TSG-RAN Meeting #12 *RP-010298*
Stockholm, Sweden, 12 - 15 June 2001

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-010282 (revised draft minutes of TSG-RAN #11 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-010282) 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 #11 (other than because of comments at TSG-RAN #11) and need to be endorsed.

The approved Study Items at the end of TSG-RAN #11 were:

1. Radio link performance enhancements
2. High speed downlink packet access
3. USTS
4. 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

1 Radio link performance enhancements

Last distributed as: 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 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
		WG1			RAN #14	

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: RAN_Study_Items_after_RAN_9 (originally RP-000291)

Study Item Description

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
	USTS	WG1		RAN #12	RAN #12	
25.839	USTS	WG3		RAN #12	RAN #12	

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 for Improved Common DL Channel for Cell-FACH State

Last distributed as: RAN_Study_Items_after_RAN_11 (originally RP-000190)

Study Item Description

Title: Feasibility Study for Improved Common DL Channel for Cell-FACH State

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

none

3 Justification

This effort is motivated by the desire to provide an optimized wireless IP solution for interactive and real time applications. While the existing mechanisms are sufficient for non-real time uni-directional traffic, there is some need for optimization work for bi-directional real time or interactive traffic using Common Channels available in Cell-FACH state.

4 Objective

This work item will study the feasibility of approach, perceived benefits, and scope of work for affected specifications to provide an improved common DL channel for Cell-FACH state. The study may consider an optimized FACH in the CPCH/FACH sub-state, a new use of DSCH as CPCH/DSCH in Cell-FACH state, and a new DL-CPCH. The objective is to optimize the common channel mechanism for various IP traffic including VoIP and other IP applications.

If any of the proposed alternatives are judged to be feasible and provide system benefits, a Technical Report with a new work item sheet will be drafted to propose additional new work to generate CRs for affected specifications. The new work item sheet will identify the affected specifications and scope of effort.

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 #12	

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

This study item will produce a Technical Report which will summarise the results of the study and may propose a new work item which identifies specifications to be modified.

This study item will be completed at RAN#12. Any resulting new work items will be presented and discussed at RAN#10.

11 Work item raporteurs

Joe Kwak, GBT, will be the raporteur for this study item.

12 Work item leadership

TSG-RAN WG2

13 Supporting Companies

TSG-RAN

14 Classification of the WI (if known)

This work item is a study item.

	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

N/A

14b The WI is a Building Block: parent Feature

N/A

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

N/A

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)

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

6 Fast Cell Selection (FCS) for HS-DSCH

Last distributed as: 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 information at plenary#	Approved at plenary#	Comments
TR	Evaluation of FCS for HS-DSCH	R1	R2, R3, R4	RAN #11	RAN #14	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-010275

Study Item Description

Title:

Improvement of Radio Resource Management 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. This, to study functional grouping and interface aspects of supporting both UTRAN and GERAN radio in the radio access network. It is belived that Common Radio Resource Management will allow for a easier load sharing and better quality of service management.

4 Objective

The objective of this study item is to work out the functional grouping and interface aspects in order to provide support for an open interface between the CRMS (Common Radio resource Management Server) and the RNS, in order to factiliate CRRM (Common Radio Resource Management).

The addition of CRMS shall be transparant to the UE/MS.

The objective is to look also the aspects between GERAN and UTRAN for the CRMS.

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
New 3GPP TR	CRMS – RNS Application Protocol feasibility study report	RAN3	RAN2	RAN #12	RAN #13	

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)

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

8 Mitigating the Effect of CPICH Interference at the UE

Last distributed as: RP-010260

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. Initial studies suggest that mitigating the effect of CPICH interference at the UE can significantly improve UE performance requirements and increase radio network capacity, at a relatively small price in additional complexity.

4 Objective

The initial objectives 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 initial phase, the work may then proceed to 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 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 #13	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	RAN #13	

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)

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)
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)

9 Re-introduction of the downlink SIR measurement

Last distributed as: RP-010248

A propoer SI sheet needs to be provided for TSG-RAN #12. The proposal was accepted as an SI.

Title: **Proposal to introduce the SIR measurement**
Source: **TIM/Telecom Italia Lab, Telefonica, Mobilkom Austria, AT&T Wireless Services, Blu**
Agenda item:

During TSG-RAN WG2 meeting#18 (15 – 19 January 2001), proposal R2-010217 (CR 25.302 89r1) removed the (downlink) SIR measurement. This appeared to be based on the decision not to specify the use of SIR for setting the outer loop power control. The latter decision was made in an RRM ad hoc in Turin held in February 1999. However, there was never an agreement to delete the SIR measurement itself, only an agreement that there is no need to specify the inner loop behaviour as this was seen to be implementation dependent.

However, it is believed that the SIR measurement can be a valuable tool to an operator both planning their network and in the field. This is because it can give an indication on the quality of the link in the downlink, albeit with coarse accuracy.

Similar analogy can be drawn from GSM where the RXQUAL parameter is not very well defined and does not have good accuracy. Furthermore, it is believed that this parameters is not tested and is very much implementation dependent. Yet, it is used extensively for power control and handover algorithms along with other features. Furthermore, it is a useful indicator that there is interference to a link. It must be stressed that RXQUAL has no direct relationship to speech quality but nevertheless it remains a useful indicator.

Based on such analogy and the benefits gained from experience in operation, we feel that a similar issue is needed

SIR can be seen as a measure of loss of orthogonality between codes and could be approximated to adjacent and co-channel interference effects in FDMA systems. The loss of orthogonality can be attributed to many factors such as the choice of codes on the downlink, effects of using secondary scrambling codes and more interestingly, multipath and channel conditions.

It is understood that the parameter may not be easy to define and difficult to set requirements against. Nevertheless, past experience has shown that such a parameter may still be useful. In the event, what is being requested here is that a measurement report is sent.

Proposal:
We propose that the TSG RAN mandates the relevant WGs to start the technical evaluation, in order to introduce the downlink SIR measurement in the RAN specifications. The evaluation should:

- 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.