capable of combating power drifting in the DL.

4) Introduction of common measurements over Iur
It is proposed to study the usefulness of / possibilities for introducing common measurements on Iur. For example, at present an SRNC has no information regarding cell load information in neighbouring cells on a DRNC when making soft handover decisions. A study should indicate whether clear benefits exist of providing such load information to a neighbouring CRNC.

If this, or other possible measurements are identified, a common measurement procedure as currently supported on Iub could be introduced in RNSAP.

5) Extension of Radio Interface Parameters updating in the user plane
Currently the Iub/Iur DCH FP supports a fast update of the TPC Power Offset in the DL RL via user plane signalling.

It should be studied if more radio interface parameters would benefit from a similar handling. If such parameters are identified, the user plane should be extended for this purpose.

6) Separation of resource reservation and radio link activation
This work task aims at introducing the possibility to have dedicated resources reserved in UTRAN without transmitting energy on the corresponding radio link(s). Furthermore, a separate mecha-nism for activating and deactivating radio transmission related to the reserved resources shall be introduced.

The separation will enable the following optimisations in UTRAN:
- delayed activation of a radio link at soft handover for high bit rate users, thus avoiding a potential handover problem;
- quicker channel type switching back to Cell_DCH;
- quicker radio link additions of radio links that recently were part of the active set;

7) Triggering of the Common Transport Channel Resources Initiation procedure by DRNC
Currently the DRNC has no possibility to request an SRNC to move a UE from using one combination of RACH/FACH channels to other RACH/FACH channels. However this functionality is provided by R(99) RRC signalling and is considered beneficial for obtaining a good distribution of the common resource usage in the DRNS.

For R(00) an appropriate solution should be specified to provide this capability to the DRNC.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

It is proposed to maintain the "RRM optimizations for Iur and Iub Building Block" as a continuously ongoing Building Block.

It is also proposed to handle Release 5 worktasks under this BB in separate WI-sheets, and result in separate TR's. Therefore, TR25.935 can be brought to v4.0.0, finalising the 6 worktasks indicated below.

1) Congestion handling of DCH

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.423	339	RNSAP	RAN #11	

2) Procedure parallelism on Iub/Iur

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Finalised without specification impact.

3) DPC Rate Reduction in soft handover

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.427	45	Iub/Iur dedicated transport channel user plane			RAN #11	
25.423	320	RNSAP			RAN #11	
25.433	373	NBAP			RAN #11	
25.433	387	NBAP			RAN #11	

4) Introduction of common measurements over Iur

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.420	12	Iur general aspects and principles			RAN #11	
25.423	323	RNSAP			RAN #11	

5) Extension of Radio Interface Parameters updating in the user plane

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments

Finalised without specification impact.

6) Separation of resource reservation and radio link activation

Not finalised; proposed to be handled in separate WI-sheet for Release 5.

7) Triggering of the Common Transport Channel Resources Initiation procedure by DRNC

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.935	RRM optimizations for Iur and Iub	WG3		RAN #11	RAN #11	
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

Finalised without specification impact.

11 Work item raporteurs

Gert-Jan van Lieshout (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

Radio Interface Improvement feature and UTRAN Improvement feature

14c The WI is a Work Task: parent Building Block

Starting from Release 5, each Work Task under this Building Block will be described in a separate WI-sheet.

3.4.1.1 Iur Common Transport Channel Efficiency Optimisation

Originally RP-010473

Work Item Description

Title: Iur Common Transport Channel Efficiency Optimisation

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

Currently in RACH/FACH state, the SRNC will have to execute the RNSAP Common Transport Channel Resources Initialisation procedure every time the UE moves from one cell to another cell in the DRNS. This procedure is required to provide the SRNC with:

A) Information on supported MAC-C lengths;

B) Flow control information;

C) Possibility to request another bearer;

In many cases, many (all) S-CCPCH's in a DRNS will be configured with the same TB sizes. If in such a situation a UE moves from one cell to another cell under the same DRNS, there is no reason to update A).

If the DRNS can continue to use the same flow-control situation, there is no reason to update B).

If, in the case A) and B) are not required and the SRNC does not require the UE to start using a new transport bearer, there is no need to execute the CommonTransport Resource Initialisation procedure.

A mechanism shall be introduced which reduces the need for a Common Transport Resources Initialisation procedure where possible.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

11 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.xxx		WG3		RAN #15	RAN #15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.423		RNSAP	RAN #15	

11 Work item raporteurs

Shahrokh Amirijoo (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

Ericsson, NEC, Nortel, Vodafone

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

RRM optimizations for Iur and Iub

3.4.1.2 Iur Neighbouring cell reporting Efficiency Optimisation

Originally RP-010474

Work Item Description

Title: Iur Neighbouring cell reporting Efficiency Optimisation

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

In Rel99/Rel4, everytime a RL is established in a certain cell, the SRNC will get information about certain characteristics of cells neighbouring the cell in which the RL is established. This information is provided regardless of whether the SRNC already has received this information before e.g. as neighbouring cell information for a previous RL establishment.

A mechanism shall be studied and if it is considered beneficial introduced, which increases the efficiency of the neighbouring cell information reporting by avoiding the transport of information the SRNC is already aware of.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

12 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.xxx		WG3		RAN #15	RAN #15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.423		RNSAP	RAN #15	

11 Work item raporteurs

Shahrokh Amirijoo (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

Ericsson, IDC, Nortel, Siemens, Vodafone

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

RRM optimizations for Iur and Iub

3.4.1.3 RL Timing Adjustment

Originally RP-010261

Work Item Description

Title: RL Timing Adjustment

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

WG1 has already expressed (outgoing liaison R1-010135) that in the event of RL adjustment being required, the Rel99/Rel4 process of deleting and re-establishing a RL temporarily causes additional DL interference in one or more cells due to loss of macro-diversity gain. In addition it slightly increases the risk of dropped calls. Therefore RAN WG1 asked RAN WG3 to consider implementing a RL adjustment procedure for a future release.

This work task aims at introducing this possibility to execute a timing adjustment of one individual RL, typically one of several RLs in the active set.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

13 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.xxx		WG3	WG2	RAN #15	RAN #15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.423		RNSAP	RAN #15	
25.433		NBAP	RAN #15	
25.331		RRC	RAN #15	

11 Work item raporteurs

Elena Voltolina (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

Ericsson, Nokia, Philips, Qualcomm

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

RRM optimizations for Iur and Iub

3.4.1.4 Separation of resource reservation and radio link activation

Originally RP-010487

Work Item Description

Title: Separation of resource reservation and radio link activation

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

This work task aims at introducing the possibility to have dedicated resources reserved in UTRAN without transmitting energy on the corresponding radio link(s). Furthermore, a separate mechanism for activating and deactivating radio transmission related to the reserved resources shall be introduced. The study of this mechanism shall also consider the possibility to reserve resources without allocating them to a particular UE. In this case, the actual allocation of the reserved resources to a particular UE would be delayed until the activation of the radio transmission.

The separation will enable the following optimisations in UTRAN:

- delayed activation of a radio link at soft handover for high bit rate users, thus avoiding a potential handover problem;
- quicker channel type switching back to Cell_DCH;
- quicker radio link additions of radio links that recently were part of the active set;
- benefit from statistical multiplexing at RRM level (by reserving resources on a given cell based on HO probability laws, Busy Hour Call Attempts statistics,…).

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

14 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.xxx		WG3		RAN #15	RAN #15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.420		Iur general aspects and principles	RAN #15	
25.423		RNSAP	RAN #15	
25.430		Iub general aspects and principles	RAN #15	
25.433		NBAP	RAN #15	

11 Work item raporteurs

Gert-Jan van Lieshout (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

RRM optimizations for Iur and Iub

3.4.2 Re-arrangement of Iub Transport Bearers

Originally RP-010465

Work Item Description

Title: Re-arrangement of Iub Transport Bearers (originally Traffic Termination Point Swapping)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

In the current NBAP specification (TS25.433) there is no mechanism to change the D-NBAP link for the given Node B Communication Context and secondly there is no mechanism to switch the existing transport bearers from one physical termination point to another. Fixing of the transport resources may cause the transport resource fragmentation problem in the implementation where the physical resources are distributed. In the worst case the transport resource fragmentation may cause the rejection of some large capacity call. To solve this problem there is a need for a new procedure allowing the Node B to initiate transport resource reallocation. This new procedure allows the use of distributed physical resources more efficiently by allowing a defragmentation of the resources and it may be used also due the O&M reasons.

4 Objective

The objective of this work item is to introduce a new procedure in the NBAP enabling Node B to initiate switching of the transport bearers and a Communication Control Port from one physical termination point to another.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

This is a Release 5 Work Item

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.433		UTRAN Iub Interface NBAP Signalling	RAN #15	

11 Work item raporteurs

Antti Toskala, Nokia, Helsinki, Finland

12 Work item leadership

RAN 3

13 Supporting Companies

Nokia, Nortel Networks, InterDigital, Siemens

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block:

14c The WI is a Work Task: parent Building Block

3.4.3 Radio access bearer support enhancement

Originally RP-000140

"Robust Header Compression" was finished in TSG-RAN #11
"RFC 3095 context relocation in SRNS relocation" was finished in TSG-RAN #16

Work Item Description

Title: Radio Access Bearer support enhancement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

3 Justification

The increasing interest in IP based services demands special optimisation of the means by which a radio access bearer can be provided by UTRAN.

4 Objective

This work item should have the scope of adding necessary functionality to the Uu and Iu interface in order to efficiently support RT traffic, e.g. VoIP. Examples of such functionality are:
- Radio Access Bearer multiplexing in PDCP
- Header compression for VoIP
  - Normally referenced from an IETF RFC
- Support of variable formats over Iu and unequal error protection over Uu
- Channel type switching for logical channels
  - Today it is only possible to switch all logical channels of one UE, not individual. For DSCH it would be much better to be able to switch single logical channels
- IP header removal as developed within GERAN

5 Service Aspects

The intention with the work item is to better and more efficient support IP based services.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.331		RRC protocol specification	RAN#11	
25.323		PDCP protocol specification	RAN#11	
25.413		UTRAN Iu interface RANAP signalling	RAN#11	
25.415		UTRAN Iu interface user plane protocols	RAN#11	

11 Work item raporteurs

TSG-RAN WG2: Ainkaran Krishnarajah (Ericsson)
TSG-RAN WG3: Martin Israelsson (Ericsson)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
(one Work Item identified as a feature)
- RAN Improvement
- Evolution of bearers on the radio to enable IP based multimedia in UMTS

3.4.4 Beamforming requirements for UE

Last distributed as: RP-010950

Work Item Description

Title: Beamforming requirements for UE

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Beamforming with dedicated pilot symbols or with S-CPICH has potential to improve system capacity.

4 Objective

This work item should define the Rel'5 UE performance requirements for efficient support of beamforming.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.133	240	Active set size limitation for dedicated pilot	TSG RAN#14	
TS 25.101	142	Performance requirement for dedicated pilot	TSG RAN#14	

11 Work item raporteurs

Jussi Kähtävä, Nokia.

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

Nokia, Motorola, Panasonic, Qualcomm

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

UTRAN Improvement Feature

3.4.5 Support of Site Selection Diversity Transmission in UTRAN

Originally RP-010951

Work Item Description

Title: Support of Site Selection Diversity Transmission in UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None.

3 Justification

SSDT is defined in R99 and Rel4 specifications. In recent discussions in RAN#14 it was clarified that there is no full support of SSDT in the UTRAN. Indeed in R99 and Rel4 specifications it is assumed that the Qth parameter in Node B is set as an OAM parameter with vendor specific definition & signaling ranges. However support of Qth parameter over NBAP would be needed for multi-vendor NodeBs for deployment of SSDT and hence full support of SSDT on the UTRAN side. In addition the physical quantity (UTRAN measurement) used in combination with the Qth parameter should be defined in RAN 1 25.214 specification and performance requirements for the Node B defined.

4 Objective

The objective of this WI is to provide the necessary changes and additions required in the current RAN specifications to provide full support of SSDT in UTRAN. Specifically the work item should:

- Specify the Qth parameter
- Specify the physical measurement quantity at node B for use in combination with the Qth parameter
- Specify performance requirements for Node B in RAN4 specifications
- Specify signalling of the Qth parameter over the Iub and Iur interfaces

25 **Service Aspects**

None

25 **MMI-Aspects**

None

25 **Charging Aspects**

None

25 **Security Aspects**

None

25 **Impacts**

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

25 **Expected Output and Time scale (to be updated at each plenary)**

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.214		Physical Layer Procedures (FDD)	RAN#16	
25.104		Radio transmission and Reception (FDD)	RAN#16	
25.433		UTRAN Iub interface NBAP signalling	RAN#16	
25.423		UTRAN Iur interface RNSAP signalling	RAN#16	
25.141		Base Station Conformance Testing (FDD)	RAN#16	

11 Work item rapporteurs

NEC

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

RAN improvements

3.4.6 Node B Synchronisation for 1.28 Mcps TDD

Last distributed as: RP-010915 (originally RP-010216)

Work Item Description

Title: Node B Synchronisation for 1.28 Mcps TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

NodeB synchronisation is beneficial in UTRA TDD to minimise cross-interference in neighbouring cells. Currently, for the 1.28 Mcps TDD option no method has been specified how NodeB synchronisation can be achieved with UTRAN's and UE's internal means such as signalling via the air interface.

The following benefits of the introduction of NodeB synchronisation by internal means are seen:

- A substantial reduction of the cost of the transmission network.
- An autonomous synchronisation procedure without the need of external references.
- An easily extendable method for the purpose of inter-system NodeB synchronisation.

4 Objective

The purpose of this new work item is to enable the synchronisation of NodeBs in UTRA TDD for the 1.28 Mcps option by UTRAN's and UE's internal means such as air interface signals and NodeB cross measurements. NodeB synchronisation involves

- radio frame and multi frame synchronisation and
- intra-system and inter-system synchronisation.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.868	NodeB synchronisation for 1.28 Mcps TDD	WG1		RAN # 14	RAN # 15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.123		Requirements for Support of Radio Resource Management (TDD)	RAN # 15	
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)	RAN # 15	
25.223		Spreading and modulation (TDD)	RAN # 15	
25.224		Physical Layer Procedures (TDD)	RAN # 15	
25.225		Physical layer – Measurements (TDD)	RAN # 15	
25.302		Services provided by the physical layer	RAN # 15	
25.331		RRC Protocol Specification	RAN # 15	
25.402		Synchronisation in UTRAN Stage 2	RAN # 15	
25.433		UTRAN Iub Interface NBAP Signalling	RAN # 15	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN # 15	

11 Work item raporteurs

Ms. Jinling HU (CWTS/CATT)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

CATT, China Mobile, Huawei, Motorola, Nortel Networks, Samsung, Siemens

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Radio Interface Improvements and RAN Improvements Features

3.4.7 UTRAN Sharing in Connected Mode

Originally RP-020246

Work Item Description

Title: UTRAN Sharing in Connected Mode (originally Shared Network support in Connected Mode)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Based on the Release-99 specifications, the CN+UTRAN have mechanisms available to provide UE-specific access restrictions for LA's of the current PLMN and other PLMN's when the UE is in Idle Mode[2]. These mechanisms can be used for implementing shared networks solutions in which, based on roaming agreements, the access restrictions to be applied might be different for different UE's.

Although the Release-99 specifications specify these mechanisms for handling the UE when in Idle Mode, insufficient mechanisms are specified to provide similar access restrictions in Connected Mode. In Connected mode the UE mobility is handled by the UTRAN and the UTRAN does not have the necessary information (e.g. roaming agreements) to provide a consistent access restriction handling in Connected Mode.

4 Objective

The objective of this WI is to enable the CN+UTRAN to provide a consistent UTRAN mobility access restriction handling based on roaming agreements in both Idle and Connected Mode.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

[2] Mechanisms include UE-specific LOCATION UPDATING ACCEPT/REJECT & inclusion of LA-specific/UE-specific equivalent PLMN information in LOCATION UPDATING ACCEPT.

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN architecture description; Stage 2	RAN#17	
25.413		UTRAN Iu Interface RANAP Signalling	RAN#17	
25.423		UTRAN Iur interface RNSAP signalling	RAN#17	

11 Work item rapporteurs

Martin Israelsson, Ericsson

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

RAN Improvement feature

3.5 Rel-5 Location services enhancements

This is a generic Feature led by SA WG2

3.5.1 UE positioning

This is a generic Building Block led by TSG RAN. See Description Sheet in file RAN_Work_Items.

3.5.1.1 UE positioning enhancements for 1.28 Mcps TDD

Originally RP-010215

Work Item Description

Title: UE positioning enhancements for 1.28 Mcps TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

UE positioning is a function of UE and UTRAN (Access Stratum) which can be utilised for a number of purposes:

- Radio Resource Management
- Support for location based services (LCS)

Different accuracy can be requested when positioning a UE for these purposes.

4 Objective

The purpose of this work item are to increase the accuracy of the UE positioning or define methods allowing UE positioning with less complexity for a given accuracy.
Examples are refinement and adoption of methods that are defined for release 5.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.859	UE positioning enhancements for 1.28 Mcps TDD	WG2		**RAN # 13**	**RAN # 15**	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.305		Stage 2 Functional Specification of Location Services in UTRAN	RAN # 15	
25.123		Requirements for Support of Radio Resource Management (TDD)	RAN # 15	
25.224		Physical Layer Procedures (TDD)	RAN # 15	
25.225		Physical layer – Measurements (TDD)	RAN # 15	
25.302		Services provided by the physical layer	RAN # 15	
25.303		Interlayer procedures in connected mode	RAN # 15	
25.304		UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode	RAN # 15	
25.331		RRC Protocol Specification	RAN # 15	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN # 15	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN # 15	

25.430		UTRAN Iub Interface: General Aspects and Principles	RAN # 15	
25.433		UTRAN Iub Interface NBAP Signalling	RAN # 15	

11 Work item rapporteur

Ms. Xiaohua MEI (CWTS/CATT)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

CATT, China Mobile, Huawei, Motorola, Nortel Networks, Samsung, Siemens

14 Classification of the WI (if known)

	Feature (go to 14a)
x	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

UE positioning

14c The WI is a Work Task: parent Building Block

3.5.1.2 Open interface between the SMLC and the SRNC within the UTRAN to support A-GPS Positioning

Last distributed as: RP-010414

Work Item Description

Title: Open interface between the SMLC and the SRNC within the UTRAN to support A-GPS Positioning

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

At the 3GPP LCS Work Shop held in London on 1/11/01and 1/12/01 it was agreed that for A-GPS positioning, sufficient functional separation existed with RNC functions to justify the opening the interface towards a standalone SMLC.

