To:	TSG-R WG2
Source:	TSG-R WG1
Title:	Liaison statement to TSG-R WG2 concerning the changes made to Tx diversity concept in the TSG-R WG1 meeting #7

In TSG-R WG1 meeting #7 several details of the Tx diversity solution were finalized for release–99 [1]. For FDD, the following decisions were made:

- Number of closed loop modes were reduced to 2
- All the closed loop modes will use only 1 bit feedback. Two bit feedback is reserved for simultaneous use of closed loop modes and SSDT power control
- Orthogonal pilot pattern on dedicated channel transmitted from diversity antenna is always used in closed loop mode 1
- In closed loop mode 2 no orthogonal pilot pattern is used
- Open loop Tx diversity (STTD encoding) can be applied on PICH

Correspondigly, for TDD the following decision was made:

- Use of TSTD on SCH accepted as a working assumption

WG1 urges WG2 to check if these decisions have got any implications to the TS 25.300 series of specifications. Specifically, the control procedures for the use of either 1 or 2 FBI bits in non-SHO/SHO cases (and with/without SSDT power control) should be checked as now the all the closed loop Tx diversity modes use only 1 FBI bit.

It is the opinion of WG1 that during SHO with or without SSDT power control, it is possible for some Node Bs to implement transmit diveristy and for others not to implement transmit diversity. However all active set Node Bs implementing transmit diversity should use the same mode (Open loop STTD, FB mode 1 or FB mode 2). If at least one Node B of the active set implements feedback mode transmit diversity, 1 bit FBI field is required (a total of 2 bits will be required if SSDT power control is active).

On transitions between non-SHO and SHO, since all transmit diversity modes can be used during SHO, WG1 is of the opinion that there is no need to switch modes on entering SHO, and in the absence of SSDT power control there is no need to change the uplink DPCCH format since the number of FBI bits remains constant. In this case where the transmit diversity mode and uplink DPCCH format is unchanged, it is not required that entering and leaving SHO be synchronised between UE and UTRAN. When using SSDT power control, irrespective of transmit diversity, the number of FBI bits in the DPCCH will be increased by 1 upon entering SHO, and hence synchronisation between UE and UTRAN is required on entering SHO.

REFERENCES

[1]   TSG-R1. Ad Hoc #6 report to RAN WG1 meeting #7. TSG-R WG1 document, TSGR1#7(99)b12, 30th, August-3rd, September, 1999, Hannover, Germany, 7 pp.