Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Efficient MAP-Based Signaling to Support Partitioning/Grouping for H-FDD Operation**
Date Submitted	**2008-03-10**
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Re:	IEEE 802.16 Working Group Letter Ballot Recirc #26b
Abstract	Clarifications and signaling mechanisms are provided for efficient operation of H-FDD in 802.16e.
Purpose	Accept the proposed specification changes on IEEE P802.16Rev2/D3.
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Efficient MAP-Based Signaling to Support Partitioning/Grouping for H-FDD Operation

1.   Introduction

The default UL transmission is "time-first", as opposed to default "frequency-first" allocation in DL. The UL transmission for a user starts after the end of previous allocation.   The temporal duration of the UL transmission for a user usually spans the entire zone. This is the so-called "snake-like" allocation, which means essentially that in order to enable H-FDD SS with both UL and DL traffic in the same frame, uplink subframe needs to be divided into partitions. Given that a partition can not be defined on a per-SS basis, the more common case is that each partition contains allocation to a group of users.

This contribution proposes texts to clarify that a frame can be partitioned when serving H-FDD users with an associated efficient signaling mechanism.

2. Proposed Text

I: Add the following text after line 49 pg 678 Section 8.4.4.1

In a frame, the 'No. of OFDMA Symbols' field in DL-MAP message (see 6.3.2.3.2) in MAP1 indicates the number of OFDMA symbols in DL transmission period for the first group of H-FDD users in that frame and the 'No. of OFDMA Symbols' field in DL-MAP message in MAP2 indicates the number of OFDMA symbols in DL transmission period for the second group of H-FDD users in the next frame. For the uplink frame, the 'No. of OFDMA Symbols' field in UL-MAP message (see 6.3.2.3.4) in MAP1 indicates the number of OFDMA symbols in UL transmission period for the first group of H-FDD users in the next frame and the 'No. of OFDMA Symbols' field in UL-MAP message in MAP2 indicates the number of OFDMA symbols in UL transmission period for the second group of H-FDD users in the frame following the next frame.

II. Modify Table 38 pg 84 Section 6.3.2.3.2 as shown

Syntax	Size (bit)	Notes
DL-MAP_Message_Format() {		
Management Message Type = 2	8	—
PHY Synchronization Field	*variable*	See appropriate PHY specification.
DCD Count	8	—
Base Station ID	48	—
Begin PHY-specific section {	—	See applicable PHY subclause
if (WirelessMAN-OFDMA) {	—	—
No. OFDMA symbols	8	For TDD, Number of OFDMA symbols in the DL subframe including all AAS/permutation zone and including the preamble. For FDD, see Section 8.4.4.1
}	—	—
for (i = 1; i <= n; i++){	—	—

III. Modify Table 40 pg 86 Section 6.3.2.3.4 as shown

Syntax	Size (bit)	Notes
UL-MAP_Message_Format() {		
Management Message Type = 3	8	—
Reserved	8	Shall be set to zero
UCD Count	8	—
Allocation Start Time	32	—
Begin PHY-specific section {	—	See applicable PHY subclause
if (WirelessMAN-OFDMA) {	—	—
No. OFDMA symbols	8	For TDD, Number of OFDMA symbols in the UL subframe. For FDD, see Section 8.4.4.1
}	—	—
for (i = 1; i <= n; i++){	—	For each UL-MAP element 1 to *n*.

IV: Modify Table 429 pg 831 Section 8.4.5.6.1 as shown

Syntax	Size (bit)	Notes
Compressed_DL_MAP() {		—
Compressed map indicator	3	Set to binary 110 to indicate a compressed map format
UL-MAP appended	1	—
Reserved	1	Shall be set to zero
Map message length	11	—
PHY Synchronization Field	32	See appropriate PHY specification.
DCD Count	8	—
Operator ID	8	—
Sector ID	8	—
No. OFDMA symbols	8	For TDD, Number of OFDMA symbols in the DL subframe including all AAS/permutation zone and including the preamble. For FDD, see Section 8.4.4.1
DL IE count	8	—

V: Modify Table 430 pg 832 Section 8.4.5.6.2 as shown

Syntax	Size (bit)	Notes
Compressed_UL-MAP(){		
UCD Count	8	—
Allocation Start Time	32	—

No. OFDMA symbols	8	For TDD, Number of OFDMA symbols in the UL subframe. For FDD, see Section 8.4.4.1
while (map data remains){	—	—