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Title	Limitations on ranging/BW-req allocations needed to maintain slot structure
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Source(s)	Intel. Yuval Lomnitz Yuval.Lomnitz@intel.com Yigal Eliaspur Yigal.Eliaspur@intel.com Dov Andelman
Re:	IEEE P802.16REVd/D5-2004
Abstract	Define limitations on ranging/BW req allocations so that basic tile structure in the uplink is not broken.
Purpose	Adopt changes
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Limitations on ranging/BW-req allocations needed to maintain slot structure

Yuval Lomnitz, Yigal Eliaspur
Dov Andelman

1. Motivation

Ranging/BW-req allocations (UIUC=12,13) are rectangular allocations that are specified in OFDMA symbols and may appear anywhere in the UL subframe. If the length of the allocation is not a multiple of 3 symbols, it may break the slot strcuture, such that slots may wrap around the rectangular allocation and/or around the end of the UL subframe, and misalign with other slots. This shouldn't be allowed, since in this case the basic tile structure is broken (thus preventing tile-based channel estimation by the BS), and the mapping of data to slots is undefined.

2. Details

Proper limitations on the location of the UIUC=12,13 allocations should be defined, in such a way that will allow these allocations to be shorter than 3 OFDMA symbols (bandwidth efficiency), but will not break slot structure and alignment.

3. Changes summary

8.4.4.5 Uplink transmission allocations

[Insert the following rows at the end of the section]

Rectangular allocations made with UIUC=12,13 (ranging and BW-request) shall not break the UL tile structure, and conform to the following rules:

1. In each subchannel, the size of each continuous group of OFDMA symbols remaining after allocation of UIUC=12,13 regions shall be a multiple of 3 OFDMA symbols.
2. The slot boundaries in all subchannels shall be aligned, i.e. if a slot starts in symbol k in any subchannel, then no slots are allowed to start at symbols k+1, k+2 at any other subchannel.

The following figure depicts correct and incorrect allocations of UIUC=12,13 regions. Each rectangle is an UL-subframe (or zone). Regions 1,2,3 are correct allocations, and 4,5 are incorrect allocations.

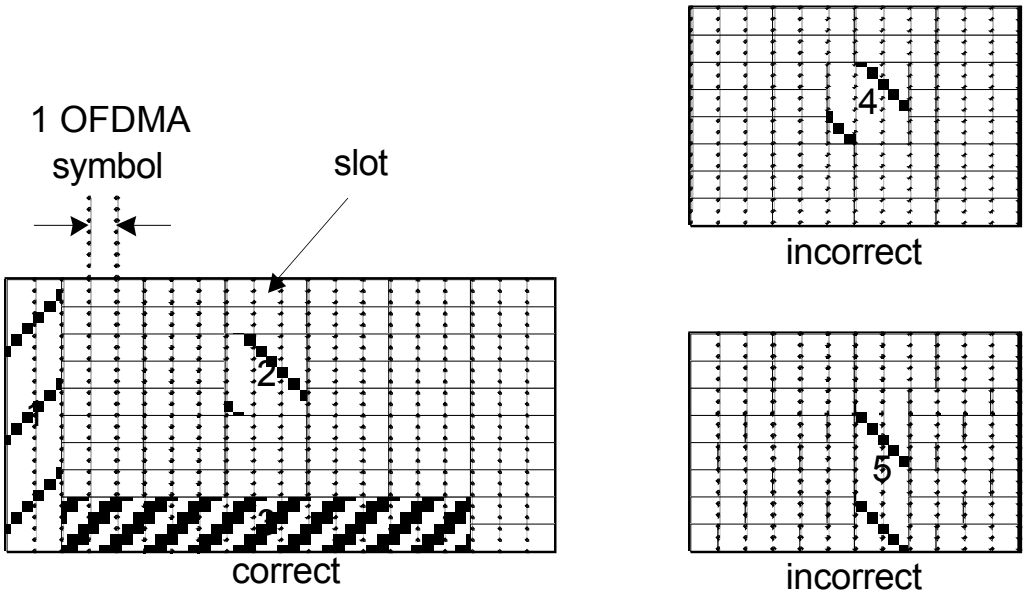

Figure XXX: example of UIUC=12,13 allocation rules.