Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	DL channel sounding based on relaying the received downlink pilot at UL
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Re:	IEEE 802.16-REVe/D5a, BRC recirc
Abstract	DL channel sounding based on relaying the received downlink pilot at UL
Purpose	To incorporate the changes here proposed into the 802.16e/D5a draft.
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DL channel sounding based on relaying the received downlink pilot at UL

1 Introduction

This contribution provides a modification to the uplink channel sounding proposed in [1]. The advantage of this approach is to allow BS to estimation the down link wide band channel response in the FDD operation. In [1] after the DL channel is estimated. And then the estimation channel is modulate on the UL sounding pilot to assist BS to further estimate DL channel to perform beam-forming. In this contribution, we propose to use the existing .16e DL and UL pilot constructs to achieve the same object in a more efficient fashion. In Figure 1, the DL sounding symbols (decimate in frequency domain) are received by MSS modem, the MSS applies the received soft sample of received pilot as UL sounding symbol (to replace the CSIT sounding symbol as a transponder pilot), in addition, the MSS also transmission the CSIT sounding pilot. Figure 1 also demonstrates an example how BS can use the transponder pilot and CSIT pilot to estimate both UL channel and L channel.

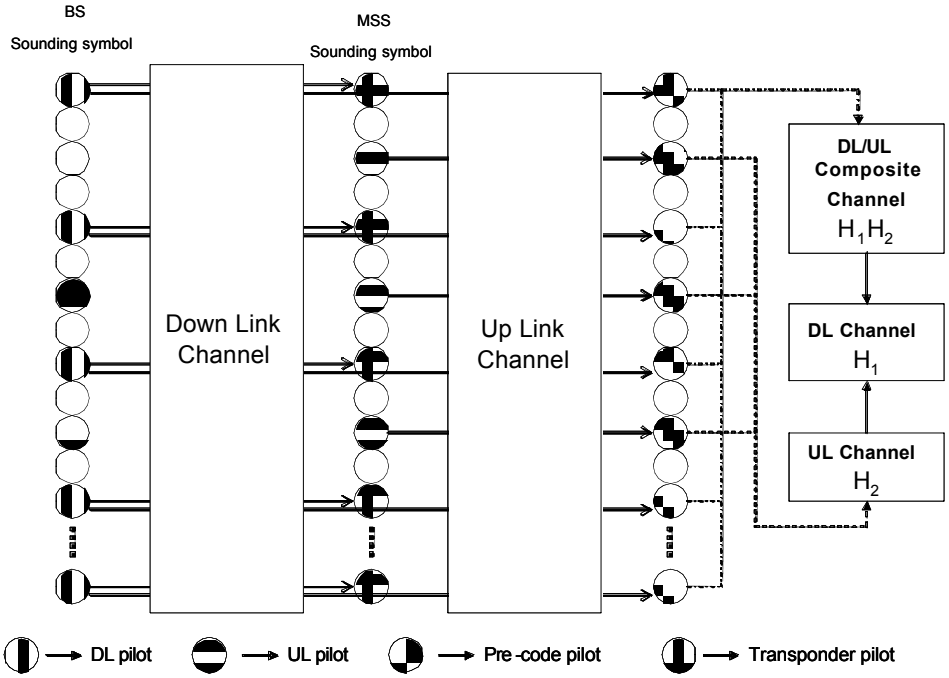

Figure 1 Joint CSIT pilot and transponder pilot channel sounding for FDD

2 Proposed Text Change

Add a new section 8.4.6.2.7.3 “Joint CSIT pilot and transponder pilot UL channel sounding”.

--------- *Start text* ----------

Section 8.4.6.2.7.3 Joint CSIT pilot and transponder pilot UL channel sounding

For UL CSIT sounding type-B, the sub-set of the sounding sub-carriers can be replaced by the received DL pilots, which can be sub-set preamble, common SYNC symbol for single BS antenna transmit or the middle-amble for multiple antennas transmit, in this case the decimation offset randomization shall be disabled.

--------- *End text* ----------

3 Reference

[1] C80216e-04/422:"Improvements to the Uplink Channel Sounding Signaling for OFDMA"