4 Objective

The objective of this work item is to provide for support of an open interface between the SMLC and the SRNC within the UTRAN for the support of A-GPS positioning. This new interface would be analogous to the Lb interface defined in the GSM LCS specifications with the exceptions that the positioning messages are terminated at the SRNC and mapped to release 99 RRC messages and that the positioning messages also support broadcast of LCS assistance data in support of the RRC broadcast messages.

The addition of the interface should be compatible the release 99 Iu, Iur and Iub and radio interfaces. The addition of this interface does not preclude the A-GPS to be supported in the SRNC.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
3GPP TS 25.453	Positioning Calculation Application Part (PCAP)	RAN 2	RAN 3	RAN #12	RAN #12	
3GPP TS 25.452	UTRAN I_{upc} Interface: Signalling Transport	RAN 2	RAN 3	RAN #13	RAN #13	
3GPP TS 25.451	UTRAN I_{upc} Interface: Layer 1	RAN 2	RAN 3	RAN #12	RAN #12	
3GPP TS 25.450	UTRAN I_{upc} Interface: General Aspects and Principles	RAN 2	RAN 3	RAN #12	RAN #12	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN architecture description; Stage 2	RAN #12	Add new Iupc interface and new stand alone A-GPS SMLC network entity.
25.305		UTRAN Stage 2	RAN #11	Modify Network Reference Model to show stand alone A-GPS SMLC and add stage 2 call flows for A-GPS positioning.

11 Work item raporteurs

Ie-Hong Lin (Qualcomm)
Vince Jolley (Qualcomm)

12 Work item leadership

RAN 2

13 Supporting Companies

Qualcomm, SBC, Cingular Wireless, Samsung Electronics Research Institute, Hutchison 3G, NEC, Orange PCS, and Vodafone Group

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature UE positioning

1 Provision of SRNC - SMLC Open Interface

14c The WI is a Work Task: parent Building Block

3.6 Intra Domain Connection of RAN Nodes to Multiple CN Nodes

This feature was led by SA WG2

3.6.1 RAN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes

Originally RP-000689

Work Item Description

Title: RAN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

F1 Intra Domain Connection of RAN Nodes to Multiple CN Nodes: Overall System Architecture
SA 2 is responsible for this.

BB3 GERAN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes
[GERAN 2 is predicted to lead the work in GERAN]

BB4 CN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes
[CN 1 is predicted to lead the work in CN]

3 Justification

In the current network architecture, an RNC can only be connected to one MSC and/or one SGSN. The same restriction applies to BSCs. This has the following consequences:

a) when a BSC (or RNC) has a relatively large capacity compared to that of an MSC/SGSN there are frequently significant wastages of hardware. (For example, if a BSC has 40% of the capacity of an MSC, do you connect 2 or 3 BSCs to that MSC?)

b) as networks carry more traffic, the geographic area covered by one MSC or SGSN (of a given capacity) decreases. However, subscribers still tend to travel the same physical distances and therefore there are more inter-MSC/SGSN registration updates. The signalling associated with these inter MSC/SGSN updates causes additional load on MSCs, SGSNs, HLRs, the core network signalling networks and on the radio interface signalling channels.

The ability to connect RNCs and BSCs to more than one MSC and to more than one SGSN could reduce the above problems. In addition, the ability to provide load sharing between MSCs (SGSNs) would further improve the efficiency of hardware utilisation.

This work will focus on a solution where a routeing function is placed in the RNC (or BSC). This avoids most of the problems of a standalone node (TR 23.913 called it the Turbo Routeing Function), while retaining the other advantages of described in R'99, TR 23.913.

This Work Item (which is a Feature) proposes to provide a standardised mechanism for the connection of multiple MSCs (and SGSNs) to an RNC or a BSC (both A/Gb mode and Iu mode) which reduces mobility management signalling and permits improved efficiency in hardware utilisation.

It is intended that this new concept is an architectural option for any PLMN. Its deployment, or non-deployment, by one network operator should not place requirements on other network operators.

4 Objective

The objective of this Work Item is to produce the necessary updates to the RAN TSs.

The list of affected existing specifications is given in section 10.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.875	RAN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes	R3		RAN#14	RAN#15	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.331		Inclusion of NAS routeing parameter in Initial Direct Transfer message.		
25.401		RAN architecture description		
25.413		Addition of “current MSC/SGSN load” message to RANAP		

11 Work item raporteurs

Brendan McWilliams, Vodafone

12 Work item leadership

RAN 3

13 Supporting Companies

Vodafone, Nokia, Ericsson, Nortel, Mannesmann

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block

Parent feature: F1: Intra Domain Connection of RAN Nodes to Multiple CN Nodes: Overall System Architecture

SA 2 is responsible for this.

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

4 Release 6

4.1 Rel-6 Improvements of the Radio Interface

4.1.1 Base station classification

This Building Block is split between Release 5 and Release 6. The Work Tasks are as follows:

- FDD BS classification (Rel-6)
- TDD BS classification (Rel-5)
- LCR TDD BS classification (Rel-5)

See WI Description Sheet in section 3.3.1 of this document

4.1.1.1 FDD Base station classification

Last distributed as: RAN_Work_Items_after_RAN_15 (originally RP-000183)

Work Item Description

Title: FDD Base Station Classification

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Current TSG RAN WG4 specifications have been done according to the requirements for the macrocell base stations (NodeBs). For the UTRA evolution requirements specific for other type of base stations are needed as well (e.g. micro, pico)

4 Objective

- definition of base station classes according to deployment scenarios (e.g. macro, micro, pico)
- identification, review and possible update of radio parameters dependent on deployment scenarios
- identification, review and possible update of UTRAN (Node B) measurement requirements and conformance where the maximum base station output power is reflected, dependent on deployment scenarios
- review and possible update of conformance test specifications
- recording of related information into RF System Scenarios

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.951	FDD Base station classification	R4		RAN #18	RAN #18	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.104		UTRA (BS) FDD, Radio Transmission and Reception	RAN #18	
25.141		Base Station Conformance Testing (FDD)	RAN #18	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN #18	?
25.942		RF System Scenarios	RAN #18	

11 Work item raporteurs

Antti Toskala, Nokia Networks

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block: Base Station Classification

(one Work Item identified as a building block)

4.1.2 Improving Receiver Performance Requirements for the FDD UE

Work Item Description

Last distributed as: RAN_Work_Items_after_RAN_16 (originally RP-020124)

Title: Improving Receiver Performance Requirements for the FDD UE

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Feasible methods exist which can enable improved performance requirements for the UE.

4 Objective

The objective of this Work Item is to establish improvements in the currently existing UE performance requirements.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X			
No	X		X	X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN #21	

11 Work item raporteurs

Shimon Moshavi, Intel (Shimon.Moshavi@intel.com)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature
(list of Work Items identified as building blocks)
14b The WI is a Building Block: parent Feature
Improvements of Radio Interface
14c The WI is a Work Task: parent Building Block
(one Work Item identified as a building block)

4.1.3 UMTS 850

Approved at TSG RAN#18 as RP-020875. Modified at TSG RAN #19 as RP-030197. Finished at TSG RAN #22, last status report in RP-030560.

Work Item Description

Title: UMTS 850

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

WRC 2000 extended the current IMT 2000 frequency allocation to include bands currently occupied with-in the 850 MHz. band. In particular, ITU-R Working Party 8F has recently forwarded into the ITU approval process a revision to ITU-R Recommendation M.[1036-1]. This revision includes recognition of the WRC 2000 bands identified for IMT-2000, in particular the band range 806-960 MHz.

The supporters of this WI proposal believe that GPRS/EDGE at 850 will eventually begin evolving into UMTS at 850 in the 2007 – 2008 time frame with-in ITU Region 2. This band is currently occupied by a variety of technologies so studies of migration paths of the likely combinations of technologies should be considered (both internal and external to 3GPP). While progressing the specification work for UMTS 850 3GPP TSG RAN WG4 should consider studies performed by and recommendations given by Committee T1 (T1P1) concerning band plans, interference, and ITU Region 2 implementation issues.

It is suggested that the changes to incorporate UMTS in the 1900 MHz band could be used as the basis for this work which would reduce the effort required within 3GPP.

4 Objective

The purpose of this work item is to generate necessary information of the 850 MHz FDD system for potential deployment only in ITU Region 2 detailed below:

4.1 Generate a report summarizing a study of UTRA FDD in the 850 band (as described below) which includes, or will include the migration (including co-existing studies) of the following technologies: GPRS/EDGE, TIA/EIA-136, TIA/EIA/IS-95, and Analog AMPS into UMTS 850.

The specific bands to be studied are These uplink/downlink parings are consistent with the revision of ITU-R M.[1036-1]

824 – 849 MHz: Up-link (UE transmit, Node B receive)
869 – 894 MHz: Down-link (Node B transmit, UE receive)

4.2 Generate CR's to update the appropriate documents
4.3 TSG RAN WG2 - study any issues related to UMTS at 850 MHz.
4.4 TSG RAN WG3 - study any possible interface impacts to UMTS networks.
4.5 Any additional related issues.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#23 (March 2004)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#23 (March 2004)	
25.113		Base Station Electromagnetic compatibility	RAN#23 (March 2004)	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#23 (March 2004)	
25.141		Base station conformance testing (FDD)	RAN#23 (March 2004)	
25.331		RRC Protocol	RAN#23 (March 2004)	
25.942		RF System Scenarios	RAN#23 (March 2004)	
25.306		Radio UE capability	RAN#23 (March 2004)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#23 (March 2004)	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T#23 (March 2004)	

11 Work item raporteurs

Don Zelmer, Cingular Wireless LLC

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN

(Cingular Wireless LLC, AT&T Wireless Services, Rogers Wireless, Nortel Networks, Motorola, Siemens, Nokia, Ericsson)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:

This WI is a building block part of the radio interface improvement feature.

14c Proposed Work Plan:

The following Table contains a break down of items needed to complete the WI and assigns the responsibility to various parties. The items in this Table are not necessarily in proper chronological order.

Item#	Effort Required	Responsibility
1	Provide description of existing band plan	T1P1.2
2	Define overall deployment scenarios for UMTS850	T1P1.2
3	Provide requirements for co-existence with other technologies	T1P1.2
3.5	Provide guidance on simulation assumptions	T1P1.2
4	Define detailed simulation assumptions to cater for items # 3 and 3.5 and collect them into a TR	RAN4
5	Perform simulations based on agreed upon simulation assumptions and collect results into a TR	RAN4
6	Give guidance on simulation results. Recommend more simulation as needed to complete task	T1P1.2
7	Generate CRs to update the appropriate specifications and other documents.	RAN4
8	Study any signaling issues related to UMTS at 850 MHz	RAN2
9	Study any possible interface (Iu, Iub, Iur) impacts to UMTS network	RAN3
10	Any additional related issues	ALL

15 WIDS History

Item 14c was accepted by T1P1.2 in the 6 March 2003 conference call. It has been updated and is proposed to be approved by RAN 19.
Item 4, the Objective, has been updated. It is proposed that the changes to item 4 be approved by RAN 19.

4.1.4 DS-CDMA Introduction in the 800 MHz Band

First distributed at TSG RAN #19 as RP-030178. Finished at TSG RAN #22, last status report in RP-030561.

Work Item Description

Title: DS-CDMA Introduction in the 800 MHz Band

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

As for IMT-2000, spectrum was first identified by WARC-92. WRC-2000 also considered issues related to IMT-2000, resulting in the additional spectrum identification for the terrestrial component of IMT-2000. In addition, ITU-R Study Group 8 has recently forwarded into the ITU approval process a revision to ITU-R Recommendation M. [1036-1]. This revision includes recommended frequency arrangements for the additional IMT-2000 spectrum identified at WRC-2000; in particular the band 806-960 MHz.

In Japan, currently the band 806-960MHz is mainly used for several Mobile Services. The allocation for the services are rather fragmented and complicated compared with other countries. A working group has been established under the national telecommunication council in Japan to consider the technical condition of the frequency re-arrangement in 800MHz band in order to enhance frequency efficiency. Therefore, the proponents of this work item believe that there is high possibility that IMT-2000 would be introduced in Japan in the band near future.

It is suggested that the consideration of the evolution and migration to introduce DS-CDMA in the band 806-960MHz being studied in the working group under the national telecommunication council in Japan could be used as the basis for this work, which would reduce the effort required within 3GPP.

4 Objective

The purpose of this work item is to:

4.1 Study of DS-CDMA in the 800 MHz band (as described below) for a potential deployment only in Japan. The study includes co-existing studies with the following technologies: ARIB STD-27(PDC), ARIB STD-T53(IS-95), and ARIB STD-T64 (cdma 2000), taking the frequency reframing plan in Japan into account. Generate a new technical report based on study results.

The specific bands to be studied are (These uplink/downlink parings are consistent with the revision of ITU-R M.[1036-1]):

[810 – 855] MHz: Up-link (UE transmit, Node B receive)

[855 – 900] MHz: Down-link (Node B transmit, UE receive)

4.2 Generate CR's to update the appropriate documents
4.3 TSG RAN WG2 - study signaling issues related to IMT-2000 DS-CDMA in 800 MHz band.
4.4 TSG RAN WG3 - study any possible interface impacts to IMT-2000 DS-CDMA networks.
4.5 Any additional related issues.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

11 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
	[DS-CDMA Introduction in the 800 MHz Band]	RAN4	RAN2	RAN#22	RAN#22	New technical report.

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#22 (September 2003)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#22 (September 2003)	
25.113		Base Station Electromagnetic compatibility	RAN#22 (September 2003)	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#22 (September 2003)	
25.141		Base station conformance testing (FDD)	RAN#22 (September 2003)	
25.331		RRC Protocol	RAN#22 (September 2003)	
25.942		RF System Scenarios	RAN#22 (September 2003)	
25.306		Radio UE capability	RAN#22 (September 2003)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#22 (September 2003)	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T#22 (September 2003)	

11 Work item rapporteurs

Takehiro Nakamura (NTT DoCoMo)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
(NTT DoCoMo, Fujitsu, Mitsubishi Electric, NEC, Panasonic)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:
This WI is a building block part of the radio interface improvement feature.

4.1.5 UMTS 1.7/2.1 GHz

First distributed at TSG RAN #19 as RP-030186.
Work Item finished at TSG RAN #23 March 2004.

Work Item Description

Title: UMTS 1.7/2.1 GHz

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

In the WRC 2000, additional spectrum was identified for IMT-2000, including the band 1710-1885 MHz. As a result of this decision the UMTS1800 work was concluded in rel-5 time frame in TSG RAN.

Recently there have been initiatives taken by one Administration in Region 2 that allows the band pairing between 1710 MHz UL and 2110 MHz DL. It is expected that other Administrations will follow.
3GPP has specified the band 2110-2170 MHz in its original rel-99 activity, and is also well suited for using with 1710-1770 MHz as uplink. Such an urgent specification work in 3GPP will allow for a timely global WCDMA arrangement so that the entire 2x60 MHz paired spectrum bands 1710-1770 and 2110-2170 MHz or parts of these bands may also be used with a consistent 400 MHz frequency separation between the uplink and the downlink.

While working with UMTS 1.7/2.1 GHz, 3GPP TSG RAN WG4 should consider information made available by FCC and Committee T1 (T1P1) concerning band plans, and ITU Region 2 implementation issues what may consider this new frequency allocation in North America.

4 Objective

The purpose of this work item is to generate necessary information of 1.7/2.1 GHz FDD system for potential deployment only in ITU Region 2 detailed below:

4.1 Generate a report summarizing a study of radio requirements UTRA FDD in the 1.7/2.1 GHz Band

- 1710 – 1770 MHz: Up-link (UE transmit, Node B receive)
- 2110 – 2170 MHz: Down-link (Node B transmit, UE receive)

It has to be noted that this WRC 1.7/2.1 GHz Band includes the current FCC band allocation given below for information
1710 – 1755 MHz: Up-link (UE transmit, Node B receive)
2110 – 2155 MHz: Down-link (Node B transmit, UE receive)

This report, while considering the radio requirements for UTRA FDD in the 1.7/2.1 GHz Band, shall investigate

- The need of 2 sets of Node B's requirements : One for the full band and another one for the restricted FCC bands given above.
- Scenarios about the use of UE's operating over 2*60 MHz in North America with possible interferers in 1755- 1770 MHz and 2155-2170 MHz.

4.2 Generate CR's to update the appropriate documents.
4.3 TSG RAN WG2 - study any issues related to UMTS at 1.7/2.1 GHz FDD band-signalling aspects.
4.4 TSG RAN WG3 - study any possible interface impacts to UMTS networks.
4.5 Any additional related issues.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

12 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#23 (March 2004)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#23 (March 2004)	
25.113		Base Station Electromagnetic compatibility	RAN#23 (March 2004)	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#23 (March 2004)	
25.141		Base station conformance testing (FDD)	RAN#23 (March 2004)	
25.331		RRC Protocol	RAN#23 (March 2004)	
25.942		RF System Scenarios	RAN#23 (March 2004)	
25.306		Radio UE capability	RAN#23 (March 2004)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#23 (March 2004)	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T#24 (June 2004)	

11 Work item raporteurs

Jussi Numminen, Nokia

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
(Cingular Wireless LLC, Nokia, Siemens, Nortel Networks, Ericsson)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:

This WI is a building block part of the radio interface improvement feature.

4.1.6 Improved Receiver Performance Requirements for HSDPA

Feature Description Sheet in RAN_Work_Items.

4.1.6.1 Performance Requirements of Receive Diversity for HSDPA

Approved as RP-030731 at TSG RAN #22.
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-050004.

Work Item Description

Title: Performance Requirements of Receive Diversity for HSDPA

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Performance requirements for HSDPA UE were discussed in RAN WG4, and the requirements for RAKE receiver are currently specified in TS25.101 for the 5 and 10 code UE. As the next step, in order to enhance the benefits of HSDPA as a feature in 3GPP, it is proposed that a Rx Diversity option should be considered since it can significantly and robustly enhance the coverage, cell capacity and the peak data rate in a HSDPA system.
Therefore, it is proposed that the performance requirements of receive diversity should be discussed, and specified in TS 25.101. It is also proposed that Receive diversity shall be an optional capability for a HSDPA UE terminal.
Receive diversity is a simple structure which does not require a study to define a reference structure for the receiver. Therefore, this work item should only focus on Rx diversity as an enhancement for HSDPA.

4 Objective

The purpose of this work item is to specify the performance requirements based on receive diversity for HSDPA UE. However, UE is allowed to meet the requirements with any means.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X			
No	X		X	X	X
Don't know					

11 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments
25.101		UE Radio transmission and reception (FDD)		RAN#27		

11 Work item rapporteurs

Takehiro Nakamura (NTT DoCoMo)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
3, AT&T Wireless Services, Cingular Wireless, Ericsson, Fujitsu, InterDigital Communications Corp. ,Lucent Technologies, Motorola, NEC, Nokia, NTT DoCoMo, Orange, Panasonic, Samsung, Siemens, Telecom Italia, T-Mobile, Vodafone Group

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block is Improved Receiver Performance Requirements for HSDPA

4.2 Location services enhancements 2 (Rel-6)

This is a generic Feature led by SA WG2

4.2.1 UE positioning

This is a generic Building Block led by TSG RAN. See Description Sheet in file RAN_Work_Items.

