
To: TSG-R WG2, TSG-R WG3 and TSG-R WG4
Source: TSG-R WG1
Title: Liaison on changes to Tx diversity usage in DL
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According to the WG1 specification TS 25.211 v 3.1.1 the application of Tx diversity on different downlink physical channels can be very flexibly decided. Only restriction has been that simultaneous use of STTD encoding and closed loop Tx diversity on DPCH and PDSCH is not allowed.

Before the TSG-R WG1 meeting #11 it was noticed that this kind of flexibility is problematic from CPICH measurements point of view. More specifically, UE should know how many antennas are used to transmit the CPICH. Furthermore, CPICH measurements for cell selection/re-selection and handover purposes should be in balance with the P-CCPCH decoding performance. Thus, TSG-R WG1 meeting #11 decided to add the following restriction to TS 25.211 v. 3.1.1 chapter 5.3.1: **“If Tx diversity is applied on any of the downlink physical channels it shall also be applied on P-CCPCH and SCH”**. After this change the UE can detect, not only the use of STTD encoding on P-CCPCH, but also the number of antennas used to transmit CPICH and the use of TSTD on SCH from “STTD indicator” or by detecting the modulation applied to SCH.