Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Scalable AMC sub-channelization for OFDMA PHY**
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Source(s)	Hassan Yaghoobi, **Voice: 408-545-6162, mailto:hassan.yaghoobi@intel.com** Randall Schwartz, **Voice: 408-545-9876, mailto:randall.c.schwartz@intel.com** Jose Puthenkulam **Voice: 503 264-6121, mailto:jose.p.puthenkulam@intel.com** Intel Corporation CHP3-105 350 East Plumeria Dr. San Jose, CA 95134
Re:	Working Group Review of P802.16e/D2
Abstract	
Purpose	To propose enhancements to the OFDMA PHY by adding scalable AMC sub-channelization in P802.16e/D2 draft for better performance in narrow channel bandwidths.
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Scalable OFDMA PHY Expansion

1 Introduction

Current frame structure in 802.16REVd/D4 2048 FFT OFDMA can be further optimized to support bandwidth scalability when operating in adjacent subcarrier permutation mode. Currently standard only supports the scalability option for distributed subcarrier permutation. To expand the scalability advantages to the adjacent subcarrier permutation, and therefore to improve overall system performance, the sub-channelization format is expanded for scalability.

2 Proposed Text Changes

[Add the following tables to Section 8.4.6.3]

Table 275a— 2048-FFT OFDMA AMC carrier allocations

Parameter	Value
Number of DC Subcarriers	1
Number of Guard Subcarriers, Left	160
Number of Guard Subcarriers, Right	159
Number of Used Subcarriers (Nused) (including all possible allocated pilots and the DC carrier)	1729
Total Number of Subcarriers	2048
Number of Pilots	192
Number of Data Subcarriers	1536
Number of Bands	48
Number of bins per Band	4
Number of Data Subcarriers per Subchannel	48
Number of Subchannels per Two OFDM Symbols	64

Table 275b— 1024-FFT OFDMA AMC carrier allocations

Parameter	Value
Number of DC Subcarriers	1
Number of Guard Subcarriers, Left	80
Number of Guard Subcarriers, Right	79
Number of Used Subcarriers (Nused) (including all possible allocated pilots and the DC carrier)	865
Total Number of Subcarriers	1024
Number of Pilots	96
Number of Data Subcarriers	768
Number of Bands	24
Number of bins per Band	4
Number of Data subcarriers per Subchannel	48
Number of Subchannels per Two OFDM Symbols	32

Table 275c— 512-FFT OFDMA AMC carrier allocations

Parameter	Value
Number of DC Subcarriers	1
Number of Guard Subcarriers, Left	40
Number of Guard Subcarriers, Right	39
Number of Used Subcarriers (Nused) (including all possible allocated pilots and the DC carrier)	433
Total Number of Subcarriers	512
Number of Pilots	48
Number of Data Subcarriers	384
Number of Bands	12
Number of bins per Band	4
Number of Data subcarriers per Subchannel	48
Number of Subchannels per Two OFDM Symbols	16

Table 275c— 256-FFT OFDMA AMC carrier allocations

Parameter	Value
Number of DC Subcarriers	1
Number of Guard Subcarriers, Left	20
Number of Guard Subcarriers, Right	19
Number of Used Subcarriers (Nused) (including all possible allocated pilots and the DC carrier)	217
Total Number of Subcarriers	256
Number of Pilots	24
Number of Data Subcarriers	192
Number of Bands	6
Number of bins per Band	4
Number of Data subcarriers per Subchannel	48
Number of Subchannels per Two OFDM Symbols	8

Table 275c— 128-FFT OFDMA AMC carrier allocations

Parameter	Value
Number of DC Subcarriers	1
Number of Guard Subcarriers, Left	10
Number of Guard Subcarriers, Right	9
Number of Used Subcarriers (Nused) (including all possible allocated pilots and the DC carrier)	109
Total Number of Subcarriers	128
Number of Pilots	12
Number of Data Subcarriers	96
Number of Bands	3
Number of bins per Band	4
Number of Data subcarriers per Subchannel	48
Number of Subchannels per Two OFDM Symbols	4