

**3GPP TSG-RAN Meeting #15
Jeju, Korea, 5 – 8, March, 2002**

RP-020046

Title: Agreed CRs (R99 and Rel-4 Category A) to TS 25.211

Source: TSG-RAN WG1

Agenda item: 7.1.3

No.	Spec	CR	Rev	R1 T-doc	Subject	Release	Cat	Workitem	V_old	V_new
1	25.211	138	1	R1-02-0424	Clarification of different diversity modes used in the same active set	R99	F	TEI	3.9.0	3.10.0
2	25.211	139	1	R1-02-0424	Clarification of different diversity modes used in the same active set	Rel-4	A	TEI	4.3.0	4.4.0

CR-Form-v4	
CHANGE REQUEST	
⌘ 25.211 CR 138 ⌘ rev 1 ⌘ Current version: 3.9.0 ⌘	

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of Different diversity modes used in the same active set		
Source:	⌘ TSG RAN WG1		
Work item code:	⌘ TEI	Date:	⌘ 19 Feb 2002
Category:	⌘ F	Release:	⌘ R99
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The LS from RAN2 (R1-02-0126) asked to clarify the statement “However, the UE shall operate this Tx diversity mode on all radio links”. Current RAN1 agreement is to allow two possible implementations. These are 1. UE assumes all the radio link is Tx-div is on regardless of the signalling of on/off signalling. 2. UE distinguish the difference of on/off of each radio link from the higher layer signalling. This proposal intends to clarify this agreement and to avoid the confusion. This CR catches the discussion at RAN1-RAN2 joint meeting from 12-020003.
Summary of change:	⌘ The statement “However, the UE shall operate this Tx diversity mode on all radio links” is proposed to clearly say what is mandatory requirement and what type of implementation is allowed. Isolated impact analysis This CR corrects a misalignment between the layer 3 and layer 1 protocols for the following cases: - The active set contains one or more link(s) with STTD activated and one or more link(s) with no Tx diversity activated. - The active set contains one or more link(s) with the same given closed loop Tx diversity mode activated and one or more link(s) with no Tx diversity activated. For UEs not implementing this CR, a consistent behaviour can not be guaranteed in these cases.
Consequences if not approved:	⌘ Specification about Tx-diversity remains incomplete. RAN1 specification and RAN2 specification don't align.

Clauses affected: ⌘ 5.3.1

Other specs affected:	⌘	<input type="checkbox"/>	Other core specifications	⌘	
		<input type="checkbox"/>	Test specifications		
		<input type="checkbox"/>	O&M Specifications		
Other comments:	⌘	<input type="text"/>			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
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5.3.1 Downlink transmit diversity

Table 10 summarizes the possible application of open and closed loop transmit diversity modes on different downlink physical channel types. Simultaneous use of STTD and closed loop modes on the same physical channel is not allowed. In addition, if Tx diversity is applied on any of the downlink physical channels it shall also be applied on P-CCPCH and SCH. Regarding CPICH transmission in case of transmit diversity, see subclause 5.3.3.1.

With respect to the usage of Tx diversity on different radio links within an active set, the following rules apply:

- Different Tx diversity modes (STTD and closed loop) shall not be used on the radio links within one active set.
- No Tx diversity on one or more radio links shall not prevent UTRAN to use Tx diversity on other radio links within the same active set.
- If STTD is activated on one or several radio links in the active set, the UE shall operate STTD either on only those radio links where STTD has been activated or on all radio links in the active set.
- If closed loop TX diversity is activated on one or several radio links in the active set, the UE shall operate closed loop TX diversity either on only those radio links where closed loop TX diversity has been activated or on all radio links in the active set. ~~However, the UE shall operate this Tx diversity mode on all radio links.~~

Furthermore, the transmit diversity mode used for a PDSCH frame shall be the same as the transmit diversity mode used for the DPCH associated with this PDSCH frame. The transmit diversity mode on the associated DPCH may not change during a PDSCH frame and within the slot prior to the PDSCH frame. This includes any change between no Tx diversity, open loop, closed loop mode 1 or closed loop mode 2.

Table 10: Application of Tx diversity modes on downlink physical channel types
"X" – can be applied, "-" – not applied

Physical channel type	Open loop mode		Closed loop Mode
	TSTD	STTD	
P-CCPCH	-	X	-
SCH	X	-	-
S-CCPCH	-	X	-
DPCH	-	X	X
PICH	-	X	-
PDSCH	-	X	X
AICH	-	X	-
CSICH	-	X	-
AP-AICH	-	X	-
CD/CA-ICH	-	X	-
DL-DPCCH for CPCH	-	X	X

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⌘ 25.211 CR 139 ⌘ rev 1 ⌘ Current version: 4.3.0 ⌘	

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CD/CA-ICH	-	X	-
DL-DPCCH for CPCH	-	X	X