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Re:	IEEE P802.16-REVd/D5		
Abstract	This contribution introduces corrections for AAS preamble PHY Modifier in OFDMA PHY		
Purpose	Adopt into P802.16d/D5 corrigenda		
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Corrections for AAS Preamble PHY Modifiers in OFDMA PHY

1 Problems with the current AAS Preamble definition

The definition of AAS Preambles contains ambiguities and contradictions that need to be resolved:

1. The preamble definition of equation (100) omits the time shift.
2. There are several errors in table PHY_MOD_DL_IE (Table 284).
3. There are several errors in table PHY_MOD_UL_IE (Table 300).

2 Proposed Text Change: Equation (100)

Section 8.4.5.3.11:

[Modify the text beginning at line 16 on page 532 with the following:]

In the case when the preamble is cyclically delayed in time by ~~k~~K samples, the preamble will contribute a component ~~s'(t)~~$s'_n(t)$ to the transmitted waveform for the n^{th} preamble symbol as defined below:

[Replace equation (100) with the following:]

$$s'_n(t) = \mathrm{Re}\left\{ e^{j2\pi f_c t} \sum_{m=-(Nused-1)/2}^{(Nused-1)/2} c_m \times e^{j2\pi m\Delta f\left(t-T_g-K/F_s\right)} e^{j2\pi nM} \right\}, \quad (100)$$

[Append this text to the end of the paragraph containing equation (100)]

The subscript n is the AAS preamble symbol number (0…L-1) to which the waveform is applied where L is the number of symbols occupied by the preamble (as defined in the AAS IE). The parameter M is the 'Preamble Symbol Shift Index' from either the PHY_MOD_DL_IE (Table 284) or the PHY_MOD_UL_IE (Table 300) as appropriate.

[Editorial improvements to equation (101)]

1) Replace '$N_{Used\text{-}subcarriers}$' with '$N_{used}$"
2) Replace the period at the end of equation (101) with a comma
2) Lowercase the 'Where' in line 40 on page 532.

3 Proposed Text Change: PHY_MOD_DL_IE

[Replace Table 284 with the following:]

Table 284—OFDMA DL-MAP Physical Modifier IE format

PHY_MOD_DL_IE() {		
Extended DIUC	4 bits	PHYMOD = 0x08
Length	4 bits	Length = 0x03
Preamble Modifier Type	1 bit	0 –frequency shifted preamble 1 – time shifted Preamble
if (Preamble Modifier Type == 0) {		
Preamble Frequency Shift Index	4bits	Indicates the value of K in equation (101)
} else {		
Preamble Time Shift Index	4 bits	Specifies the cyclic time shift in equation (100): For PUSC, 0 – 0 sample cyclic shift 1 – Nfft/14 sample cyclic shift …. 13 – Nfft/14*13 sample cyclic shift 14-15 – reserved For AMC permutation, 0 – 0 sample cyclic shift 1 – Nfft/9 sample cyclic shift …. 8 – Nfft/9*8 sample cyclic shift 9-15 – reserved
}		
Preamble Symbol Shift Index	1 bit	Specifies the cyclic symbol shift M in equation (100): 0 – M=0 1 - M=1/L, where L is the number of symbols occupied by the preamble, as defined in the AAS_DL_IE (Table 276, Section 8.4.5.3.3)
Reserved	~~3~~ 2 bits	
}		

4 Proposed Text Change: PHY_MOD_UL_IE

Section 8.4.5.4.14:

[Replace Table 300 with the following:]

Table 300—OFDMA UL-MAP Physical Modifier IE format

PHY_MOD_UL_IE() {		
Extended UIUC	4 bits	PHYMOD = 0x05
Length	4 bits	Length = 0x03
Preamble Modifier Type	1 bit	0 – frequency shifted preamble 1 – time shifted Preamble
if (Preamble Modifier Type == 0) {		
Preamble Frequency Shift Index	4bits	Indicates the value of *K* in equation (101)
} else {		
Preamble Time Shift Index	4 bits	Specifies the cyclic time shift in equation (100): For PUSC, 0 – 0 sample cyclic shift 1 – Nfft/4 sample cyclic shift …. 3 – Nfft/4*3 sample cyclic shift 4-15 – reserved For optional PUSC, 0 – 0 sample cyclic shift 1 – Nfft/3 sample cyclic shift 2 – Nfft/3*2 sample cyclic shift 3-15 – reserved For AMC permutation, 0 – 0 sample cyclic shift 1 – Nfft/9 sample cyclic shift …. 8 – Nfft/9*8 sample cyclic shift 9-15 – reserved
}		
Preamble Symbol Shift Index	1 bit	Specifies the cyclic symbol shift M in equation (100): 0 – M=0 1 - M=1/L, where L is the number of symbols occupied by the preamble, as defined in the AAS_UL_IE (Table 291, Section 8.4.5.4.6)
Reserved	~~3~~ 2 bits	
}		