

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Proposed Removal of Subchannel Rotation	
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Re:	Response to Sponsor Ballot on IEEE802.16 Cor1 D3 document	
Abstract	In this contribution, we propose to remove subchannel rotation.	
Purpose	To incorporate the text changes proposed in this contribution into the IEEE802.16_Cor1_D4 draft.	
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Proposed Removal of Subchannel Rotation

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1. Problem Statement

In the current standard, a rotation scheme is applied for each OFDMA slot-duration in any zone, except zones marked as AAS zone, optional PUSC zone (8.4.6.2.5) or zone using the adjacent-subcarriers permutations (8.4.6.3). On each slot-duration, the rotation scheme is applied to all UL subchannels that belong to the segment (see 8.4.4.5), except those subchannels indicated in the UL-MAP by UIUC = 0, UIUC = 13 or UIUC = 12 or the allocation made by Compact UL-MAP IE for H-ARQ Region allocation (6.3.2.3.43.7.5) or Compact UL-MAP IE for CQICH Region allocation(6.3.2.3.43.7.6).

If a non-HARQ MSS and an HARQ MSS are assigned in the same zone, the non-HARQ MSS will not have the correct information as of which subchannels should be rotated, since it doesn't read HARQ related IEs. As a result, the non-HARQ MSS will choose the wrong subchannels to rotate for its transmission, which could overlap with those for an HARQ MSS even though there is no overlap in the logical allocation. Although, one may avoid this overlap by allocating the non-HARQ MSS and the HARQ MSS in different zones, the overall MAC efficiency will suffer. Given the current PHY mapping of subchannels already provides the benefit of frequency diversity, additional subchannel rotation is unnecessary.

2. Remedy I

A straightforward remedy is to remove the section 8.4.6.2.6 Data subchannel rotation scheme.

Detailed Text Changes

Remove the entire section 8.4.6.2.6.