4.2.1.1 Open interface between the SMLC and the SRNC within the UTRAN to support Rel-4 positioning methods

Last distributed as: RAN_Work_Items_after_RAN_16 (originally RP-010719)

Work Item Description

Title: Open interface between the SMLC and the SRNC within the UTRAN to support Rel-4 positioning methods

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

In 3GPP standalone SMLC has been specified for A-GPS method and it is needed to consider also other Rel'4 positioning methods .

4 Objective

The objective of this work item is to extend the Iupc interface for the support of all Rel'4 positioning methods positioning, i.e. Cell ID based, OTDOA based and A-GPS

It shall be transparent for the UE whether standalone SMLC is used or not.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
New TR	SRNC – SMLC Location Protocol Architecture and Protocol Aspects	RAN 2	RAN 3	RAN #20	RAN #21	See Note 1.

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN architecture description; Stage 2	RAN #21	Extend current Iu-pc interface as defined in 25.305
25.305		UTRAN Stage 2	RAN #21	Modify Network Reference Model, to allow for Cell ID based, OTDOA and A-GPS positioning methods.

Note 1 : the TR should identify the architectural alternatives with their pros and cons from the SMLC/SRNC functional split point of view
The SMLC principle will be such that the SRNC can query the standalone SMLC for the position of the UE.

11 Work item raporteurs

Meik Kottkamp, Siemens, Germany

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature UE positioning

14c The WI is a Work Task: parent Building Block

4.2.1.2 A-GPS Minimum Performance Specification

Approved at TSG RAN #20 as RP-030308. Revised at TSG RAN #22 as RP-030719. Finished at TSG RAN #25 (September 2004).

Work Item Description

Title: AGPS Minimum Performance Specification Development

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

This Work Item is not related to other Work Items.

3 Justification

A-GPS has already been standardized as one of UE location technologies supported by 3GPP in R99. Associated signalling support for A-GPS has also been completed in Release 4 and 5. However, the minimum performance requirements for A-GPS measurement are currently missing in TS 25.133 (RAN WG4). Thus, there is no active effort to pursue A-GPS performance test specification in TS 34.121 (T1-RF). As a result, the location measurement reporting accuracy from different UE vendors could be different, which makes it difficult for a network operator to use these location reports to fulfil the service requirements for location clients.

Operators have already committed to deploy A-GPS with initial release of UMTS network service. It is important to speed up the standard process on A-GPS minimum performance specification in order to meet operator's early deployment requirement.

4 Objectives

This WI is to develop A-GPS minimum performance specification for both UE based and UE assisted A-GPS with following objectives:

- The minimum performance specification shall be defined based on mature and achievable A-GPS technology to limit the inconsistency of UEs' location performance in the same operational environment, which is potentially caused by different implementations from various UE vendors
- The minimum performance specification and the test cases shall take into account of variety operational scenarios of an A-GPS receiver to prevent significant performance inconsistency from different UE vendors after a UE has passed the defined test cases, when they are operating in a different environment rather than an ideal open-air condition.

5 Service Aspects

None.

6 MMI-Aspects

None.

7 Charging Aspects

None.

8 Security Aspects

None.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.171	Requirements for minimum performance of A-GPS (FDD)	WG4			RAN #25	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
34.121		Terminal conformance specification; Radio transmission and reception (FDD)		

11 Work item raporteurs

Donglin Shen – AT&T Wireless Services

12 Work item leadership

3GPP TSG RAN (WG4)

13 Supporting Companies

TSG RAN
(AWS, Nokia, Siemens, China Mobile, Rogers Wireless, Nortel, Motorola, Ericsson and Cingular Wireless)

14 Classification of the WI (if known)

	Feature (go to 14a)

	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

UE Positioning

4.3 Rel-6 RAN improvement feature

This is a generic feature. See Description Sheet in file RAN_Work_Items.

4.3.1 Beamforming enhancements

Last distributed as: RAN_Work_Items_after_RAN_15 (originally RP-010711)

Work Item Description

Title: Beamforming Enhancements (originally Beamforming)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Beamforming with dedicated pilot symbols or with S-CPICH has potential to improve system capacity. Also UTRAN RRM could be improved by defining support for measurements that take into account the possible use of beamforming with S-CPICH or with dedicated pilots only.

4 Objective

This work item should define potential new measurements for UTRA FDD for efficient support of of RRM in case beamforming is used in UTRAN.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
New TR	Beamforming Enhancements	TSG RAN WG1	TSG RAN WG4		TSG RAN#22	
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments
TS 25.133				TSG RAN#22		
TS 25.433				TSG RAN#22		
TS 25.215				TSG RAN#22		

11 Work item raporteurs

Jussi Kähtävä, Nokia.

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

UTRAN Improvement Feature

4.3.2 Rel-6 RRM optimizations for Iur and Iub

Generic Building Block, see RAN_Work_Items file.

4.3.2.1 Improved access UE measurement data for CRNC to support TDD RRM

First distributed and approved at TSG RAN #21 as RP-030539.
Work Item finished at TSG RAN #23 March 2004.

Work Item Description

Title: Improved access to User Equipment (UE) measurement data for Controlling Radio Network Controller (CRNC) to support Time Division Duplex (TDD) Radio Resource Management (RRM)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

The Controlling RNC (CRNC) is a critical element of the Radio Resource Management (RRM) function. In TDD the CRNC is responsible for Dynamic Channel Allocation (DCA). In order to effectively perform DCA, the CRNC needs access to measurements that characterize interference and path loss on both a cell and time slot basis.

Currently the Serving RNC (SRNC) requests and receives UE specific measurements. In the case that the SRNC and CRNC are not collocated, the CRNC will be unable to access these critical measurement data, even though they are inherently available to the network.

It is desirable for the CRNC to have access to UE related measurements such as:

- Downlink CCPCH RSCP
- UE TX power
- DL ISCP

The current Iur interface allows the SRNC to forward some UE related measurements in certain scenarios (e.g. DL ISCP data to support Downlink Power Control). However, there is no mechanism to allow the CRNC to request this information according to its own needs.

To better implement DCA, especially for multi-vendor configurations, it may be beneficial to provide the CRNC with a means to initiate the transfer of UE measurement data, rather than be limited by the scheduling dictated by the SRNC.

The study item Feasibility study for improved access to User Equipment (UE) measurement data for Controlling Radio Network Controller (CRNC) to support Time Division Duplex (TDD) Radio Resource Management (RRM) showed that there are benefits for the CRNC access to UE measurements and that there are feasible methods to provide the measurements without a significant amount of additional complexity.

4 Objective

The objective of this Work Item is to establish means of providing the CRNC with UE measurement data without adding unacceptable complexity or burden to the CRNC or SRNC.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.423		UTRAN Iur Interface RNSAP Signalling	RAN#23	

11 Work item raporteurs

Jim Miller, InterDigital

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN
(Interdigital, Siemens, Samsung and CATT)

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature
(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block
RRM optimizations for Iur and Iub

4.3.3 Network Assisted Cell Change (NACC) from UTRAN to GERAN

First distributed at TSG RAN #19 as RP-030156.
Work Item finished at TSG RAN#24 June 2004, last status report in RP-040148

Work Item Description

Title: Network Assisted Cell Change (NACC) from UTRAN to GERAN -Network-side aspects

1 3GPP Work Area

X	Radio Access
X?	Core Network
	Services

2 Linked work items

Independent feature.

3 Justification

Network Assisted Cell Change (NACC) is a feature that was specified in GERAN in Rel-4. NACC offers the possibility to reduce the delay when transiting between GPRS cells by providing the system information of the target cells.

Inter-RAT NACC for CELL_DCH signalling over the Uu was agreed in Rel-5. This WI is required to specify how the RNC acquires the System Information (GERAN SI) required to be delivered to the UE/MS as part of the NACC function.

4 Objective

The objective of this Work Item is to analyse the impacts on UTRAN architecture and provide the signalling support on the UTRAN Interfaces for Network Assisted Cell Change from UTRAN to GERAN.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
23.060		Definition of NACC from UTRAN to GERAN		
25.401		Architecture impacts of support for NACC from UTRAN to GERAN	RAN #24	
25.410		Support of NACC on the Iu interface	RAN #24	
25.413		Signalling support for NACC from UTRAN to GERAN on Iu	RAN #24	
25.420		Support of NACC on the Iur interface	RAN #24	
25.423		Signalling support for NACC on the Iur interface	RAN #24	

11 Work item raporteurs

Brendan McWilliams, Brendan.McWilliams@gb.vodafone.co.uk

12 Work item leadership

TSG RAN WG3

13 Supporting Companies

TSG RAN
(Vodafone Group, Orange, Telecom Italia, Qualcomm, Nokia, Nortel)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Radio Access Network Improvement Feature

4.3.4 Remote Control of Electrical Tilting Antennas

First distributed at TSG RAN #19 as RP-030193. Finished at TSG RAN#25 (September 2004). OAM aspects finished at TSG SA #25.

Work Item Description

Title: Remote Control of Electrical Tilting Antennas

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

RET -OAM aspects

3 Justification

Because of the interference limitation property of the CDMA based UTRAN, the tilting of antennas is essential for the successful operation and optimisation of UMTS network coverage. It would be very beneficial if it were possible to remotely control the tilting of antennas in order to optimise radio coverage areas.

The ability for the operator to control the electrical tilt of the antennas remotely from the O&M Network is currently possible via the implementation-specific interfaces between Node B Element Manager and Node B. A "remote control" mechanism would decrease the costs incurred on the operator for site visits to change the tilt of the antennas manually and simplify the redeployment of antennas in a large network.
Remote electrical tilting (RET) solutions to date are proprietary and hence interfacing a mix of antennas and Node Bs from different vendors is not possible without a standardised interface. Therefore, in order to enable flexibility for the operator in choosing their antenna supplier(s), a new interface is required between RET antenna and Node B to control the electrical tilting.
Additionally, RET functionality in the UTRAN accompanied by an appropriate set of signalling commands and control parameters from the Network Manager over the Ift-N interface would allow the operator to optimise the whole network using consistent commands – even in a multi-vendor environment.

4 Objective

The objectives of this work item are:

- Specifying a standardised open interface to enable local RET antenna-controlling functionality situated in the Node B to allow the RET antenna system being provided by a third party vendor .
- Be able to control the antenna from the Network Manager, so that the operator is able to control the RET antenna remotely and consistently across the network.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		X
No	X	X		X	
Don't know					

a) Work for TSG RAN WG 3
Definition and inclusion of the relevant items in the TSG RAN WG3 specification in order to control electrical tilting antennas

b) Work for TSG SA WG 5
Provision of the parameters / functionality across the Itf-N interface needed for a network wide controlling of RET antenna devices

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.460	UTRAN Iuant Interface: General Aspects and Principles	R3			RAN#25	
25.461	UTRAN Iuant Interface: Layer 1	R3			RAN#25	
25.462	UTRAN Iuant Interface: Signalling Transport	R3			RAN#25	
25.463	UTRAN Iuant interface: Remote Electrical Tilting (RET) antennas Application Part (RETAP) signalling	R3			RAN#25	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN architecture description; stage 2	RAN#25	

11 Work item rapporteur

Andreas Hauser, Vodafone D2 GmbH, Düsseldorf, Germany

12 Work item leadership

TSG-RAN WG 3

13 Supporting Companies

TSG RAN
(Vodafone Group, **3,** Lucent Technologies, Nortel Networks, Siemens AG, Telefónica, Telecom Italia, Alcatel)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: Parent Feature: RAN Improvement

Work Task under this block: RET -OAM aspects (WIDS: S5-048270)

4.3.5 Rel-6 RAB Support Enhancement

This is a generic feature. See Description Sheet in file RAN_Work_Items.

4.3.5.1 HS-DPCCH ACK/NACK Enhancement

Approved at TSG RAN #25 (September 2004) as RP-040390
Work Item finished at TSG RAN#26 (December 2004). Status Report in RP-040423.

Work Item Description

Title: HS-DPCCH ACK/NACK Enhancement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

The Technical Report on "HSDPA Enhancements" under the Radio Link Performance Enhancements Study Item has shown that enhancements to the HS-DPCCH ACK/NACK transmission can reduce the UE peak power when using HSDPA in UTRA FDD, which can result in improved coverage for DCH or E-DCH.

The transmission of a layer 1 preamble and postamble can improve ACK/NACK decoding reliability, enabling the current performance to be achieved with a lower HS-DPCCH transmit power.

Further resulting benefits include improving cell coverage for HSDPA.

4 Objective

The objective of this work item is to introduce layer 1 improvements to the transmission of ACK/NACK on the UTRA FDD HS-DPCCH, together with associated higher-layer signalling to activate the improvements, with the aim of improving coverage for uplink DCH or E-DCH.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.212		Multiplexing and channel coding (FDD)	RAN#26	
25.214		Physical layer procedures (FDD)	RAN#26	
25.331		Radio Resource Control (RRC); Protocol Specification	RAN#26	
25.433		UTRAN Iub interface NBAP signalling	RAN#26	

11 Work item raporteurs

Jussi Kähtävä (Nokia)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
Nokia, Philips, Mitsubishi, Siemens, T-Mobile, TeliaSonera, 3, Orange

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14 The WI is a Building Block: parent Feature
RAB support enhancements

4.3.5.2 Optimisation of downlink channelisation code utilisation

First distributed and approved at TSG RAN #23 as RP-040136
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-05001.

Work Item Description

Title: Optimisation of downlink channelisation code utilisation

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

3 Justification

Since using secondary scrambling codes introduces some loss of intra-cell orthogonality in downlink, code utilization in downlink is an important element for the efficiency of downlink in FDD UTRA cells. Several features require a UE specific downlink code for a dedicated channel, such as HSDPA which requires an associated DPCH, compressed mode by SF reduction, IMS with infrequent RTCP paquets and full headers which have to be sent with low delay. HSDPA transmissions also require channelisation codes and therefore would benefit from a limited use of secondary scrambling codes, so efficient code utilization of dedicated channels also improves HSDPA performance.

4 Objective

The objective of this work item is to introduce improvements to UTRA FDD downlink which allow a better utilization of downlink codes for dedicated channels.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR		R1	R2, R3		RAN#25	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TBD			RAN#27	

11 Work item raporteurs

Sarah Boumendil (Nortel Networks)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
(Nortel Networks, Vodafone, Ericsson, Qualcomm)

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14b The WI is a Work Task: parent Building Block
RAB support enhancements

4.3.5.3 Optimisation of channelisation code utilisation for 3.84Mcps TDD

First distributed and approved at TSG RAN #23 as RP-040130.
Split into two WIs at TSGR RAN #26 (December 2004) to separate 3.84 Mcps (This WIDS, RP-040551) and 1.28 Mcps (The WIDS below, RP-040552).
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-050012.

Work Item Description

Title: Optimisation of channelisation code utilization 3.84 Mcps TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items
Optimization of Channelisation Code Utilisation for 1.28 Mcps TDD

3 Justification
Code utilisation is an important element for the uplink and downlink efficiency of UTRA-TDD cells. Several features require a UE specific code for a dedicated channel, such as HSDPA which requires an associated DPCH, IMS with infrequent RTCP packets and full headers which have to be sent with low delay.
HSDPA transmissions also require channelisation codes and so efficient code utilisation of dedicated channels also improves HSDPA performance.
For TDD code resources are limited on both uplink and downlink. Efficient utilisation and careful management of both downlink and uplink code resources is desirable.

4 Objective
The objective of this work item is to introduce improvements which allow a better utilisation of codes for dedicated channels. This applies to the downlink and uplink for TDD.

5 Service Aspects
None

6 MMI-Aspects
None

7 Charging Aspects
None

8 Security Aspects
None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		

No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R1	R2, R3			

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TBD			RAN#27	

11 Work item raporteurs

Nicholas Anderson (IPWireless)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
IPWireless, InterDigital, Softbank, Alcatel

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14b The WI is a Work Task: parent Building Block
RAB support enhancements

4.4 Rel-6 Operations, Administration, Maintenance & Provisioning - OAM&P

Feature under the responsibility of SA WG5, check the 3GPP Work Plan for the status and the latest version of the Work Item Description Sheet.

4.4.1 Rel6 - Trace Management

Building Block under the responsibility of SA WG5, check the 3GPP Work Plan for the status and the latest version of the Work Item Description Sheet

4.4.1.1 Subscriber and Equipment Trace Support in UTRAN

Approved at TSG RAN #20 as RP-030355
Work Item finished at TSG RAN #24 June 2004, last Status Report in RP-040153.

Work Item Description

Title: Subscriber and Equipment Trace support in UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Rel6 - Trace Management

3 Justification

Subscriber and Equipment Trace provides very detailed information at call level on one or more specific mobile(s). This data is an additional source of information to Performance Measurements and allows going further in monitoring and optimisation operations.
Contrary to Performance Measurements, which are a permanent source of information, Trace is activated/deactivated on user demand for a limited period of time for specific analysis purposes. Thus, signalling support is needed on the UTRAN Interfaces for activation/deactivation of the Trace functionality, correlation of the Traces gathered in the different Nodes,…

4 Objective

The main objective of this Work Item is to analyse the impacts on UTRAN architecture and provide the signalling support on the UTRAN Interfaces to fulfill the requirements on Subscriber and Equipment Trace as defined in TS 32.421.
Another objective of the Work Item is to avoid mechanisms systematically providing the IMEI(SV) for each Iu signaling connection.

5 Service Aspects

None/Text

6 MMI-Aspects

None/Text

7 Charging Aspects

None/Text

8 Security Aspects

None/Text

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		Architecture impacts of support for Subscriber and Equipment Trace	RAN #24	
25.410		Trace Function on the Iu interface	RAN #24	
25.413		Signalling support for Subscriber and Equipment Trace on Iu	RAN #24	

11 Work item raporteurs

Yann Sehedic, sehedic@nortelnetworks.com

12 Work item leadership

TSG RAN WG3

13 Supporting Companies

TSG RAN (Nortel, Lucent, Nokia, Motorola, Telefónica, Orange)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Rel6 - Trace Management

4.5 Multimedia Broadcast and Multicast Service

Feature under the responsibility of SA WG1, see the 3GPP Work Plan for the status and the latest version of the Work Item Description Sheet.

4.5.1 Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN

Originally RP-010812 (Enhancement of Broadcast and Introduction of Multicast Capabilities in RAN), revised at TSG RAN #19 as RP-030015

The description below applies to the Task Introduction of MBMS in RAN (physical & upper layers, access network interfaces), created to formally differentiate the work from the dedicated task for MBMS UE performance when this task was approved.

