Source: **TSG-RAN**

Title: **Study Item sheets - latest situation**

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 SI sheets for finished SIs can be found in RAN_Study_Items_History (this is mentioned under the header of all relevant SIs).

See RP-020003 (draft minutes of TSG-RAN #14 meeting) for comments on the sheets provided in yellow.

Sheets in green have been re-issued where necessary and (if indeed based on the comments in RP-020003) should be considered endorsed.

For the approved Study Items in red, there is not yet a Study Item sheet.

Study Item sheets in blue are new or have changed since TSG-RAN #14 (other than because of comments at TSG-RAN #13) and need to be endorsed.

SI sheets without background colour are for SIs that are no longer current (because they are finished or have been stopped).

The approved Study Items at the end of TSG-RAN #14 were:

1. Radio link performance enhancements
2. High speed downlink packet access
3. USTS
4. Void (originally Feasibility Study for Improved Common DL Channel for Cell-FACH State)
5. Feasibility Study of UE antenna efficiency test methods performance requirements
6. Fast Cell Selection (FCS) for HS-DSCH
7. Improvement of Radio Resource Management across RNS and RNS/BSS
8. Mitigating the Effect of CPICH Interference at the UE
9. Re-introduction of the downlink SIR measurement
10. Feasibility Study on UTRA Wideband Distribution Subsystems (WDS)
11. SRNS Relocation Procedure Enhancement
12. Introduction of direct transport bearers between SRNC and Node-B
13. Feasibility Study considering the viable deployment of UTRA in additional and diverse spectrum arrangements
14. Improvement of inter-frequency and inter-system measurements for 1.28 Mcps TDd

1 Radio link performance enhancements

Last distributed as: RP-010914 (originally RP-000181rev4)

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 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
		WG1				

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)

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)

2. High speed downlink packet access

Last distributed as: RAN_Study_Items_after_RAN_9 (originally RP-000032)

This SI was finished in TSG-RAN #11. The SI sheet can be found in RAN_Study_Items_History.

3 USTS

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

This SI was finished in TSG-RAN #14. The SI sheet can be found in RAN_Study_Items_History.

4 Void (originally Feasibility Study for Improved Common DL Channel for Cell-FACH State)

Last distributed as: RAN_Study_Items_after_RAN_13 (originally RP-000190)

This Study Item was deleted from the approved Study Items at TSG-RAN #14

5 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)

This SI was finished in TSG-RAN #13. The SI sheet can be found in RAN_Study_Items_History.

6 Fast Cell Selection (FCS) for HS-DSCH

Last distributed as: RAN_Study_Items_after_RAN_13_rev (originally in RP-010227)

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 #11	RAN #16	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

Robert Love, Motorola

12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

Motorola, Nokia, T-Mobil, 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

(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)

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

Last distributed as: RP-010480

This SI was finished in TSG-RAN #14. The SI sheet can be found in RAN_Study_Items_History.

8 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)

9 Re-introduction of the downlink SIR measurement

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

This SI was finished in TSG-RAN #14. The SI sheet can be found in RAN_Study_Items_History.

10 Feasibility Study on UTRA Wideband Distribution Subsystems (WDS)

Last distributed as: RAN_Study_Items_after_RAN_14 (originally in RP-010488)

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			RAN#15	TR on feasibility for WDS

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

11 Work item rapporteurs

Andrea Casini (Tekmar Sistemi)

12 Work item leadership

TSG-RAN WG4

Supporting Companies

Agilent
Marconi Wireless
Mitsubishi Electric Telecom
Ntl
Orange
Tekmar Sistemi
Telecom Italia
Telefonica
Telia Mobile

14 Classification of the WI

	Building Block (go to 14b)

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

11 SRNS Relocation Procedure Enhancement

Last distributed as: RAN_Study_Items_after_RAN_14 (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#15	

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

Hutchison3g, Mannesmann Mobilfunk, Nokia, Omnitel-Vodafone, Sonera,

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

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

Last distributed as: RAN_Study_Items_after_RAN_14 (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 #15	
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

CATT, Ericsson, Hutchison, 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

RRM optimizations for Iur and Iub

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

Last distributed as: 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 WI.
- 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
TBD	Feasability study: UTRA operating in new frequency bands	RAN4	RAN2 RAN3	RAN #16	RAN #17	

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

11 Work item raporteurs

Peter Ståhlfjäll, Ericsson

12 Work item leadership

TSG-RAN WG4

13 Supporting Companies

Ericsson, Nokia, Telia, Sonera

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)

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

Last distributed as: RP-010929

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 #15	RAN #15	

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

CATT, QUALCOMM, SAMSUNG, SIEMENS, SKT

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 part of the radio interface improvement features.

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

(one Work Item identified as a building block)