Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	Correction to AMC pilot pattern definition	
Date Submitted	**2005-05-05**	
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Re:	IEEE P802.16e/D7	
Abstract	Correction to AMC pilot pattern definition	
Purpose	Adopt changes	
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Correction to AMC pilot pattern definition

Yuval Lomnitz, Uri Perlmutter, Dov Andelman

1. Motivation

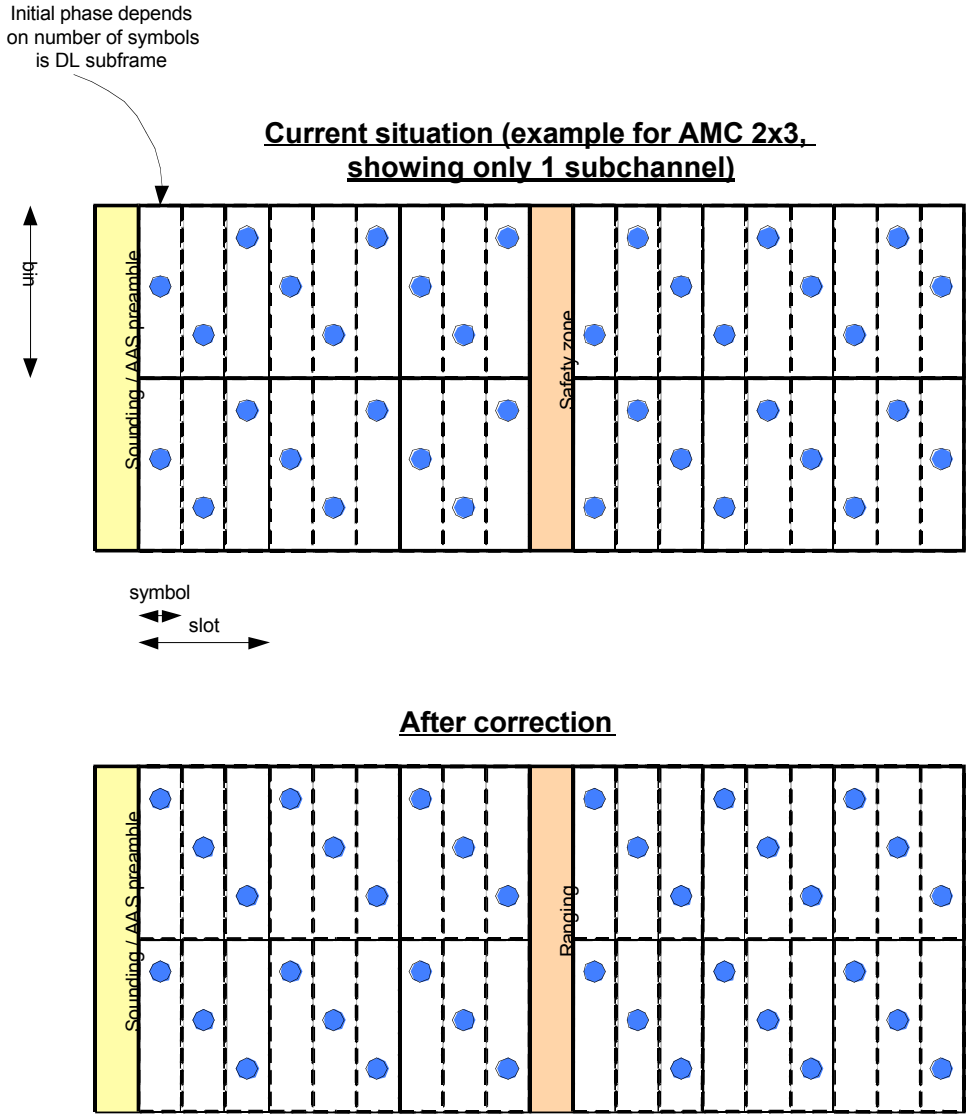
The AMC pilot location is based on symbol index from beginning of zone (9k+3m+1). This definition doesn't take into account special symbols (preamble, sounding, etc).

2. Details

2.1. Problems

The problems in the current definition are:

- In the UL, there are symbols in which are entirely filled by rectangular allocations (e.g. Sounding, Ranging (not in AMC), Safety/PAPR reduction zones). In these symbols here are no slots, and the counting of slots resumes after these symbols (see clarifications done in 802.16Cor1/D2, 8.4.4.5). The current AMC pilot structure ignores this fact, so although the actual data contents (slots) is shifted, the pilots remain in same locations, which means that the move relative to the data slots, as shown in diagram below.
- In the DL, MIMO midamble or AAS preambles may cause similar phenomenon, of shifting the pilot pattern (or more accurately shifting the data subcarriers without similar shift of pilots).



2.2. Proposed solution

The simplest way is to define m as symbol offset from start of slot epoch, but in order to be consistent with OFUSC and with all AMC tile structures, we propose to define that m is the symbol offset from the start of the current zone, counting only data symbols (i.e. Safety zones, Sounding symbols, preambles, etc are not counted).

3. Changes summary

[Apply the change below to the following tables:
Table 317a (1024-FFT OFDMA AMC subcarrier allocations)

Pilot Subcarrier Index	9k+3m+1 for k=0,1…95 and m=[symbol index] mod 3	Symbol of index 0 in pilot subcarrier index should be the first symbol of the current zone. m is incremented only for data symbols, excluding preambles, Safety zones, Sounding symbols, midambles, etc.

Table 317b—512-FFT OFDMA AMC subcarrier allocations

Pilot Subcarrier Index	9k+3m+1 for k=0,1…47 and m=[symbol index] mod 3	Symbol of index 0 in pilot subcarrier index should be the first symbol of the current zone. m is incremented only for data symbols, excluding preambles, Safety zones, Sounding symbols, midambles, etc.

Table 317c—128-FFT OFDMA AMC subcarrier allocations

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Pilot Subcarrier Index	9k+3m+1 for k=0,1…11 and m=[symbol index] mod 3	Symbol of index 0 in pilot subcarrier index should be the first symbol of the current zone. m is incremented only for data symbols, excluding preambles, Safety zones, Sounding symbols, midambles, etc.