

**Title:** Code signalling in UTRA TDD Downlink for the common midamble case

**To:** TSG-RAN WG4

**Source:** TSG-RAN WG1

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WG1 is currently investigating an optional code signalling scheme for the common midamble case in the context of Blind Channelisation Code Detection schemes for Multi-user detection techniques in the Downlink of UTRA-TDD [1].

The principle of the proposed code signalling scheme is to encode the number of all currently employed channelisation codes (or equivalently to indicate a subset of all possible channelisation codes) which are used by all UEs currently being assigned to a DL burst by modulating the available midamble shifts. This code signalling scheme is proposed for the case of a common midamble allocation to all UEs in the DL burst.

The performance of a blind channelisation code detection scheme at UE-side can be improved by knowing the number (or a subset) of all currently employed channelisation codes in the DL burst.

The knowledge of the number of employed channelisation codes being valuable for the performance of Multi-user detection techniques, the proposed code signalling scheme (L1 signalling) can help to derive this information.

WG1 would like to know from WG4 whether the use of the proposed code signalling scheme would be in contradiction with current WG4 specifications, e.g. if the test cases and/or assumptions on channel estimation for the MS are impacted.

References:

[1] R1-00-0476 “Code signalling in UTRA TDD Downlink for the common midamble case”, Mitsubishi Electric ITE