Item concluded at TSG RAN#26 (December 2004). Status Report in RP-040425.

Work Item Description

Title: Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- TSG SA WG1 WI title: "**Enhancement of Broadcast and Introduction of Multicast**"
=> TS 22.146: "Multicast Broadcast Multimedia Service (MBMS)-Stage 1"

- TSG SA WG2 WI title: "**Multimedia Broadcast/Multicast Service Architecture**"
=> TR 23.846: "Multimedia Broadcast/Multicast Service; Architecture and Functional Description-Stage 2"
=> TS 23.246 "Multimedia Broadcast/Multicast Service (MBMS); Architecture and Functional Description"

- TSG CN WG1 WI title "**Support of the Multicast Broadcast Multimedia Service (MBMS) in CN protocols**"
=> TR 29.846, "Multimedia Broadcast Multicast Service; CN1 Procedure Description (Rel-6)":
- TSG GERAN WI title "**Support of the Multimedia Broadcast Multicast Service (MBMS) in GERAN**"

- TSG SA3 WI title: "**Security Aspects of Multimedia Broadcast/Multicast Service (MBMS)**"
=> TS 33.246 " Security of Multimedia Broadcast/Multicast Service "

- TSG SA4 WI: expected to be generated to address codec issues for MBMS.

3 Justification

TSG SA1 has been working on the service requirements of MBMS which is a new bearer service. TS 22.146 is the specification for the MBMS service requirements defined by TSG SA WG1. TSG SA2 has already started discussions (SA WG2 #20 meeting) on the architectural issues of MBMS.
The intention of this WI is to address the RAN issues and required changes in order to accommodate MBMS.

4 Objective

The objective of this WI is to analyse and provide the necessary changes and additions required for the efficient support of MBMS in the current RAN specifications. Some possible study areas are listed below:

- analysis and creation/modification of UTRAN functions needed to be standardized for the efficient support of MBMS
- impact on the logical/transport/physical channels
- impact on the radio interface protocols
- impact on the "MBMS context" concept on RAB signalling
- impacts on Iub and Iur and Iu-ps
- decision making process between point-to-point or point-to-multipoint configurations needed for MBMS Multicast mode
- interaction between MBMS and Iu-flex
- security aspects

5 Service Aspects

Multimedia Broadcast and Multicast service capabilities have been introduced.

6 MMI-Aspects

None

7 Charging Aspects

It shall be possible to charge the receiver of the MBMS multicast mode.

8 Security Aspects

It shall be possible to secure multicast.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X	X	
No	X				
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR 25.992	Multimedia Broadcast/Multicast Service (MBMS); UTRAN/GERAN requirements	R2	GERAN2	RAN #19	RAN #20	New Technical Report
TS 25.346	Introduction of Multimedia Broadcast/Multicast Service (MBMS) in the Radio Access Network (Stage-2)	R2	R3	RAN #20	RAN#20	New Technical Specification

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.304				
25.321				
25.322				
25.323				
25.331				

Estimated date of RAN MBMS WI completion (stage-2 and stage-3): December 2004.

11 Work item raporteurs

Juho Pirskanen, Nokia
juho.pirskanen@nokia.com

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:
This WI is a building block part of the SA1 “Multimedia Broadcast and Multicast Service” feature.

4.6 Network Sharing

Feature under the responsibility of SA WG1, see the 3GPP Work Plan for the status and the latest version of the Work Item Description Sheet.

4.6.1 Enhancement of the support of network sharing in the UTRAN

Approved in TSG RAN #21 (September 2003) as RP-030549.
Concluded in TSG RAN #26 (December 2004). Status Report in RP-040428.

Work Item Description

Title: Enhancement of the support of network sharing in the UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items
- Network sharing – Technical Report 22.951 "Service Aspects and Requirements for Network Sharing" (SA1- 31019)
- Network sharing – Technical Report 23.851 "Architecture and Functional Description" (SA2-32044)

3 Justification
Network sharing may be used to lower the initial rollout cost for new radio networks. In addition, network sharing provides possibilities for operators not owning a 3G license to be able to deliver 3G services.

Based on the work concurred in SA on "Network Sharing" TSG-RAN should develop support to this feature.

4 Objective
This work is aimed to develop stage-3 support to "Network Sharing" feature, taking into account Stage 1 and stage 2 requirements. During the work considerations on equipment complexity, current consumption and common channel capacity impacts should be analysed. The solution shall not have impact to earlier release terminals.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X	X	
No	X				X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN Overall Description	RAN#26	
25.413		UTRAN Iu interface RANAP signalling	RAN#26	
25.331		Radio Resource Control (RRC); Protocol Specification	RAN#26	
25.304		UE procedures in idle mode and procedures for cell reselection in connected mode	RAN#26	

11 Work item rapporteur

Anders Dahlén, TeliaSonera (Anders.Dahlen@TeliaSonera.com)

12 Work item leadership

TSG-RAN WG 2

13 Supporting Companies

TSG RAN
TeliaSonera, Ericsson, Nokia, Nortel, Dansk Mobiltelefon I/S (Sonofon)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: Parent Feature: Network Sharing

4.7 FDD Enhanced Uplink

First distributed and approved at TSG RAN #23 as RP-040081.
Stage 2 finished in December 2004. EDCH-Phys, EDCH-L23, EDCHIurIub finished in March 2005 (RP-050016)

Work Item Description

Title: FDD Enhanced Uplink

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- FDD Enhanced Uplink: Physical Layer
- FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17 a study item on "Uplink Enhancements for Dedicated Transport Channels" was approved. The aim of the study was to look at the feasibility of enhancing the uplink DCH operation and performance by several techniques in order to support services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming…. The RAN study has shown that various techniques, Node-B controlled scheduling, shorter TTI and a hybrid ARQ layer in the Node-B, can enhance the uplink packet transfer performance significantly compared to Release-99/Rel-4/Rel-5.

4 Objective

The technical objective of this work item is the Enhanced Uplink functionality in UTRA FDD, to improve the performance of uplink dedicated transport channels. The improvements should take into account backwards compatibility aspects.

- For radio interface physical layer, the feature includes:
  - Physical and Transport Channels mapping
  - Multiplexing and Channel Coding
  - Physical Layer procedures
  - Physical layer measurements
  - UE physical layer capabilities

- For radio interface higher RAN layers:
  - Architecture aspects
  - MAC entity (Scheduling and hybrid ARQ protocol)
  - Interlayer interactions in connected mode
  - Control plane protocols

  - User plane protocols
  - UE capabilities

- For Iur/Iub interface:
  - Control plane protocols
  - User plane protocols

- For radio transmission and reception:
- UE radio transmission and reception
- Base Station radio transmission and reception
- Base Station conformance testing
- Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.309	UTRA FDD Enhanced Uplink stage 2	R2	R1	RAN#24	RAN#25	Rapporteur: Tania Godard, Nortel

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Note: this WIDS describes the Feature and the Building Block dealing with the stage 2 aspects; the stage 3 is defined in each of the 4 work items defined for each WG. The completion date for the stage 2 is December 2004.

11 Work item raporteurs

Joakim Bergström (Ericsson)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
(Ericsson, Nokia, Nortel, Vodafone Group, Motorola, Qualcomm, TeliaSonera, Alcatel, T-mobile, Lucent Technologies, Samsung, Philips, LG Electronics, NEC, Orange, Telefonica, NTT DoCoMo, and Siemens)

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
FDD Enhanced Uplink: Physical Layer
FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

4.7.1 FDD Enhanced Uplink: Physical Layer

First distributed and approved at TSG RAN #23 as RP-040081.
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-050016.

Work Item Description

Title: FDD Enhanced Uplink: Physical Layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- FDD Enhanced Uplink
- FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17 a study item on "Uplink Enhancements for Dedicated Transport Channels" was approved. The aim of the study was to look at the feasibility of enhancing the uplink DCH operation and performance by several techniques in order to support services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming…. The RAN study has shown that various techniques, Node-B controlled scheduling, shorter TTI and a hybrid ARQ layer in the Node-B, can enhance the uplink packet transfer performance significantly compared to Release-99/Rel-4/Rel-5.

4 Objective

The technical objective of this work item is the Enhanced Uplink functionality in UTRA FDD, to improve the performance of uplink dedicated transport channels. The improvements should take into account backwards compatibility aspects.

– For physical layer, the building block includes:
  – Physical and Transport Channels mapping
  – Multiplexing and Channel Coding
  – Physical Layer procedures
  – Physical layer measurements
  – UE physical layer capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R1				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.211		Physical channels and mapping of transport channels onto physical channels (FDD)	RAN#27	
25.212		Multiplexing and channel coding (FDD)	RAN#27	
25.213		Spreading and modulation (FDD)	RAN#27	
25.214		Physical layer procedures (FDD)	RAN#27	
25.215		Physical layer; Measurements (FDD)	RAN#27	

Note: this work item is the Physical Layer part of the stage 3 of the FDD Enhanced Uplink work item.

11 Work item raporteurs

Karri Ranta-aho (Nokia)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN

(Ericsson, Nokia, Nortel, Vodafone Group, Motorola, Qualcomm, TeliaSonera, Alcatel, T-mobile, Lucent Technologies, Samsung, Philips, LG Electronics, NEC, Orange, Telefonica, NTT DoCoMo, and Siemens)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

FDD Enhanced Uplink

4.7.2 FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects

First distributed and approved at TSG RAN #23 as RP-040081.
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-050016.

Work Item Description

Title: FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- FDD Enhanced Uplink
- FDD Enhanced Uplink: Physical Layer
- FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17 a study item on "Uplink Enhancements for Dedicated Transport Channels" was approved. The aim of the study was to look at the feasibility of enhancing the uplink DCH operation and performance by several techniques in order to support services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming…. The RAN study has shown that various techniques, Node-B controlled scheduling, shorter TTI and a hybrid ARQ layer in the Node-B, can enhance the uplink packet transfer performance significantly compared to Release-99/Rel-4/Rel-5.

4 Objective

The technical objective of this work item is the Enhanced Uplink functionality in UTRA, to improve the performance of uplink dedicated transport channels. The improvements should take into account backwards compatibility aspects.

– For radio interface higher RAN layers, the building block includes:
  – Architecture aspects
  – MAC entity (Scheduling and hybrid ARQ protocol)
  – Interlayer interactions in connected mode
  – Control plane protocols
  – User plane protocols
  – UE capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R2				
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.301		Radio Interface Protocol Architecture			RAN#27	
25.302		Services provided by the physical layer			RAN#27	
25.306		UE Radio Access capabilities definition			RAN#27	
25.321		Medium Access Control (MAC) protocol specification			RAN#27	
25.331		Radio Resource Control (RRC) protocol specification			RAN#27	

Note: this work item is the Layer 2 and 3 Protocol Aspects part of the stage 3 of the FDD Enhanced Uplink work item.

11 Work item raporteurs

Joakim Bergström (Ericsson)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
(Ericsson, Nokia, Nortel, Vodafone Group, Motorola, Qualcomm, TeliaSonera, Alcatel, T-mobile, Lucent Technologies, Samsung, Philips, LG Electronics, NEC, Orange, Telefonica, NTT DoCoMo, and Siemens)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

FDD Enhanced Uplink

4.7.3 FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

First distributed and approved at TSG RAN #23 as RP-040081.
Work Item finished at TSG RAN#27 (March 2005). Status Report in RP-050016.

Work Item Description

Title: FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- FDD Enhanced Uplink
- FDD Enhanced Uplink: Physical Layer
- FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17 a study item on "Uplink Enhancements for Dedicated Transport Channels" was approved. The aim of the study was to look at the feasibility of enhancing the uplink DCH operation and performance by several techniques in order to support services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming…. The RAN study has shown that various techniques, Node-B controlled scheduling, shorter TTI and a hybrid ARQ layer in the Node-B, can enhance the uplink packet transfer performance significantly compared to Release-99/Rel-4/Rel-5.

4 Objective

The technical objective of this work item is the Enhanced Uplink functionality in UTRA, to improve the performance of uplink dedicated transport channels. The improvements should take into account backwards compatibility aspects.

– For Iur/Iub interface, the building block includes:
  – Control plane protocols
  – User plane protocols

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.42x	Iur user plane protocols for FDD Enhanced Uplink	R3		RAN#25	RAN#27	
25.43x	Iub user plane protocols for FDD Enhanced Uplink	R3		RAN#25	RAN#27	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN overall description	RAN#27	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN#27	
25.423		UTRAN Iur interface Radio Network Subsystem Application Part (RNSAP) signalling	RAN#27	
25.430		UTRAN Iub Interface: General Aspects and Principles	RAN#27	
25.433		UTRAN Iub interface NBAP signalling	RAN#27	

Note: this work item is the UTRAN Iub/Iur Protocol Aspects part of the stage 3 of the FDD Enhanced Uplink work item.

11 Work item raporteurs

Saso Stojanovski (Nortel)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
(Ericsson, Nokia, Nortel, Vodafone Group, Motorola, Qualcomm, TeliaSonera, Alcatel, T-mobile, Lucent Technologies, Samsung, Philips, LG Electronics, NEC, Orange, Telefonica, NTT DoCoMo, and Siemens)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

FDD Enhanced Uplink

Annex A: Work Items with anomalous conclusion

A.1 UE positioning in UTRA TDD

Originally RP-000053
This WI and WI 6. were replaced by WIs "Iub/Iur interfaces for UE positioning methods supported on the radio interface release 99" and " UE positioning enhancements" in TSG-RAN #9.

A.2 UE positioning in UTRA FDD

Originally RP-000135
This WI and WI 5. were replaced by WIs "Iub/Iur interfaces for UE positioning methods supported on the radio interface release 99" and " UE positioning enhancements" in TSG-RAN #9.

A.3 Hybrid ARQ II/III

Originally RP-000054
This Work Item was deleted from the approved Work Items at TSG-RAN #14

A.4 Radio Interface Testing

This Work Item was deleted from the approved Work Items at TSG-RAN #9

A.5 Requirement on Equipment

This Work Item was deleted from the approved Work Items at TSG-RAN #10

A.6 Smart antenna

Originally RP-000314
This Work Item was deleted from the approved Work Items at TSG-RAN #10

A.7 RAN Technical Small Enhancements and Improvements

Originally in RP-000468 as R4-000729
This WI was replaced by a general WI for all TSGs established during TSG-SA #10 in Bangkok. No WI sheet was needed.

A.8 Gated DPCCH Transmission

Last distributed as: RP-010266
This Work Item was deleted from the approved Work Items at TSG-RAN #12

A.9 Improved usage of downlink resource in FDD for CCTrCHs of dedicated type

This Work Item was closed at TSG RAN #17 (September 2002) due to the lack of progress. It was intended for Release 6.
Originally RP-000169

Work Item Description

Title: Improved usage of downlink resource in FDD for CCTrCHs of dedicated type

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

In the RAN 1 specifications, one CCtrCH of dedicated type may be mapped onto several physical channels (channelisation codes). However these codes must have the same spreading factor in order to have an equal physical channel segmentation. In order to have some flexibility in the resource allocation in downlink, the possibility to have multiple CCtrCHs of dedicated type was introduced in the RAN 1 specifications for R99. This allows to have codes with different spreading factors and distribute transport channels onto separate CCtrCHs taking into account possibly very different QoS requirements, which results in some cases in a smaller amount of allocated resource. RAN 2 and RAN 3 specifications do not support multiple CCTrCHs of dedicated types in R99, limiting hence the flexibility on resource allocation.

4 Objective

Introduction of the possibility to map transport channels belonging to a radio link onto multiple codes with different spreading factors as a way to minimise the overall amount of allocated resource, while fulfilling possibly very different QoS requirements for each of the transport channels,

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary	Approved at plenary	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary	Comments
25.331			RAN #18	
25.423			RAN #18	
25.433			RAN #18	
25.212			RAN #18	?
25.214			RAN #18	
25.926			RAN #18	

11 Work item raporteurs

Claudiu Mihailescu (Nortel Networks)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
x	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

radio interface improvement feature

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

A.10 Terminal power saving features

This Generic Feature was closed at TSG RAN #19 (March 2003) due to the lack of progress.

Last distributed as: RP-010485 (originally RP-000189)

Work Item Description

Title: Terminal power saving

1. 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

The UE battery is an essential resource which has direct impact on standby and connected time and can be enhanced by new features defined for UTRA.

4 Objective

The objective of this Work Item is to define new features which can contribute to gains in terms of battery saving. This encompasses both enhancements on the radio interface or network interfaces which would allow a network to optimise battery utilisation.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		×	×		
No					×
Don't know	×			×	

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

11 Work item rapporteurs

Denis Fauconnier, Nortel Networks

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature is "Radio Interface improvement"

A.11 Improvement of RRM across RNS and RNS/BSS

This Block under the RAN improvements feature was closed at TSG RAN #21 (September 2003) due to the lack of progress.

Last distributed as: RAN_Work_Items_after_RAN_16 (originally RP-010947)

Work Item Description

Title: Improvement of RRM across RNS and RNS/BSS

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

Radio resource management across RNS and RNS/BSS is a necessary tool for operators with GSM and UMTS networks. The operator must be able to place traffic on the technology that meets the operator's strategy and requirements be it for coverage, service or load. .

4 Objective

The objective of this work item is to identify tools for facilitating an efficient and cost effective method for radio resource management across RNS and RNS/BSS. The method, which allows resource management across RNS and RNS/BSS shall not affect UE/MS. The method is targeted for operation between UTRAN & Iu mode GERAN.

If there is a need to define new interface, then this interface shall be open.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X		
No	X	X		X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

This is a Release 6 work Item

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
New 3GPP TR	RRM between RNS and RNS/BSS	RAN WG3	TSG GERAN	RAN#17	RAN#22	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
				To be determined based on the method(s) agreed

11 Work item raporteurs

Antti Toskala, Nokia, Helsinki, Finland

12 Work item leadership

RAN 3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: Parent Feature: RAN Improvement

14c The WI is a Work Task: parent Building Block

A.12 Iu enhancements for IMS support in the RAN

First distributed at TSG RAN #19 as RP-030191.
This Work Item was closed in TSG RAN #24 June 2004 due to the lack of progress.

Work Item Description

Title: Iu enhancements for IMS support in the RAN

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

RAB support enhancements

3 Justification

This Work Item aims at enhancing the support of IMS in the RAN for the release 6.

Some requirements for the IMS support have been identified by SA2 and this has lead to the introduction of a new release 5 function at RAN3#34: a basic signalling indication on the Iu interface for concerned interactive RABs.
However, this indication enables a basic support for IMS by the RAN but it is believed that room of improvement may be brought e.g. by the introduction of additional QoS specific parameter(s)
.
This Work Item proposes to refine the requirements provided by SA2 from a RAN thorough perspective and evaluate possible further enhancements for the release 6 allowing some further optimisations of the handling of IMS RAB by an RNC.

