

Palm Spring, U.S.A, March 13th - 16th, 2001

Title : Proposed WI "Enhancement on the DSCH hard split mode"

Agenda Item : 6.11 "Others"

Source : Samsung Electronics and LG Electronics

Document for : Approval

This contribution contains the proposed WI sheet for new work item "Enhancement on the DSCH hard split mode " which is composed of two work tasks.

In the last TSG-RAN WG1 #17, a new TFCI coding scheme for DSCH hard split mode was proposed [1]. In the contribution, it was pointed out that, when UE moves from one RNS to another, logical split should not be used or SRNC reallocation should be done for DSCH handover. Thus, hard split has an advantage over logical split in the sense that hard split can be supported over Iur when DSCH need to be transmitted on Iur. However, the current hard split can only support 5 bit long DSCH and DCH TFCIs. To enhance this, using the new TFCI coding scheme to support the variable bit length in hard split mode is proposed. A liaison statement was sent to WG2 and WG3 asking for a confirmation of WG1's understanding of the problem and of the benefit of having more capable hard split mode TFCI, as a response to the comments made to the proposal during the meeting [2]. RAN WG2 and 3 commented that "it seems to be worthwhile that RAN1 begins to study the enhancement on hard split to support variable bit length TFCI for DCHs and DSCHs as Rel. 5 issue" and that "the proposed study would bring some functional benefit"[3][4]. This will be the 1st work task on this work item.

In the last TSG-RAN WG1 #17, TFCI power control for DSCH hard split mode was proposed [5]. TFCI2 (TFCI for DSCH) is not transmitted from all the cells in the active set when the UE is in soft handover. Thus the reliability of TFCI cannot be guaranteed. 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. To solve the problem of ensuring reliable detection without a large offset, it is proposed that the power control for DSCH should be applied to the TFCI [6]. It was decided at TSG-RAN WG1#19 that the TFCI power control would be treated as Rel' 5 issue and the related text would be included in the TR 25.841[7]. This will be the 2nd work task of this work item.

A separate Work Item sheet is attached on the proposed way to initiate the work on this WI.

REFERENCE

- [1] R1-00-1269, *Dynamic Split Mode for TFCI*
- [2] R1-01-0172, *LS on DSCH TFCI Split Mode*
- [3] R2-010246 (R1-010194), *Response to "LS on DSCH TFCI Split Mode"*.
- [4] R3-010327 (R1-010264), *Response "LS on DSCH TFCI Split Mode"*
- [5] TSG R1-00-1429, *Power control of TFCI field for DSCH in soft handover.*
- [6] TSG R1-01-125, *TFCI power control in split mode.*
- [7] TSG R1-01-380, CR for 25.841

Attachment:

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R1-01-0194(R2-01
0246).doc



R1-01-0264(R3-01
0327).doc

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Palm Spring, U.S.A, March 13th - 16th, 2001Work 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 identified 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.

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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	
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
25.212		Multiplexing and channel coding (FDD)		RAN #14		
25.214		Physical Layer Procedure (FDD)		RAN #14		
25.331		RRC Protocol Specification		RAN #14		

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25.423		UTRAN Iur Interface RNSAP Signalling	RAN #14	
25.433		UTRAN Iub Interface NBAP Signalling	RAN #14	

11 Work item rapporteurs

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12 Work item leadership

TSG-RAN WG1

13 Supporting Companies

Samsung, LG, Siemens, Qualcomm Europe, CATT, ETRI, SK Telecom, Hyundai

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