RAN Plenary Meeting #12 ***RP-010483***

Stockholm, Sweden, June 12th – 15th, 2001

Agenda Item: **9.9**

Source: **Nokia**

Title: **Proposed WI, UE Specific beamforming with dedicated pilots**

Document for: **Decision**

---

1 Introduction

In Release'99 and Release 4 specifications contain the basic elements for the support of using dedicated pilots as the only phase reference in case of UE specific beamforming. However for the overall operation several items have not been specified including:

- UE behaviour with reconfiguration when neither Primary or secondary CPICH is not usable as phase reference anymore
- UE behaviour when starting the connection with IEs indicating to use decicated pilots only. Rel'99/Rel'4 procedure, including the time UE has from FACH reception to actual operation assumes CPICH usability.
- UE behaviour in soft handover case with dedicated pilots only, including active set size to support
- UE behaviour in handover cases between non-beamforming node B and beamforming node B, a very likely scenario to occur unless all Node Bs would have beamforming in use
- Possible measurements in UTRAN side to support RRM related to beamforming with dedicated pilots
- Related system scenarios e.g. relationship between radio links with dedicated pilots only and ones which have CPICH and dedicated pilots as phase reference
- Possible enhancements in UTRAN side for the feature support

2 Proposed way forward

It is proposed that a new WI is established under the responsibility of TSG RAN WG4, which addresses the aspects in close co-operation with other working groups to be impacted, in this case atleast TSG RAN WG1 specifications have potential to be impacted.

As this topic is also forseen to take substantial effort and invloves more than one working group, having a WI for it is the proper way to monitor the progress and ensuring visibility of the related work done in different WGs.

3 Proposed WI, UE Specific beamforming with dedicated pilots

Work Item Description

Title

UE Specific beamforming with dedicated pilots

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

UE specific beamforming with dedicated pilot symbols has potential to improve system capacity with the use of narrow UE specific beams compared to the existing capacity improvement methods such as TX diversity and beamforming with S-CPICH.

4 Objective

This work item should enable the use of UE specific beamforming with dedicated pilots only as the phase reference

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
New TR	Concept of UE specific beamforming with dedicated pilots	TSG RAN WG4	TSG RAN WG1	TSG RAN#13	TSG RAN#14	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.214			TSG RAN#14	
TS 25.133			TSG RAN#14	
TS 25.101			TSG RAN#14	
TS 25.433			TSG RAN#14	
TS 34.121			TSG T#15	

11 Work item raporteurs

Jussi Numminen, Nokia.

12 Work item leadership

TSG-RAN WG4

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