4 Objective

The objective of this WI is to improve the support of RABs for IMS on the Iu interface.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.413		UTRAN Iu Interface RANAP Signalling	6 months after SA2 completion	Definition of new RAB QoS parameters and addition of procedural text

11 Work item rapporteurs

Philippe Godin (Nortel Networks)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
(Nortel Networks, AWS, 3, Ericsson)

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature
RAB support enhancement

14c The WI is a Work Task: parent Building Block

A.13 UE positioning enhancements

Last distributed as: RP-010915 (originally RP-000509)
This generic Work Item was closed in TSG RAN #24 June 2004 once that the group agreed that further work in the area should be clearly identified with a precise Work Item definition.

Work Item Description

Title: UE positioning enhancements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

UE positioning is a function of UE and UTRAN (Access Stratum) which can be utilised for a number of purposes:

- Radio Resource Management
- Support for location based services (LCS)

Different accuracy can be requested when positioning a UE for these purposes.

4 Objective

The purpose of this work item are to increase the accuracy of the UE positioning or define methods allowing UE positioning with less complexity for a given accuracy.

Examples of enhancements are:

- Addition of IPDL for UE positioning in TDD
- Almanac corrections

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be defined on a per work task basis)

This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item rapporteur

Mark Beckmann, Siemens AG

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
x	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

UE positioning

14c The WI is a Work Task: parent Building Block

A.14 Improvement of inter-frequency and inter-system measurements

Last distributed as: RAN_Work_Items_after_RAN_15 (originally RP-000180)
Stopped at TSG RAN #25 due to the lack of progress.

Work Item Description

Title: Improvement of inter-frequency and inter-system measurements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

Compressed mode in Release-99 covers limited set of methods of implementing the compressed mode for enabling measurements on other frequencies. There have been methods suggested that potentially improve the system capacity and operational flexibility in addition to the existing methods.

- The following two technologies have been identified as candidates for Release 2000 for compressed mode improvements:

1. Compressed mode with puncturing and flexible positions
2. Combination of the existing methods (including method in point 1)

4 Objective

The purpose of this work item is to work on the compressed mode improvements for improved system performance.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.212		Multiplexing and channel coding (FDD)	RAN #25	
25.215		Physical layer – Measurements (FDD)	RAN #25	
25.331		RRC Protocol Specification	RAN #25	Parameter update
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #25	Parameter update
25.433		UTRAN Iub Interface NBAP Signalling	RAN #25	Parameter update

11 Work item raporteurs

Antti Toskala, Nokia Networks

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a sub-building block part of the radio interface improvement building block.

3GPP TSG RAN Meeting #28 **RP-050378**
Quebec, Canada, 1 - 3 June 2005

Title: **3GPP TSG RAN Study Item Description Sheets after meeting #27 Active SIs**

Source: **3GPP support**

31/3/2005

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Contents

1 Introduction

This document contains Study Item sheets in TSG RAN (latest situation) for all approved Study Items. Those of the approved WIs are provided in a separate document, RAN_Work_Items. The description sheets for concluded SIs can be found in RAN_Study_Items_History.

The Feasibility Study for **Uplink enhancements for UTRA TDD** was completed. A Work Item follows. The WIDS is moved to the file RAN_Study_Items_History.

The following new Study was approved at TSG RAN #27:

- Performance Evaluation of the UE behaviour in high speed trains with speeds up to 350 kmph (RP-050146)

The table below summarizes RAN Study Items open after meeting #27:

SI Name	Acronym	Leading WG	%	Finish Date	Status Report RAN #27
Evolved UTRA and UTRAN	RANFS-Evo	All WGs		June 2006	RP-050018
Performance Evaluation of the UE behaviour in high speed trains with speeds up to 350 kmph		R4	0	Dec 2005	

2 Evolved UTRA and UTRAN

Approved at TSG RAN #26 (December 2004) as RP-040461

Study Item Description

Title: Evolved UTRA and UTRAN

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

All-IP Network (AIPN) Feasibility Study

3 Justification

With enhancements such as HSDPA and Enhanced Uplink, the 3GPP radio-access technology will be highly competitive for several years. However, to ensure competitiveness in an even longer time frame, i.e. for the next 10 years and beyond, a long-term evolution of the 3GPP radio-access technology needs to be considered.

Important parts of such a long-term evolution include reduced latency, higher user data rates, improved system capacity and coverage, and reduced cost for the operator. In order to achieve this, an evolution of the radio interface as well as the radio network architecture should be considered.

Considering a desire for even higher data rates and also taking into account future additional 3G spectrum allocations the long-term 3GPP evolution should include an evolution towards support for wider transmission bandwidth than 5 MHz. At the same time, support for transmission bandwidths of 5MHz and less than 5MHz should be investigated in order to allow for more flexibility in whichever frequency bands the system may be deployed in.

4 Objective

The objective of this study item is to develop a framework for the evolution of the 3GPP radio-access technology towards a high-data-rate, low-latency and packet-optimized radio-access technology. Thus the study should focus on supporting services provided from the PS-domain. In order to achieve this, studies should be carried out in at least the following areas:

- Related to the radio-interface physical layer (downlink and uplink):
  - e.g. means to support flexible transmission bandwidth up to 20 MHz, introduction of new transmission schemes and advanced multi-antenna technologies
- Related to the radio interface layer 2 and 3:
  - e.g. signaling optimization
- Related to the UTRAN architecture:
  - identify the most optimum UTRAN network architecture and functional split between RAN network nodes, not precluding considerations on the functional split between UTRAN and CN (SA2 experts should be invited to the latter topic)
- RF-related issues

The targets for the evolution of the radio-interface and radio-access network architecture should be:

- Significantly increased peak data rate e.g. 100 Mbps (downlink) and 50 Mbps (uplink)
- Increase "cell edge bitrate" whilst maintaining same site locations as deployed today
- Significantly improved spectrum efficiency (e.g. 2-4 x Rel6)
- Possibility for a Radio-access network latency (user-plane UE – RNC (or corresponding node above Node B) - UE) below 10 ms
- Significantly reduced C-plane latency (e.g. including the possibility to exchange user-plane data starting from camped-state with a transition time of less than 100 ms (excluding downlink paging delay))
- Scaleable bandwidth
    - 5, 10, 20 and possibly 15 MHz
    - [1.25,] 2.5 MHz: to allow flexibility in narrow spectral allocations where the system may be deployed
- Support for inter-working with existing 3G systems and non-3GPP specified systems
- Further enhanced MBMS
- Reduced CAPEX and OPEX including backhaul
- Cost effective migration from Rel-6 UTRA radio interface and architecture
- Reasonable system and terminal complexity, cost, and power consumption.
- Support of further enhanced IMS and core network
- Backwards compatibility is highly desirable, but the trade off versus performance and/or capability enhancements should be carefully considered.
- Efficient support of the various types of services, especially from the PS domain (e.g. Voice over IP, Presence)
- System should be optimized for low mobile speed but also support high mobile speed
- Operation in paired and unpaired spectrum should not be precluded
- Possibility for simplified co-existence between operators in adjacent bands as well as cross-border co-existence

5 Service Aspects

The result will enhance the capabilities of UTRA and UTRAN, enabling more advanced services. No direct study of particular services will be done.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

The study will have to consider security aspects during the course of the work. However, security algorithms will not be studied.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X				X
Don't know				X	

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	**Title**	**Prime rsp. WG**	**2ndary rsp. WG(s)**	**Presented for endorsement at plenary#**	**Approved at plenary#**	**Comments**
25.xxx				RAN#31	RAN#32	Technical Report

Affected existing specifications				
Spec No.	**CR**	**Subject**	**Approved at plenary#**	**Comments**
None				

11 Study item raporteurs

Takehiro Nakamura (NTT DoCoMo)
(vice rapporteur) Don Zelmar (Cingular)

12 Work item leadership

WG1, WG2, WG3 and WG4

13 Supporting Companies

TSG RAN
Alcatel, Cingular, CMCC, Ericsson, Fujitsu, LG Electronics, Huawei, Lucent Technologies, Mitsubishi Electric, Motorola, NEC, Nokia, Nortel Networks, NTT DoCoMo, Orange, Panasonic, Philips, Qualcomm Europe, Samsung, Sharp, Siemens, Telecom Italia, Telefonica, TeliaSonera, T-Mobile, Vodafone

14 Classification of the WI (if known)

The WI is a Study Item

3 Performance Evaluation of the UE behaviour in high speed trains with speeds up to 350 kmph

Approved at TSG RAN #27 (March 2005) as RP-050146

Study Item Description

Title: Performance Evaluation of the UE behaviour in high speed trains with speeds up to 350 kmph

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

The behaviour of the UE in high mobility environments is described in the current specifications up to velocities of 250 kph and 120 kmph for HSDPA. In order to ensure a certain level of performance in terms of appropriate data rates (throughput) and QoS for the user in mobility environments with higher speeds, some work is necessary.

4 Objective

The aim of this study item is to

1. identify realistic propagation conditions and multipath models for high speed train environments
2. decide on the need to perform simulations of the UE behaviour for speeds up to 350 kph in high speed train environments including HSDPA
3. decide on the need to define minimum performance requirements for the UE and the network assuming high speed train environments with speeds up to 350 kmph
4. Identify impact to other groups

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
25.9XX	Performance Evaluation of the UE behaviour in high speed trains with speeds up to 350 kmph	RAN4	RAN1, RAN2, RAN3	RAN#29	RAN#30	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Study item rapporteurs

Mike Vogel, Vodafone DE
Mike.vogel@vodafone.com

12 Study item leadership

TSG-RAN WG4

13 Supporting companies

TSG RAN
Vodafone Group, Nortel, T-Mobile, Nokia, Ericsson, Orange, Siemens

14 Classification of the WI

TSG RAN Study Item

Contents

1 Introduction

This document contains WI Description Sheets in TSG RAN for active Work Items after TSG RAN meeting #27. Those of the approved study items are provided in a separate document, RAN_Study_Items. The WI sheets for finished WIs can be found in RAN_Work_Items_History.

The following Work Items were completed at TSG RAN#27 and the Description Sheets are moved to the file RAN_Work_Items_History:

- **Performance Requirements of Receive Diversity for HSDPA**
- **Optimisation of downlink channelisation code utilisation**
- **Optimisation of downlink channelisation code utilisation for 3.84 Mcps TDD**
- **FDD Enhanced Uplink**
  - **FDD Enhanced Uplink - Physical Layer**
  - **FDD Enhanced Uplink - Layer 2 and 3 Protocol Aspects**
  - **FDD Enhanced Uplink - UTRAN Iub/Iur Protocol Aspects**
  - FDD Enhanced Uplink - RF is not finished, due for June 2005.

The completion date of the **UMTS900** WI is delayed to December 2005 to cope with a new set of scenarios.

The WI Description Sheet of **UE Antenna Performance Evaluation Method and Requirements** is updated to take into account that the Methods will also be used for 2G terminals, in line with the new WI created by GERAN.

The following new Items were approved at TSG RAN#27, their WIDS are introduced in this document:

- **3.84 Mcps TDD Enhanced Uplink**
  New Feature, completion by June 2006, WIDS in RP-050100
- **CS and PS call setup delay improvement**
  WG2 leads, completion by December 2005, RP-050162
- **UE performance requirements for MBMS (TDD)**
  WG4 leads, completion by March 2006, WIDS in RP-050156
- **Improved support of IMS Realtime Services using HSDPA/EDCH**
  WG2 leads, completion by December 2005, WIDS in RP-050160

The table below summarizes RAN Work Items open after meeting #27:

Type	WI Name	WI Code	Leading WG	%	Finish Date	Status Report at RP#27
Feat	**Rel-6 Improvements of Radio Interface**	RInImp	RP			
BB	Improved Receiver Performance Requirements for HSDPA	RInImp-HSPerf	R4		June 2005	
WT	Improved Minimum Performance Requirements for HSDPA UE categories 7 and 8	RInImp-HSPerf-10code	R4	50	June 2005	RP-050005
Feat	**Rel-6 RAN improvements**	RANimp	RP			
BB	RAB support enhancement	RANimp-RABSE	R2	85	June 2005	RP-050010
BB	Introduction of MBMS in RAN	MBMS-RAN	RP			
WT	UE Performance Requirements for MBMS	MBMS-RAN-RF	R4	20	Sept 2005	RP-050015
WT	UE Performance Requirements for MBMS (TDD)	MBMS-RAN-RF-	R4	0	March 2006	

		TDD				
Feat	**FDD Enhanced Uplink**	EDCH	RP		June 2005	RP-050016
BB	FDD Enhanced Uplink - RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing	EDCH-RF	R4	35	June 2005	
Feat	**Rel-7 Improvements of Radio Interface**	RInImp	RP			
BB	UMTS 2.6 GHz	RInImp-UMTS2600	R4	60	June 2005	RP-050006
BB	UMTS 2.6 GHz TDD	RInImp-UMTS2600TDD	R4	5	Dec 2005	RP-050007
BB	UMTS 900	RInImp-UMTS900	R4	10	Dec 2005	RP-050008
BB	UE Antenna Performance Evaluation Method and Requirements	RInImp-UEAnt	R4	20	Sept 2005	RP-050009
BB	Improved support of IMS Real time Services using HSDPA/HSUPA		R2	0	Dec 2005	
Feat	**Rel-7 RAN improvements**	RANimp	RP			
BB	RAB support enhancement	RANimp-RABSE	R2			
WT	Optimisation of channelisation code utilisation for 1.28 Mcps TDD	RANimp-RABSE-CodOptLCRTDD	R1	35	Sept 2005	
BB	CS and PS Call Setup Delay Improvement		R2	0	Dec 2005	
BB	UE positioning Rel-7	LCS3-UEpos	RP			
WT	Inclusion of Uplink TDOA UE positioning method in the UTRAN specifications	LCS3-UEPos-UTDOA	R2	20	June 2006	RP-050014
Feat	**Multiple Input Multiple Output antennas (MIMO)**	MIMO	R1		Dec 2005	On hold
BB	MIMO - Physical layer	MIMO-Phys	R1	60	March 2005	
BB	MIMO - Layer 2,3 aspects	MIMO-L23	R2	0	Dec 2005	
BB	MIMO - Iub/Iur Protocol Aspects	MIMO-IurIub	R3	0	Dec 2005	
BB	MIMO - RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing	MIMO-RF	R4	5	Dec 2005	
Feat	**7.68Mcps TDD option**	VHCRTDD	RP		March 2006	RP-050017
BB	7.68Mcps TDD option: Stage 2	VHCRTDD-Stage2	R1	5	Sept 2005	
BB	7.68Mcps TDD option: Physical Layer	VHCRTDD-Phys	R1	5	Sept 2005	
BB	7.68Mcps TDD option: Layer 2 and layer 3 protocol aspects	VHCRTDD-L23	R2	0	Sept 2005	
BB	7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects	VHCRTDD-IurIub	R3	5	Sept 2005	
BB	7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing	VHCRTDD-RF	R4	10	March 2006	
Feat	**3.84 Mcps TDD Enhanced Uplink**	EDCHTDD	RP	0	June 2006	
BB	3.84 Mcps TDD Enhanced Uplink: Stage 2	EDCHTDD-Stage2	R2		Dec2005	
BB	3.84 Mcps TDD Enhanced Uplink: Physical Layer	EDCHTDD-Phys	R1	0	March 2006	
BB	3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects	EDCHTDD-L23	R2	0	March 2006	
BB	3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects	EDCHTDD-IurIub	R3	0	March 2006	
BB	3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing	EDCHTDD-RF	R4	0	June 2005	

2 Radio Interface Improvement Feature

Last distributed as: RAN_Work_Items_after_RAN_15 (originally WI-Radio-if-improve2)

Work Item Description

Title: Radio Interface Improvement

This work item intends to introduce new mechanisms allowing improvements on the way the Radio Interface is used.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

In order to cope with new techniques providing more efficient use of the bandwidth for the radio interface, it is necessary to ensure backward compatibility in terms of service offering.
When a new system is designed it is quite normal that some work is required also to enhance the already defined mechanism at the physical layer as well as at the signalling level. Thus this work item will cope with technical enhancement and improvement for the Radio path.

4 Objective

The main objective for this feature is to ensure that adequate mechanisms are provided to allow enhancement of the radio interface in a backward compatible manner.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale

To be defined on a per building block basis but potentially all specifications and report of the 25 series
This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

TSG-RAN

12 Work item leadership

TSG-RAN

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature

Generic Feature

2.1 Improved Receiver Performance Requirements for HSDPA

Approved as RP-030732 at TSG RAN #22.
Modified at TSG RAN#25 (September 2004) as RP-040376.

Work Item Description

Title: Improved Receiver Performance Requirements for HSDPA

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Performance requirements for HSDPA capable UE were discussed in RAN WG4, and the requirements for RAKE receiver are currently specified in TS25.101 for the 5 and 10 code UE. As the next step, in order to enhance the benefits of HSDPA as a feature in 3GPP, it is proposed that improved receiver performance requirements should be considered since it can significantly and robustly enhance the coverage, cell capacity and the peak data rate in a HSDPA system. Therefore, it is proposed that improvement for performance requirements of HSDPA receiver should be discussed, and specified in TS 25.101. It is also proposed that these requirements shall be an optional capability for a HSDPA capable UE.

4 Objective

The purpose of this work item is to specify improved receiver performance for HSDPA capable UE, which will enhance system performance and end user service quality. Reference receiver structures for performance enhancements should be agreed in WG4. The specification shall not mandate any specific implementation to meet performance enhancement.
To meet the schedule, the work should progress in phasing as follows:

Work Task Performance Requirements of Receive Diversity for HSDPA:

- TSG RAN WG4#30, simulation assumption and cases agreed.
- TSG RAN WG4#31, review of simulation results, agreements on further simulations to conclude performance requirements.
- TSG RAN WG4#32, review of final results, conclusion of new performance requirements.
- TSG RAN WG4#33, review of simulation results, agreements on further simulations to conclude performance requirements for categories 7 and 8
- TSG RAN WG4#34, review of final results, conclusion of new performance requirements for categories 7 & 8

Work Task Improved Performance Requirements for HSDPA UE categories 7 and 8

- TSG RAN WG4#33, simulation assumption and cases agreed
- TSG RAN WG4#34, review of simulation results, agreements on further simulations to conclude performance requirements.
- TSG RAN WG4#35, review of final results, conclusion of new performance requirements.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X			
No	X		X	X	X
Don't know					

10 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#28 (June 2005)	

11 Work item rapporteurs

Takehiro Nakamura (NTT DoCoMo)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
Cingular, Nokia, NTT DoCoMo, Motorola, Panasonic, Samsung, Siemens, T-Mobile, Vodafone

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature is Improvements of Radio Interface.

