

**TSG-SA Meeting #8
Düsseldorf, Germany, 26 - 28 June 2000**

SP-000341

Source: TSG-RAN

Title: Study Item sheets - situation at TSG-RAN #8

To: TSG-SA

This document contains Study Item sheets in TSG-RAN (situation by the beginning of TSG-RAN #8) for all approved Study Items. Those of the approved WIs are provided in a separate document (SP-000340). Revisions of nearly all Study Item sheets are necessary and the versions provided here are for information. See SP-000320 (draft minutes of TSG-RAN #8 meeting) for details.

The Study Items approved at the end of TSG-RAN #8 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

1 Radio link performance enhancements

Distributed as: RP-000181rev

Work 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 completion of Release –99, possible topics have been identified that could improve the radio link performance, especially related to the power control (inner loop) and transmission diversity methods in UTRA physical layer.

In order to improve the performance it is felt necessary to continue related studies after Release –99 completion and to include possible agreed improvements during work in the coming meetings during year 2000 to Release –2000 specifications.

4 Objective

- The purpose of this work item is to study the radio link performance enhancements.
- The following two technologies have been identified as candidates for Release 2000 for improved radio link performance:
 1. TX diversity improvements
 2. DCH/DSCH power control improvements

The following time schedule is considered for TSG RAN:

Task	Planned Start	Planned Finish
Work Item Creation	3/2000	3/2000
Work Item Approval		3/2000
Drafting and discussion, updates of	4/2000	9/2000

specifications		
Submission to TSG RAN for approval (TSG RAN WG1, WG2 & WG3 specifications)		9/2000
Submission of modifications to RAN WG4 specifications to TSG RAN for approval		12/2000
Possible remaining corrections and clarifications	09/2000	12/2000

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 resp. WG	2ndary resp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
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 #9		

25.214		Physical Layer Procedures (FDD)	RAN #9	
25.303		Interlayer procedures in connected mode	RAN #9	
25.321		MAC Protocol Specification	RAN #9	
25.331		RRC Protocol Specification	RAN #9	
25.101		UE Radio transmission and reception (FDD)	RAN #10	
25.102		UE Radio transmission and reception (TDD)	RAN #10	
25.104		BTS Radio transmission and reception (FDD)	RAN #10	
25.105		BTS Radio transmission and reception (TDD)	RAN #10	
25.423		UTRAN Iur Interface RNSAP Signalling	RAN #9	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #9	

11 Work item rapporteurs

To be decided in TSG RAN WG1

12 Work item leadership

TSG RAN WG1

13 Supporting Companies

InterDigital, Lucent Technologies, Motorola, Nokia, Nortel Networks, Qualcomm

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

Distributed as: RP-000032

Work 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

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	R1	R2, R3, R4	RAN #9	RAN #10	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

RAN WG1

13 Supporting Companies

Motorola, Nokia, BT/Cellnet, T-Mobil. NTT DoCoMo

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 USTS

Distributed as: RP-000291

Work 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

In the preparation of Release 99, USTS was proposed to RAN1 and once included in the specifications. However, mainly due to missing support from other WGs, it was postponed to Release 2000 item. 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.

The following time schedule is considered for TSG RAN:

Task	Planned Start	Planned Finish
Work Item Creation	3/2000	3/2000
Work Item Approval		3/2000
Drafting and discussion, updates of specifications	4/2000	9/2000
Submission to TSG RAN for approval (TSG RAN WG1, WG2 & WG3 specifications)		9/2000
Submission of RAN WG4 specifications to TSG RAN for approval		12/2000
Possible remaining corrections and	09/2000	12/2000

clarifications		
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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
25.211		Physical channels and mapping of transport channels onto physical channels (FDD)		RAN #9		
25.213		Spreading and modulation (FDD)		RAN #9		
25.214		FDD : Physical layer procedures		RAN #9		
25.331		Radio Resource Control (RRC) Protocol Specification		RAN #10		

25.413	UTRAN Iu Interface RANAP Signalling	RAN #10	
25.423	UTRAN Iur Interface RNSAP Signalling	RAN #10	
25.433	UTRAN Iub Interface NBAP Signalling	RAN #10	

11 Work item rapporteurs

Duk Kyung Kim (kdk@sktelecom.com)

12 Work item leadership

TSG RAN WG1

13 Supporting Companies

ETRI, LGIC, Samsung, Shinsegi, SK Telecom

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

Distributed as: RP-000190

Work Item Description

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

Intended Output

This work item will produce a study describing 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.

List of affected specs requiring change for the selected approach will be provided.

Work item description will be provided for RAN approval to continue work and provide required CRs

Impact on Other Technical Specifications and Technical Reports:

None

Technical Scope

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 over Common Channels.

Currently the downlink packet transmission over the common transport can be sent over the FACH or DSCH. Use of FACH for higher rates might have some drawbacks due to non-existence of closed loop power control on FACH. While CPCH/FACH sub-state is a strong solution for wireless IP, the above-mentioned limitation needs to be addressed. An optimization work in the downlink direction is needed. While UL-PCPCH is the optimum uplink packet data transfer, we believe that some optimization work in the downlink direction is needed. It might be possible to introduce closed loop power control on FACH via CPCH and some scheduling on FACH.

DSCH is an efficient downlink packet mechanism which is coupled with DCH. There is a need to either introduce CPCH/DSCH sub-state or a new downlink common packet mechanism coupled with UL-CPCH that retains the advantages of DSCH and yet operates with UL-CPCH.

Impact on Other 3GPP features

None

Schedule of Tasks to be Performed.

Task	Planned Start	Planned Finish
Work Task Creation	03/2000	
Work Task Approval	03/2000	
Drafting, discussions and corrections	03/2000	06/2000
Submission to TSG RAN for approval		6/2000

Supporting Individual Members

GBT, OKI, LGIC, BellSouth, Samsung, IDC, Seiko-Epson

Rapporteur

Kouros Parsa, GBT