2.1.1 Improved Minimum Performance Requirements for HSDPA UE categories 7 and 8

Approved at TSG RAN #25 (September 2004) as RP-040375

Work Item Description

Title: Improved Minimum Performance Requirements for HSDPA UE categories 7 and 8

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

It would be beneficial to improve in REL6 the HSPDA requirements for 10 code UEs (i.e. for the categories 7 & 8). This improvement would be targeted for high end terminals where the benefits have increased operator/network advantages while allowing categorisation of terminals (from low end to high end) based on market demand.

By improving the performance requirements of category 7 and 8 we would allow low cost terminals with 5 codes to be implemented based on RAKE. This would enable the deployment of 10 codes to be extended, which on the other hand would increase the attractiveness of higher code capability classes.

LMMSE chip level equalizer would be a suitable reference receiver for defining these performance requirement improvements as LMMSE offers gains in multipath conditions for a range of Îor/Ioc values. It also has a benefit of being a well-known advanced receiver structure.

Therefore, it is proposed to define in TS25.101 an optional performance requirement for categories 7 and 8 by changing the baseline receiver from RAKE to Equaliser (LMMSE). However, no specific implementation solution would be mandated by the performance requirements.

4 Objective

The purpose of this work item is to improve the minimum performance requirements of HSDPA UE categories 7 and 8 by providing a base line option for a LMMSE chip level equalizer. UE is allowed to meet the requirements with any means.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X			
No	X		X	X	X
Don't know					

10 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#28 (June 2005)	

11 Work item rapporteurs

Jussi Numminen (Nokia)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN

Cingular, Nokia, NTT DoCoMo, Motorola, Panasonic, Samsung, Siemens, T-Mobile, Vodafone

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature
14b The WI is a Building Block: parent Feature is Improvements of Radio Interface.
14c The WI is a Work Task: parent Building Block is Improved Receiver Performance Requirements for HSDPA

2.2 UMTS 2.6 GHz

Approved at TSG RAN #25 (September 2004) as RP-040377.
Revised at TSG RAN #26 (December 2004) as RP-040397.

Work Item Description

Title: UMTS 2.6 GHz

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Work within CEPT/PT1 regarding the ECC Decision on harmonised utilisation of spectrum for IMT-2000/UMTS systems operating within the band 2500 - 2690 MHz [Ref: 15th ECC PT1 MEETING, Draft ECC Decision on the harmonised utilisation of the band 2500 - 2690 MHz for IM T-2000/UMTS] has progressed to the extent that TSG RAN has sufficient information to commence work on specification for UMTS operating within the band 2500 - 2690 MHz.
The harmonised spectrum scheme for IMT-2000/UMTS in the band 2500 - 2690 MHz as considered by CEPT/PT1 in its current draft decision from the September PT1 meeting is as follows:

- The frequency band 2500 – 2570 MHz is paired with 2620 – 2690 MHz for FDD operation with the mobile transmit within the lower band and base transmit within the upper band.
- Administrations may assign the frequency band 2570 – 2620 MHz either for TDD or for FDD downlink (external). Any guard bands required to ensure adjacent band compatibility at 2570 MHz and 2620 MHz boundaries will be decided on a national basis and taken within the band 2570 – 2620 MHz.
- Assigned blocks shall be in multiple of 5.0 MHz.

As all the necessary information related to the paired FDD operation in 2500 – 2570 MHz with 2620 – 2690 MHz is available, TSG RAN should be able to start work on the FDD specifications operating in this part of the 2.6 GHz band.
It is expected that additional work and updates to the specifications need to be carried out at a later stage in order to support FDD DL operation in 2570 – 2620 MHz.

4 Objective

The purpose of this work item is to generate necessary information of 2.6 GHz FDD system detailed below:

- Generate a report summarizing a study of radio requirements UTRA FDD in the 2.6 GHz Band
  - 2500 – 2570 MHz: Up-link (UE transmit, Node B receive)
  - 2620 – 2690 MHz: Down-link (Node B transmit, UE receive)
- The co-existence with IMT2000 technology within 2500 – 2690 MHz shall be considered.
- Generate CR's to update the appropriate documents.

- TSG RAN WG2 - study any issues related to UMTS at 2.6 GHz FDD band-signalling aspects.
- TSG RAN WG3 - study any possible interface impacts to UMTS networks.
- Any additional related issues.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#28 (June 2005)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#28 (June 2005)	
25.113		Base Station Electromagnetic compatibility	RAN#28 (June 2005)	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#28 (June 2005)	
25.141		Base station conformance testing (FDD)	RAN#28 (June 2005)	
25.331		RRC Protocol	RAN#28 (June 2005)	
25.942		RF System Scenarios	RAN#28 (June 2005)	
25.306		Radio UE capability	RAN#28 (June 2005)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#28 (June 2005)	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	T# 28 (June 2005)	

11 Work item raporteurs

Jussi Numminen (Nokia)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
Nokia, Motorola, Siemens, Ericsson, Nortel Networks, Lucent

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:
This WI is a building block part of the radio interface improvement feature.

2.3 UMTS 2.6 GHz TDD

Approved at TSG RAN #26 (December 2004) as RP-040553

Work Item Description

Title: UMTS 2.6 GHz TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

UMTS 2.6GHz, FDD

3 Justification

Work within CEPT/PT1 regarding the ECC Decision on harmonised utilisation of spectrum for IMT-2000/UMTS systems operating within the band 2500 - 2690 MHz [Ref: 15th ECC PT1 MEETING, Draft ECC Decision on the harmonised utilisation of the band 2500 - 2690 MHz for IM T-2000/UMTS] has progressed to the extent that TSG RAN has sufficient information to commence work on specification for UMTS operating within the band 2500 - 2690 MHz.

The harmonised spectrum scheme for IMT-2000/UMTS in the band 2500 - 2690 MHz as considered by CEPT/PT1 in its current draft decision from the September PT1 meeting is as follows:

- The frequency band 2500 – 2570 MHz is paired with 2620 – 2690 MHz for FDD operation with the mobile transmit within the lower band and base transmit within the upper band.
- Administrations may assign the frequency band 2570 – 2620 MHz either for TDD or for FDD downlink (external). Any guard bands required to ensure adjacent band compatibility at 2570 MHz and 2620 MHz boundaries will be decided on a national basis and taken within the band 2570 – 2620 MHz.
- Assigned blocks shall be in multiple of 5.0 MHz.

As all the necessary information related to the unpaired TDD operation in 2570 – 2620 MHz is available, TSG RAN should be able to start work on the relevant TDD specifications operating in this part of the 2.6 GHz band.

4 Objective

The purpose of this work item is to generate necessary information for 2.6 GHz TDD system detailed below:

- Generate a report summarizing a study of radio requirements for UTRA TDD in the 2.6 GHz Band
  - 2570 - 2620 MHz TDD
- The co-existence with IMT2000 technology within 2500 – 2690 MHz shall be considered.
- Generate CR's to update the appropriate documents.
- TSG RAN WG2 - study any issues related to UMTS at 2.6 GHz TDD band-signalling aspects.
- TSG RAN WG3 - study any possible interface impacts to UMTS networks.
- Any additional related issues.

5 Service Aspects
None

6 MMI-Aspects
None

7 Charging Aspects
None

8 Security Aspects
None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

11 Expected Output and Time scale

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.102		UE Radio transmission and reception (TDD)	RAN#30 (Dec 2005)	
25.105		UTRA (BS) TDD; Radio transmission and reception	RAN#30 (Dec 2005)	
25.113		Base Station Electromagnetic compatibility	RAN#30 (Dec 2005)	
25.123		Requirements for Support of Radio Resource Management (TDD)	RAN#30 (Dec 2005)	
25.142		Base station conformance testing (TDD)	RAN#30 (Dec 2005)	
25.331		RRC Protocol	RAN#30 (Dec 2005)	
25.942		RF System Scenarios	RAN#30 (Dec 2005)	
25.306		Radio UE capability	RAN#30 (Dec 2005)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#30 (Dec 2005)	
34.122		Terminal Conformance Specification, Radio Transmission and Reception (TDD)	T# 30 (Dec 2005)	
34.124		ElectroMagnetic Compatibility (EMC) requirements for mobile terminals and ancilliary wquipment	T#30 (Dec 2005)	

11 Work item raporteurs

Shin Horng Wong (IPWireless)

12 Work item leadership

RAN WG 4

13 Supporting Companies

TSG RAN
IPWireless, Siemens AG, CATT, Huawei, UTStarcom

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block:
This WI is a building block part of the radio interface improvement feature.

2.4 UMTS 900 MHz

Approved at TSG RAN #26 (December 2004) as RP-040541.

Work Item Description

Title: UMTS 900 MHz

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None.

3 Justification

UMTS900 technical specifications for the 900 MHz band are not yet available. ECC/PT1 will start soon the UMTS900 channel arrangement work, ECC/PT1 kindly requested 3GPP to develop UMTS900 Technical Specifications in the 900 MHz band as soon as possible. Furthermore, ECC/PT1 offered close cooperation with 3GPP during this development.

3GPP TSG RAN acknowledged this request in RP-040393, and informed ECC/PT1 that a WI will be opened on the subject during TSG RAN #26.

4 Objective

The purpose of this work item is to perform the necessary work to allow the introduction of UMTS in the 900 MHz, produce the necessary UMTS900 Technical Specifications and check the current RF Scenarios against the requirements in this band. The band to be considered is as follows:

- 880 – 915 MHz: Up-link (UE transmit, Node B receive)
- 925 – 960 MHz: Down-link (Node B transmit, UE receive)

The following work is required in the RAN WG's to support the introduction of UMTS 900:

- TSG RAN WG2 - study any issues related to UMTS at 900 MHz FDD band-signalling aspects.
- TSG RAN WG3 - study any possible interface impacts to UMTS networks.
- TSG RAN WG4 -study the BS and UE minimum RF performance requirements necessary to ensure the good co-existence of GSM and UMTS in the 900 MHz band in practical deployment scenarios.
- Update the appropriate documents
- Any additional related issues.

5 Service Aspects

None.

6 MMI-Aspects

None.

7 Charging Aspects

None.

8 Security Aspects

None.

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#30 (December 2005)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#30	
25.113		Base Station Electromagnetic compatibility	RAN#30	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#30	
25.141		Base station conformance testing (FDD)	RAN#30	
25.331		RRC Protocol	RAN#30	
25.942		RF System Scenarios	RAN#30	
25.306		Radio UE capability	RAN#30	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#30	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	RAN#30	

11 Work item rapporteur(s)

Yannick Li (Nortel)

12 Work item leadership

RAN WG4

13 Supporting Companies

TSG RAN
Orange, Nortel, Alcatel, SFR, Lucent, Telefonica, BouyguesTelecom, O2, Qualcomm Europe, Nokia, Sagem

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
This WI is a building block part of the radio interface improvement feature.

2.5 UE Antenna Performance Evaluation Method and Requirements

Approved at TSG RAN #26 (December 2004) as RP-040521.
Modified at TSG RAN #27 (March 2005) to take into account 2G terminals (RP-050122).

Work Item Description

Title: UE Antenna Performance Evaluation Method and Requirements

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items
GERAN WI: "MS Antenna Performance Evaluation Method and Requirements" [GP-050284].

3 Justification
The UE antenna performance has critical impact on both system performance (throughput) and coverage. In order to ensure a certain level of coverage and QoS for the user, minimal requirements for UE antenna performance are necessary.

4 Objective
The aim of this work item is to
1. introduce a UE antenna performance evaluation method
2. define UE antenna minimal performance requirements

in the 3GPP specifications, for the speech mode (UE close to head).

5 Service Aspects
None

6 MMI-Aspects
None

7 Charging Aspects
None

8 Security Aspects
None

9 Impacts

Affects:	UICC apps	ME	AN	CN	Others
Yes		X			
No	X		X	X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	**Title**	**Prime rsp. WG**	**2ndary rsp. WG(s)**	**Presented for information at plenary#**	**Approved at plenary#**	**Comments**
25.9XX	Antenna Performance Evaluation Method for UMTS User Equipment and GSM Mobile Station	RAN4	GERAN		RAN#29, GERAN #27	

Affected existing specifications				
Spec No.	**CR**	**Subject**	**Approved at plenary#**	**Comments**
25.101		User Equipment (UE) radio transmission and reception (FDD)	RAN#28	

11 Work item rapporteurs

Christian Bergljung
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12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG RAN
TeliaSonera, T-Mobile, NTT DoCoMo, Orange, Vodafone Group, Nokia, Ericsson, Motorola, Simens

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Improvements of the radio interface

2.6 Improved support of IMS Realtime Services using HSDPA/HSUPA

Approved at TSG RAN #27 (March 2005) as RP-050160

Work Item Description

Title: Improved support of IMS Realtime Services using HSDPA/HSUPA

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

3 Justification

HSDPA and HSUPA are very important features for operators to carry efficient multimedia services in conjunction with IMS. However, there is a need to investigate further the possibilities to enhance the support for IMS real time services, e.g. minimizing the service interruption time in case of handover and ensuring efficient radio resource utilization.

4 Objective

The objective of this work item is to improve the support for IMS real time services using HSDPA/HSUPA (HS-DSCH/E-DCH)

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects	USIM	ME	AN	CN	Others

:					
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		RAN WG2	RAN1, RAN3, RAN4		RAN#30	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TBD			RAN#30	

11 Work item raporteurs

Don Zelmer (Cingular Wireless)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
Cingular Wireless, 3, Ericsson, NEC, Nokia, Telefonica, Nortel, Samsung, Lucent, CMCC, Siemens, LG, T-Mobile, Alcatel, Motorola,

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
Radio Interface Improvement

3 RAN Improvement Feature

Last distributed as: RAN_Work_Items_after_RAN_15 (originally WI-RAN-improve2)

Work Item Description

Title: RAN Improvement

This work item intends to introduce new mechanisms allowing improvements on all aspects dealing with the RNS internal interfaces as well as the interface towards the core network. In addition this includes internal mechanisms to be introduced in the Technical Specification under responsibility of TSG RAN for the RNS part of the network, e.g., algorithms for QoS handling.

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

This work item has been created to collect all evolutions of the Radio Network System. This includes transport of user and signalling plane as well as protocols over all interfaces of the RNS. The Iu and Iur reference points are also covered by this Feature description.

4 Objective

The main objective of this Feature is to cover all evolution of the internal RNS architecture and protocol.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X	
No	X	X			X
Don't know					

11 Expected Output and Time scale (to be updated at each plenary)

(to be defined on a per Building block or WT basis but this may impact most of the specifications 25 .4 series and some of the 25.3 series)

12 This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

12 Work item raporteurs

TSG-RAN

13 Work item leadership

TSG-RAN

14 Supporting Companies

TSG-RAN

15 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

16a The WI is a Feature: List of building blocks under this feature

Generic Feature

3.1 Radio access bearer support enhancement

Last distributed as: RP-010915 (originally RP-000140)

Work Item Description

Title: Radio Access Bearer support enhancement

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

3 Justification

The increasing interest in IP based services demands special optimisation of the means by which a radio access bearer can be provided by UTRAN.

4 Objective

This work item should have the scope of adding necessary functionality to the Uu, Iur and Iu interface in order to efficiently support RT traffic, e.g. VoIP. Examples of such functionality are:
- Radio Access Bearer multiplexing in PDCP
- Support of variable formats over Iu and unequal error protection over Uu
- Channel type switching for logical channels
  - Today it is only possible to switch all logical channels of one UE, not individual. For DSCH it would be much better to be able to switch single logical channels
- IP header removal as developed within GERAN
- RFC3095 context relocation in SRNS relocation

5 Service Aspects

The intention with the work item is to better and more efficient support IP based services.

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be defined on a per work task basis)
This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

Rel-6 work under this WI related to enhancement of support of IMS voice over IP is expected to be completed by March 2005

11 Work item raporteurs

TSG-RAN WG2: Juha Mikola, Nokia (juha.mikola@nokia.com)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature
(one Work Item identified as a feature)
- RAN Improvement

3.1.1 Optimisation of channelisation code utilization 1.28 Mcps TDD

Approved at TSG RAN #26 (December 2004) as RP-040552.

Work Item Description

Title: Optimisation of channelisation code utilization 1.28 Mcps TDD

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Optimisation of channelisation code utilization 3.84 Mcps TDD

3 Justification

Code utilisation is an important element for the uplink and downlink efficiency of UTRA-TDD cells. Several features require a UE specific code for a dedicated channel, such as HSDPA which requires an associated DPCH, IMS with infrequent RTCP packets and full headers which have to be sent with low delay.
HSDPA transmissions also require channelisation codes and so efficient code utilisation of dedicated channels also improves HSDPA performance.
For TDD code resources are limited on both uplink and downlink. Efficient utilisation and careful management of both downlink and uplink code resources is desirable.

4 Objective

The objective of this work item is to introduce improvements which allow a better utilisation of codes for dedicated channels. This applies to the downlink and uplink for TDD.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
TR		R1	R2, R3		RAN#29	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TBD			RAN#29	

11 Work item raporteurs

~~Nicholas Anderson (IPWireless)~~ Ka Leong Lo (UTStarcom) kaleong.lo@UTSTAR.COM

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN

IPWireless, InterDigital, Softbank, Alcatel, CATT

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14b The WI is a Work Task: parent Building Block

RAB support enhancements

3.2 RRM optimizations for Iur and Iub

Last distributed as: RAN_Work_Items_after_RAN_15 (originally RP-000310)

Work Item Description

Title: RRM optimizations for Iur and Iub

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

3 Justification

Optimising the existing procedures will increase the efficiency of UTRAN and the quality of service to the end user.

4 Objective

This work item focuses on optimizing the existing procedures and functions of Iub and Iur.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be defined on a per work task basis)
This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2nd ary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Gert-Jan van Lieshout (Ericsson)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

Radio Interface Improvement feature and UTRAN Improvement feature

14c The WI is a Work Task: parent Building Block

3.3 CS and PS Call Setup Delay Improvement

Approved at TSG RAN #27 (March 2005) as RP-050162

Work Item Description

Title: CS and PS Call Setup Delay Improvement

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

In a modern telecommunication network such as UMTS, the aim of the operator is to offer high quality of service to users. The Quality of Service is the collective effect of service performances, which determine the degree of satisfaction of a user of a service... The average user is not interested in the technical aspects of the network and it can only sense the end-to-end performance.

Under the general heading of quality of experience (QoE) one of the more noticeable points faced by the user is the apparent delay in voice call set up time. The call set up delay can be defined as the time interval from the instant the user initiate a connection request until the complete message indicating call disposition is received by the calling terminal. When establishing a connection the user, due to this delay, may think that the call has not gone through or the network is not responding which may prompt the user to re-dial or in some cases to abandon the connection attempt. Users can experience similar delays during the establishment of packet-based services such as Internet browsing. From the service provider's perspective improving the quality of service is very important giving their users a good perception of the network performance and efficiency.

This work item is intended to investigate mechanisms to improve the connection establishment times and implement those changes in the specifications.

In summary, the call setup delay is to be improved.

The delay in call set up can be attributed to:

- Processing time in the UTRAN
- Processing time in the Core network
- Processing time in UE
- Call setup and alerting phase in the core network
- UTRAN and CN Protocols and associated overhead including protocol conversion
- Signalling delay on the air interface
- Signalling delay on UTRAN interfaces and towards CN
- NAS procedures

Furthermore, it could be due to the following factors:

- Complex protocols in UTRAN and Core Network side

This work item shall not delay the finalization of the already ongoing work for release 6 targeting faster channel setup times.

4 Objective

The objectives of this work item are:

- To review the CS and PS Call and session Setup procedures in UMTS
- To highlight the improvements where call and session setup process can be improved and consider impacts the relevant specifications
- To highlight the improvements to the reactivation of a data session that was in a "dormant" state, i.e. a data session that had not been generating user traffic in the recent past
- To identify possible ways to enhance call and session setup performance whilst keeping in mind R99 backwards compatibility
- To put forward change request relevant to specifications
- To focus on the reduction of delay caused by RAN related aspects
- To review performance requirements for e.g. RRC procedures

This investigation should determine possible enhancements, which will be documented in a technical report. The report should also propose in the conclusion suggested changes to existing specifications.
Priorities should be given to decrease the latency, which is caused by the different factors.
Solutions with limited impact on the UE development should be preferred in order to ensure a fast delivery.
The relevant specifications should be enhanced as soon as a solution can be agreed in the technical working groups. Change Requests should be approved for the earliest possible release of the 3GPP specifications.
Solutions with limited impact on the UE development should be preferred in order to ensure a fast delivery.

5 Service Aspects

None

6 MMI-Aspects

None.

7 Charging Aspects

TBD

8 Security Aspects

TBD

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X	X	X	
No	X				
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 25.XXX	CS and PS Call Set Up Delay Improvement	RAN2	RAN3 RAN1 CN1	29	30	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.331				
25.321				
25.322				

11 Work item rapporteur(s)

Juho Pirskanen – Nokia (juho.pirskanen@nokia.com)

12 Work item leadership

TSG RAN WG2

13 Supporting Companies

TSG RAN

3, Ericsson, LG, Motorola, NEC, Nokia, Nortel, Qualcomm, Samsung, Siemens, Telia-Sonera, T-Mobile

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

RAN Improvement feature

4 Location Services

This is a SA WG2 feature

4.1 UE Positioning

Last distributed as: UE_positioning.doc

Work Item Description

Title: UE positioning

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- Location Based Services (LCS)
- Low Chip rate TDD option

3 Justification

UE positioning is a function of UE and UTRAN (Access Stratum) which can be useful for a number of purposes:

- Radio Resource Management
- Support for location based services (LCS)

4 Objective

UE positioning is a feature that allows:

- UTRAN to calculate the geographical co-ordinates of a UE known by UTRAN
- UTRAN to provide sufficient information so that capable UEs can calculate autonomously their geographical co-ordinates
- UTRAN to answer to Core Networks requests for UE position

UE positioning feature encompasses a collection of positioning methods, allowing different level of accuracy and operational scenarios.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

This is a feature which is supported in release 99. For output and timescales, refer to the appropriate building block under the feature.

11 Work item rapporteur

Denis Fauconnier, Nortel Networks

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

x	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

- UE positioning enhancements
- Iub/Iur interfaces for UE positioning methods supported on the radio interface release 99

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

4.1.1 Uplink TDOA UE positioning

Approved at TSG RAN #25 (September 2004) as RP-040387.

Work Item Description

Title: Inclusion of Uplink TDOA UE positioning method in the UTRAN specifications

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

UE Positioning

3 Justification

The Uplink TDOA (U-TDOA) location method has been standardized in the GSM circuit switched environment and standardization in the GSM packet switched environment (GPRS) is proceeding. Some carriers have expressed an interest in using the U-TDOA location technology for UMTS. The U-TDOA standardization process should begin in order to facilitate a seamless upgrade path to UMTS networks.

4 Objective

The objective of this work item is to include Uplink TDOA as a positioning methodology within the UTRAN specifications.

The implementation will be a Stand-Alone SMLC (SAS) based overlay network that interfaces to the UTRAN on the Iupc interface.

This work item is intended to complement already standardized location methods and existing location work items.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others

Yes			X		
No	X	X		X	
Don't know					X

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.305		Stage 2 Functional Specification of UE Positioning in UTRAN			RAN #28	
25.453		UTRAN Iupc Interface: PCAP Signaling			RAN #30	
25.1XX		LMU Performance Specification			RAN #32	
-		Other specifications as required				

11 Work item raporteurs

Robert Gross, Rhys Robinson, TruePosition, Inc.

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
Cingular Wireless, T-Mobile USA, TruePosition, Andrew Corporation, SBC Communications

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

UE Positioning

5 Multimedia Broadcast and Multicast Service

This is a SA WG1 feature

5.1 Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN

WIDS can be found in the file RAN_Work_Items_History.

5.1.1 UE Performance Requirements for MBMS

Approved at TSG RAN #25 (September 2004) as RP-040370

Work Item Description

Title: UE Performance Requirements for MBMS

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN.

3 Justification

In order to facilitate the deployment of the MBMS feature, it is essential to ensure that MBMS capable UE are supporting a minimum level of performance in terms of P2M radio link reception.

4 Objective

The aim of this work item is to define performance requirements for the support of the MBMS feature in the UE. This will encompass the definition of performance requirements for the support of MBMS P2M radio links and MICH by the UE. Performance requirements will take into account the potential impacts of interruptions (e.g. measurements) (inter-RAT and/or inter-frequency). This work should consider results of TSG SA WG4 with respect to MBMS feature on relevant parts.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others
Yes		X			
No	X		X	X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		User Equipment (UE) radio transmission and reception (FDD)	RAN#29	
25.133		Requirements for support of radio resource management (FDD)	RAN#29	

Note: this work item is the Performance Requirements part of the stage 3 of the Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN work item.

11 Work item rapporteurs

Torgny Palenius
Torgny.Palenius@ericsson.com

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG RAN
Vodafone Group, NTT DoCoMo, TIM, T-Mobile, Ericsson, Nortel Networks, Panasonic

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN.

5.1.2 UE Performance Requirements for MBMS (TDD)

Approved at TSG RAN #27 (March 2005) as RP-050156

Work Item Description

Title: UE Performance Requirements for MBMS (TDD)

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN.

3 Justification

In order to facilitate the deployment of the MBMS feature, it is essential to ensure that MBMS capable UE are supporting a minimum level of performance in terms of P2M radio link reception.

4 Objective

The aim of this work item is to define performance requirements for the support of the MBMS feature in the UE. This will encompass the definition of performance requirements for the support of MBMS P2M radio links and MICH by the UE. Performance requirements will take into account the potential impacts of interruptions (e.g. measurements) (inter-RAT and/or inter-frequency). This work should consider results of TSG SA WG4 with respect to MBMS feature on relevant parts.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	UICC apps	ME	AN	CN	Others

Yes		X			
No	X		X	X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.102		User Equipment (UE) radio transmission and reception (TDD)	RAN#31	
25.123		Requirements for support of radio resource management (TDD)	RAN#31	

Note: this work item is the TDD Performance Requirements part of the stage 3 of the Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN work item.

11 Work item rapporteurs

Shin Horng Wong
shwong@ipwireless.com

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

IPWireless, UTStarcom, InterDigital, Siemens AG, CATT, Huawei

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block
Introduction of the Multimedia Broadcast Multicast Service (MBMS) in RAN.

6 Evolution of the transport in the UTRAN

Last distributed as: RAN_Work_Items_after_RAN_9 (originally WI-EVUTRAN)

Work Item Description

Title: Evolution of the transport in the UTRAN

This work item intends to introduce mechanism necessary to allow an evolution of transport mechanism in the RNS following requirement put by the core network.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

In order to cope with new requirement coming from new service definition, it is necessary to introduce mechanism to support new transport mechanisms or to improve the existing ones. Typical examples of such mechanisms are the following: introduction of an IP transport inside the RNS and AAL2 QoS optimisation

4 Objective

The main objective for this building block is to ensure that adequate mechanism are provided to handle the different type of traffic (i.e. signalling and user flow) inside the RNS to ensure that requirements in terms of QoS and delay are taken into account.

This shall be valid also for efficient O&M transport of the different interfaces inside the RNS. This includes the Iub, Iur and any protocol suites at the Iu reference point.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes			X	X (1)	
No					
Don't know					

Note 1: This cross indicates that as soon as there is an impact on the Iu supported protocol this also touch upon the Access stratum part situated in the Core network

10 Expected Output and Time scale (to be updated at each plenary) (to be defined on a per WT basis but all specifications 25 4x2 and 254x4)

This is a generic task which will be valid for all major releases

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

Francois Courau (Alcatel)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

7 Multiple Input Multiple Output Antennas (MIMO)

Originally RP-010267, last distributed at TSG RAN #19 as RP-030192

Work item sheet description

Title: Multiple Input Multiple Output Antennas

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

MIMO Physical Layer
MIMO Layer 2 and 3 Protocol Aspects
MIMO UTRAN Iub Protocol Aspects
MIMO RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#11 MIMO was presented as part of the HSDPA feasibility study. It was agreed that MIMO offers significant performance gains with acceptable impact to both UE and UTRAN. MIMO shall be optional at the UE.

4 Objective

The purpose of this work item is to improve system capacity and spectral efficiency by increasing the data throughput in the downlink within the existing 5MHz carrier. This will be achieved by means of deploying multiple antennas at both UE and Node-B side.

The technical objective of this work item is the integration of MIMO functionality in UTRA, in line with recommendations from WG1, to improve capacity and spectral efficiency. The works tasks include the support for both FDD and TDD. In those cases where differences between FDD and TDD are identified, they should be considered as separate work tasks.

For physical layer, the features include:
Physical Layer procedures

For higher layers:
Signalling aspects
UE capabilities

For Iur/Iub interface:
For the adoption of MIMO some modifications to the present Iub signalling and user data streams may need to be included.

For radio transmission and reception:

UE radio transmission and reception
BTS radio transmission and reception
BTS Conformance testing
Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.876	Multiple-Input Multiple Output Antenna Processing for HSDPA	WG1		RAN#18	RAN#23	
25.996	Spatial channel model for multiple input multiple output simulations	WG1			RAN#23	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Expected completion date of the Feature: December 2005

11 Work item raporteurs

Howard Huang (hchuang@lucent.com)

12 Work item leadership

TSG RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
MIMO Physical Layer
MIMO Layer 2 and 3 Protocol Aspects
MIMO UTRAN Iub Protocol Aspects
MIMO RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

7.1 Multiple Input Multiple Output Antennas (MIMO) – Physical Layer

First distributed at TSG RAN #19 as RP-030192

Work item sheet description

Title :Multiple Input Multiple Output Antennas – Physical Layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

MIMO Layer 2 and 3 Protocol Aspects
MIMO UTRAN Iub Protocol Aspects
MIMO RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#11 MIMO was presented as part of the HSDPA feasibility study. It was agreed that MIMO offers significant performance gains with acceptable impact to both UE and UTRAN. MIMO shall be optional at the UE.

4 Objective

The technical objective of this work item is the integration of MIMO physical layer functionality in UTRA for both FDD and TDD.

The work task for physical layer procedures will also consider additional physical layer measurements that may be required.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.876	Multiple-Input Multiple Output Antenna Processing for HSDPA	WG1			RAN#23	
25.996	Spatial channel model for multiple input multiple output simulations	WG1			RAN#23	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.211		Physical channels and mapping of transport channels onto physical channels (FDD)		
25.212		Multiplexing and channel coding (FDD)		
25.213		Spreading and modulation (FDD)		
25.214		FDD : Physical layer procedures		
25.215		Physical layer measurements (FDD)		
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)		
25.222		Multiplexing and channel coding (TDD)		
25.223		Spreading and modulation (TDD)		
25.224		Physical layer procedures (TDD)		
25.225		Physical layer; Measurements (TDD)		

Expected completion date of the Work Item: March 2005

11 Work item raporteurs

Howard Huang (hchuang@lucent.com)

12 Work item leadership

TSG RAN WG1

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

Multiple Input Multiple Output Antennas (MIMO)

14c The WI is a Work Task: parent Building Block

7.2 Multiple Input Multiple Output Antennas (MIMO) Layer 2,3 aspects

First distributed at TSG RAN #19 as RP-030192

Work item sheet description

Title: Multiple Input Multiple Output Antennas – Layer 2,3 aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

MIMO Physical Layer
MIMO UTRAN Iub Protocol Aspects
MIMO RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#11 MIMO was presented as part of the HSDPA feasibility study. It was agreed that MIMO offers significant performance gains with acceptable impact to both UE and UTRAN. MIMO shall be optional at the UE.

4 Objective

The technical objective of this work item is the integration of MIMO physical layer functionality in UTRA to improve capacity and spectral efficiency. Some additional signalling may be required to support MIMO functionality

- For higher layers:
  - Signalling aspects
  - UE capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.306		UE Radio Access Capabilites		
25.331		Radio resource control (RRC) protocol specification		
25.321		Medium access control (MAC) protocol specification		

Expected completion date of the Work Item: December 2005

11 Work item raporteurs

Howard Huang (hchuang@lucent.com)

12 Work item leadership

TSG RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

Multiple Input Multiple Output Antennas

14c The WI is a Work Task: parent Building Block

7.3 Multiple Input Multiple Output Antennas (MIMO)- Iub/Iur Protocol Aspects

First distributed at TSG RAN #19 as RP-030192

Work item sheet description

Title: Multiple Input Multiple Output Antennas- Iub/Iur Protocol Aspects.

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

MIMO Physical Layer
MIMO Layer 2 and 3 Protocol Aspects
MIMO RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#11 MIMO was presented as part of the HSDPA feasibility study. It was agreed that MIMO offers significant performance gains with acceptable impact to both UE and UTRAN. MIMO shall be optional at the UE.

4 Objective

The technical objective of this work item is the integration of MIMO physical layer functionality in UTRA to improve capacity and spectral efficiency.

For Iur/Iub interface:
For the adoption of MIMO some modifications to the present Iub signalling and user data streams may need to be included.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.401		UTRAN Overall Description		
TS 25.420		UTRAN Iur Interface: General Aspects and Principles		
TS 25.422		UTRAN Iur interface signalling transport		
TS 25.423		UTRAN Iur Interface RNSAP Signalling		
TS 25.424		UTRAN Iur interface data transport & transport signalling for CCH data streams		
TS 25.425		UTRAN Iur interface user plane protocols for CCH data streams		
TS 25.426		UTRAN I_{ur} and I_{ub} Interface Data Transport & Transport Signalling for DCH Data Streams		
TS 25.430		UTRAN I_{ub} Interface General Aspects and Principles		
TS 25.432		UTRAN Iub interface signalling transport		
TS 25.433		UTRAN Iub Interface NBAP Signalling		
TS 25.434		UTRAN Iub interface data transport & transport signalling for CCH data streams		
TS 25.435		UTRAN Iub interface user plane protocols for CCH data streams		
TS 25.442		UTRAN Implementation Specific O&M Transport		

Expected completion date of the Work Item: December 2005

11 Work item raporteurs

Howard Huang (hchuang@lucent.com)

12 Work item leadership

TSG RAN WG3

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

Multiple Input Multiple Output Antennas

14c The WI is a Work Task: parent Building Block

7.4 Multiple Input Multiple Output Antennas (MIMO) - RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

First distributed at TSG RAN #19 as RP-030192

Work item sheet description

Title: Multiple Input Multiple Output Antennas - RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

MIMO Physical Layer
MIMO Layer 2 and 3 Protocol Aspects
MIMO UTRAN Iub Protocol Aspects

3 Justification

In RAN#11 MIMO was presented as part of the HSDPA feasibility study. It was agreed that MIMO offers significant performance gains with acceptable impact to both UE and UTRAN. MIMO shall be optional at the UE.

4 Objective

The technical objective of this work item is the description of the MIMO characteristics, the system performance requirements and conformance testing.

- For radio transmission and reception:
  - UE radio transmission and reception
  - BTS radio transmission and reception
  - BTS Conformance testing

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio Transmission and Reception (FDD)		
25.102		UE Radio Transmission and Reception (TDD)		
25.104		UTRA (BS) FDD; Radio transmission and Reception		
25.105		UTRA (BS) TDD; Radio transmission and Reception		
25.123		Requirements for support of Radio Resource Management (TDD)		
25.133		Requirements for support of Radio Resource Management (FDD)		
25.141		Base station conformance testing(FDD)		
25.142		Base station conformance testing(TDD)		

Expected completion date of the Work Item: December 2005

11 Work item raporteurs

Howard Huang (hchuang@lucent.com)

12 Work item leadership

TSG RAN WG4

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

Multiple Input Multiple Output Antennas

8 FDD Enhanced Uplink

Feature description in RAN_Work_Items_History.

8.1 FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

First distributed and approved at TSG RAN #23 as RP-040081.

Work Item Description

Title: FDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- FDD Enhanced Uplink
- FDD Enhanced Uplink: Physical Layer
- FDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- FDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

3 Justification

In RAN#17 a study item on "Uplink Enhancements for Dedicated Transport Channels" was approved. The aim of the study was to look at the feasibility of enhancing the uplink DCH operation and performance by several techniques in order to support services like video-clips, multimedia, e-mail, telematics, gaming, video-streaming…. The RAN study has shown that various techniques, Node-B controlled scheduling, shorter TTI and a hybrid ARQ layer in the Node-B, can enhance the uplink packet transfer performance significantly compared to Release-99/Rel-4/Rel-5.

4 Objective

The technical objective of this work item is the Enhanced Uplink functionality in UTRA, to improve the performance of uplink dedicated transport channels. The improvements should take into account backwards compatibility aspects.

– For radio transmission and reception, the building block includes:
– UE radio transmission and reception
– Base Station radio transmission and reception
– Base Station conformance testing
– Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R4				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		User Equipment (UE) radio transmission and reception (FDD)	RAN#28	
25.104		Base Station (BS) radio transmission and reception (FDD)	RAN#28	
25.133		Requirements for support of radio resource management (FDD)	RAN#28	
25.141		Base Station (BS) conformance testing (FDD)	RAN#28	

Note: this work item is the RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing part of the stage 3 of the FDD Enhanced Uplink work item.

11 Work item raporteurs

Thomas Unshelm (Ericsson)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG RAN
(Ericsson, Nokia, Nortel, Vodafone Group, Motorola, Qualcomm, TeliaSonera, Alcatel, T-mobile, Lucent Technologies, Samsung, Philips, LG Electronics, NEC, Orange, Telefonica, NTT DoCoMo, and Siemens)

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

FDD Enhanced Uplink

9 7.68Mcps TDD option

Approved at TSG RAN #25 (September 2004) as RP-040365.

Work Item Description

Title: 7.68Mcps TDD option

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 7.68Mcps TDD option: Physical Layer
- 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects
- 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects
- 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17, a study item on "Analysis of higher chip rates for UTRA TDD evolution" was approved. The aim of the study was to look at the feasibility and performance gains of introducing a higher TDD chip rate into the 3GPP specifications.

The RAN study has shown that significant performance gains are achieved when a chip rate of 7.68Mcps is adopted and that a 7.68Mcps TDD option can coexist with, and be backwards compatible with, existing UTRA modes.

4 Objective

The technical objective of the work item is the specification of a 7.68Mcps TDD option within the 3GPP standards. The specified 7.68Mcps option should take into account backwards compatibility aspects.

- For the radio interface physical layer, the feature includes:
  - Physical and Transport Channels mapping
  - Multiplexing and Channel Coding
  - Spreading and modulation
  - Physical Layer procedures
  - Physical layer measurements
  - UE physical layer capabilities

- For radio interface higher RAN layers:
  - Architecture aspects
  - MAC entity
  - Control plane protocols

  - User plane protocols
  - UE capabilities

- For Iur/Iub interface:
  - Control plane protocols
  - User plane protocols

- For radio transmission and reception:
  - UE radio transmission and reception
  - Base Station radio transmission and reception
  - Base Station conformance testing
  - Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.3xx	7.68Mcps TDD option stage 2	R1	R4	RAN#28	RAN#29	Rapporteur: Martin Beale, IPWireless

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Note: this WIDS applies to the parent Work Item and the Stage 2 aspects; the stage 3 is defined in each of the 4 work items defined for each WG.

11 Work item raporteurs

Martin Beale (IPWireless)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, Softbank BB Corporation, Panasonic Mobile Communication

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
7.68Mcps TDD option: Stage 2
7.68Mcps TDD option: Physical Layer
7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects
7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects
7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

9.1 7.68Mcps TDD option: Physical Layer

Approved at TSG RAN #25 (September 2004) as RP-040365.

Work Item Description

Title: 7.68Mcps TDD option: Physical Layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 7.68Mcps TDD option
- 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects
- 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects
- 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17, a study item on "Analysis of higher chip rates for UTRA TDD evolution" was approved. The aim of the study was to look at the feasibility and performance gains of introducing a higher TDD chip rate into the 3GPP specifications.

The RAN study has shown that significant performance gains are achieved when a chip rate of 7.68Mcps is adopted and that a 7.68Mcps TDD option can coexist with, and be backwards compatible with, existing UTRA modes.

4 Objective

The technical objective of the work item is the specification of a 7.68Mcps TDD option within the 3GPP standards. The specified 7.68Mcps option should take into account backwards compatibility aspects.

– For physical layer, the building block includes:
  – Physical and Transport Channels mapping
  – Multiplexing and Channel Coding
  – Spreading and modulation
  – Physical Layer procedures
  – Physical layer measurements
  – UE physical layer capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R1				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)	RAN#29	
25.222		Multiplexing and channel coding (TDD)	RAN#29	
25.223		Spreading and modulation (TDD)	RAN#29	
25.224		Physical layer procedures (TDD)	RAN#29	
25.225		Physical layer; Measurements (TDD)	RAN#29	

Note: this work item is the Physical Layer part of the stage 3 of the 7.68Mcps TDD option work item.

11 Work item raporteurs

Martin Beale (IPWireless)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, Softbank BB Corporation, Panasonic Mobile Communication

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

7.68Mcps TDD option

9.2 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects

Approved at TSG RAN #25 (September 2004) as RP-040365.

Work Item Description

Title: 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 7.68Mcps TDD option
- 7.68Mcps TDD option: Physical Layer
- 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects
- 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17, a study item on "Analysis of higher chip rates for UTRA TDD evolution" was approved. The aim of the study was to look at the feasibility and performance gains of introducing a higher TDD chip rate into the 3GPP specifications.

The RAN study has shown that significant performance gains are achieved when a chip rate of 7.68Mcps is adopted and that a 7.68Mcps TDD option can coexist with, and be backwards compatible with, existing UTRA modes.

4 Objective

The technical objective of the work item is the specification of a 7.68Mcps TDD option within the 3GPP standards. The specified 7.68Mcps option should take into account backwards compatibility aspects.

– For radio interface higher RAN layers, the building block includes:
  – Architecture aspects
  – MAC entity
  – Control plane protocols
  – User plane protocols
  – UE capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R2				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.301		Radio Interface Protocol Architecture	RAN#29	
25.302		Services provided by the physical layer	RAN#29	
25.305		User Equipment (UE) positioning in Universal Terrestrial Radio Access Network (UTRAN)		
25.306		UE Radio Access capabilities definition	RAN#29	
25.321		Medium Access Control (MAC) protocol specification	RAN#29	
25.331		Radio Resource Control (RRC) protocol specification	RAN#29	

Note: this work item is the Layer 2 and 3 Protocol Aspects part of the stage 3 of the 7.68Mcps TDD option work item.

11 Work item raporteurs

Derek Richards (IPWireless)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, Softbank BB Corporation, Panasonic Mobile Communication

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

7.68Mcps TDD option

9.3 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects

Approved at TSG RAN #25 (September 2004) as RP-040365.

Work Item Description

Title: 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 7.68Mcps TDD option
- 7.68Mcps TDD option: Physical Layer
- 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects
- 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#17, a study item on "Analysis of higher chip rates for UTRA TDD evolution" was approved. The aim of the study was to look at the feasibility and performance gains of introducing a higher TDD chip rate into the 3GPP specifications.

The RAN study has shown that significant performance gains are achieved when a chip rate of 7.68Mcps is adopted and that a 7.68Mcps TDD option can coexist with, and be backwards compatible with, existing UTRA modes.

4 Objective

The technical objective of the work item is the specification of a 7.68Mcps TDD option within the 3GPP standards. The specified 7.68Mcps option should take into account backwards compatibility aspects.

– For Iur/Iub interface, the building block includes:
  – Control plane protocols
  – User plane protocols

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.42x	Iur user plane protocols for 7.68Mcps TDD option	R3		RAN#28	RAN#29	
25.43x	Iub user plane protocols for 7.68Mcps TDD option	R3		RAN#28	RAN#29	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN overall description	RAN#29	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN#29	
25.423		UTRAN Iur interface Radio Network Subsystem Application Part (RNSAP) signalling	RAN#29	
25.425		UTRAN Iur interface user plane protocols for CCH data streams	RAN#29	
25.427		UTRAN Iur and Iub interface user plane protocols for DCH data streams	RAN#29	
25.430		UTRAN Iub Interface: General Aspects and Principles	RAN#29	
25.433		UTRAN Iub interface NBAP signalling	RAN#29	
25.435		UTRAN Iub interface user plane protocols for CCH data streams	RAN#29	

Note: this work item is the UTRAN Iub/Iur Protocol Aspects part of the stage 3 of the 7.68Mcps TDD option work item.

11 Work item raporteurs

Peter Legg (IPWireless)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, Softbank BB Corporation, Panasonic Mobile Communication

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

7.68Mcps TDD option

9.4 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

Approved at TSG RAN #25 (September 2004) as RP-040365.

Work Item Description

Title: 7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 7.68Mcps TDD option
- 7.68Mcps TDD option: Physical Layer
- 7.68Mcps TDD option: Layer 2 and 3 Protocol Aspects
- 7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects

3 Justification

In RAN#17, a study item on "Analysis of higher chip rates for UTRA TDD evolution" was approved. The aim of the study was to look at the feasibility and performance gains of introducing a higher TDD chip rate into the 3GPP specifications.

The RAN study has shown that significant performance gains are achieved when a chip rate of 7.68Mcps is adopted and that a 7.68Mcps TDD option can coexist with, and be backwards compatible with, existing UTRA modes.

4 Objective

The technical objective of the work item is the specification of a 7.68Mcps TDD option within the 3GPP standards. The specified 7.68Mcps option should take into account backwards compatibility aspects.

– For radio transmission and reception, the building block includes:
  – UE radio transmission and reception
  – Base Station radio transmission and reception
  – Base Station conformance testing
  – Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R4				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.102		User Equipment (UE) radio transmission and reception (TDD)	RAN#31	
25.105		Base station (BS): radio transmission and reception (TDD)	RAN#31	
25.123		Requirements for support of radio resource management (TDD)		
25.133		Requirements for support of radio resource management (FDD)	RAN#31	
25.142		Base Station (BS) conformance testing (TDD)	RAN#31	

Note: this work item is the RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing part of the stage 3 of the 7.68Mcps TDD option work item.

11 Work item raporteurs

Shin Horng Wong (IPWireless)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, Softbank BB Corporation, Panasonic Mobile Communication

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

7.68Mcps TDD option

10 3.84 Mcps TDD Enhanced Uplink

Approved at TSG RAN #27 (March 2005) as RP-050100

Work Item Description

Title: 3.84 Mcps TDD Enhanced Uplink

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 3.84 Mcps TDD Enhanced Uplink: Physical Layer
- 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#20, a study item on "Feasibility Study on Uplink Enhancements for UTRA TDD" was approved. The aim of the study was to look into the feasibility and performance gains of uplink enhancement techniques to increase the coverage and throughput and reduce the delay of the uplink for packet-based services.

The study concluded that the incorporation of Node-B controlled rate- and physical resource scheduling, hybrid ARQ, and support for higher-order modulation are able to deliver a significant performance improvement over existing releases with manageable complexity and whilst maintaining backwards compatibility.

4 Objective

The technical objective of the study item is to introduce enhanced uplink functionality into the specifications in order to improve the performance of the uplink for packet-based services. The improvements should take into account backwards compatibility aspects.

- For radio interface physical layer, the feature includes:
  - Physical and Transport Channels mapping
  - Multiplexing and Channel Coding
  - Physical Layer procedures
  - Physical layer measurements
  - UE physical layer capabilities

- For radio interface higher RAN layers, the feature includes:
  - Architecture aspects
  - MAC entity (Scheduling and hybrid ARQ protocol)

  - Interlayer interactions in connected mode
  - Control plane protocols
  - User plane protocols
  - UE capabilities

- For Iur/Iub interface, the feature includes:
  - Control plane protocols
  - User plane protocols

- For radio transmission and reception, the feature includes:
  - UE radio transmission and reception
  - Base Station radio transmission and reception
  - Base Station conformance testing
  - Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
25.3xx	UTRA 3.84 Mcps TDD Enhanced Uplink stage 2	R2	R1	RAN#29	RAN#30	Rapporteur: Nicholas Anderson, IPWireless

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Note: this work item is the parent Work Item dealing with the stage 2 aspects; the stage 3 is defined in each of the 4 work items defined for each WG.

11 Work item raporteurs

Nicholas Anderson (IPWireless)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, InterDigital, Sasken, Orange

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)
3.84 Mcps TDD Enhanced Uplink: Physical Layer
3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

10.1 3.84 Mcps TDD Enhanced Uplink: Physical Layer

Approved at TSG RAN #27 (March 2005) as RP-050100

Work Item Description

Title: 3.84 Mcps TDD Enhanced Uplink: Physical Layer

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 3.84 Mcps TDD Enhanced Uplink
- 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#20, a study item on "Feasibility Study on Uplink Enhancements for UTRA TDD" was approved. The aim of the study was to look into the feasibility and performance gains of uplink enhancement techniques to increase the coverage and throughput and reduce the delay of the uplink for packet-based services.

The study concluded that the incorporation of Node-B controlled rate- and physical resource scheduling, hybrid ARQ, and support for higher-order modulation are able to deliver a significant performance improvement over existing releases with manageable complexity and whilst maintaining backwards compatibility.

4 Objective

The technical objective of the study item is to introduce enhanced uplink functionality into the specifications in order to improve the performance of the uplink for packet-based services. The improvements should take into account backwards compatibility aspects.

- For physical layer, the building block includes:
  - Physical and Transport Channels mapping
  - Multiplexing and Channel Coding
  - Spreading and modulation
  - Physical Layer procedures
  - Physical layer measurements
  - UE physical layer capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R1				
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.201		Physical layer – general description			RAN#31	
25.221		Physical channels and mapping of transport channels onto physical channels (TDD)			RAN#31	
25.222		Multiplexing and channel coding (TDD)			RAN#31	
25.223		Spreading and modulation (TDD)			RAN#31	
25.224		Physical layer procedures (TDD)			RAN#31	
25.225		Physical layer; Measurements (TDD)			RAN#31	

Note: this work item is the Physical Layer part of the stage 3 of the 3.84 Mcps TDD Enhanced Uplink work item.

11 Work item raporteurs

Nicholas Anderson (IPWireless)

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, InterDigital, Sasken, Orange

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

3.84 Mcps TDD Enhanced Uplink

10.2 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects

Approved at TSG RAN #27 (March 2005) as RP-050100

Work Item Description

Title: 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 3.84 Mcps TDD Enhanced Uplink
- 3.84 Mcps TDD Enhanced Uplink: Physical Layer
- 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#20, a study item on "Feasibility Study on Uplink Enhancements for UTRA TDD" was approved. The aim of the study was to look into the feasibility and performance gains of uplink enhancement techniques to increase the coverage and throughput and reduce the delay of the uplink for packet-based services.

The study concluded that the incorporation of Node-B controlled rate- and physical resource scheduling, hybrid ARQ, and support for higher-order modulation are able to deliver a significant performance improvement over existing releases with manageable complexity and whilst maintaining backwards compatibility.

4 Objective

The technical objective of the study item is to introduce enhanced uplink functionality into the specifications in order to improve the performance of the uplink for packet-based services. The improvements should take into account backwards compatibility aspects.

- For radio interface higher RAN layers, the building block includes:
  - Architecture aspects
  - MAC entity
  - Control plane protocols
  - User plane protocols
  - UE capabilities

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R2				
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.301		Radio Interface Protocol Architecture			RAN#31	
25.302		Services provided by the physical layer			RAN#31	
25.306		UE Radio Access capabilities definition			RAN#31	
25.321		Medium Access Control (MAC) protocol specification			RAN#31	
25.331		Radio Resource Control (RRC) protocol specification			RAN#31	

Note: this work item is the Layer 2 and 3 Protocol Aspects part of the stage 3 of the TDD Enhanced Uplink work item.

11 Work item raporteurs

Derek Richards (IPWireless)

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, InterDigital, Sasken, Orange

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

3.84 Mcps TDD Enhanced Uplink

10.3 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

Approved at TSG RAN #27 (March 2005) as RP-050100

Work Item Description

Title: 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 3.84 Mcps TDD Enhanced Uplink
- 3.84 Mcps TDD Enhanced Uplink: Physical Layer
- 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

3 Justification

In RAN#20, a study item on "Feasibility Study on Uplink Enhancements for UTRA TDD" was approved. The aim of the study was to look into the feasibility and performance gains of uplink enhancement techniques to increase the coverage and throughput and reduce the delay of the uplink for packet-based services.

The study concluded that the incorporation of Node-B controlled rate- and physical resource scheduling, hybrid ARQ, and support for higher-order modulation techniques are able to deliver a significant performance improvement over existing releases with manageable complexity and whilst maintaining backwards compatibility.

4 Objective

The technical objective of the study item is to introduce enhanced uplink functionality into the specifications in order to improve the performance of the uplink for packet-based services. The improvements should take into account backwards compatibility aspects.

- For Iur/Iub interface, the building block includes:
  - Control plane protocols
  - User plane protocols

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R3				

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.401		UTRAN overall description	RAN#31	
25.420		UTRAN Iur Interface: General Aspects and Principles	RAN#31	
25.423		UTRAN Iur interface Radio Network Subsystem Application Part (RNSAP) signalling	RAN#31	
25.427		UTRAN Iub/Iur Interface User Plane Protocol for DCH Data Streams	RAN #31	
25.430		UTRAN Iub Interface: General Aspects and Principles	RAN#31	
25.433		UTRAN Iub interface NBAP signalling	RAN#31	
25.435		UTRAN Iub Interface User Plane Protocols for Common Transport Channel Streams		

Note: this work item is the UTRAN Iub/Iur Protocol Aspects part of the stage 3 of the TDD Enhanced Uplink work item.

11 Work item raporteurs

Jim Miller (Interdigital)

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, InterDigital, Sasken, Orange

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

3.84 Mcps TDD Enhanced Uplink

10.4 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

Approved at TSG RAN #27 (March 2005) as RP-050100

Work Item Description

Title: 3.84 Mcps TDD Enhanced Uplink: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

- 3.84 Mcps TDD Enhanced Uplink
- 3.84 Mcps TDD Enhanced Uplink: Physical Layer
- 3.84 Mcps TDD Enhanced Uplink: Layer 2 and 3 Protocol Aspects
- 3.84 Mcps TDD Enhanced Uplink: UTRAN Iub/Iur Protocol Aspects

3 Justification

In RAN#20, a study item on "Feasibility Study on Uplink Enhancements for UTRA TDD" was approved. The aim of the study was to look into the feasibility and performance gains of uplink enhancement techniques to increase the coverage and throughput and reduce the delay of the uplink for packet-based services.

The study concluded that the incorporation of Node-B controlled rate- and physical resource scheduling, hybrid ARQ, and support for higher-order modulation are able to deliver a significant performance improvement over existing releases with manageable complexity and whilst maintaining backwards compatibility.

4 Objective

The technical objective of the study item is to introduce enhanced uplink functionality into the specifications in order to improve the performance of the uplink for packet-based services. The improvements should take into account backwards compatibility aspects.

- For radio transmission and reception, the building block includes:
  - UE radio transmission and reception
  - Base Station radio transmission and reception
  - Base Station conformance testing
  - Requirements for support of Radio Resource Management

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for endorsement at plenary#	Approved at plenary#	Comments
		R4				
Affected existing specifications						
Spec No.	CR	Subject			Approved at plenary#	Comments
25.102		User Equipment (UE) radio transmission and reception (TDD)			RAN#32	
25.105		Base station (BS): radio transmission and reception (TDD)			RAN#32	
25.123		Requirements for support of radio resource management (TDD)			RAN#32	
25.142		Base Station (BS) conformance testing (TDD)			RAN#32	

Note: this work item is the RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing part of the stage 3 of the TDD Enhanced Uplink work item.

11 Work item raporteurs

Shin Horng Wong (IPWireless)

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

TSG RAN
IPWireless Inc., UTStarcom, InterDigital, Sasken, Orange

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

3.84 Mcps TDD Enhanced Uplink