802.11ba Draft Specification

|  |
| --- |
| Proposed Spec Text for D1.0 on WUR FDMA transmission |
| Date: 2018-07-09 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Dongguk Lim | LG Electronics | 19, Yangjae-daero 11gil, Seocho-gu, Seoul 137-130, Korea |  | dongguk.lim@lge.com |
| Eunsung Park | LG Electronics |  |  | esung.park@lge.com  |
| Jinsoo Choi | LE Electronics |  |  | js.choi@lge.com |
| Rui Cao | Marvell | 5488 Marvell Ln, Santa Clara, CA 95054, USA |  | ruicao@marvell.com |

Abstract

This submission proposes the spec text to be incorporated in IEEE802.11ba D1.0 related to the following motions:

* Move to accept the concept in the document 18/0762r4

The transmission on WUR primary 20MHz channel is equal to or longer than transmissions on other channels in WUR FDMA transmission.

If needed, the Padding is used to ensure that transmissions on the WUR primary channel always have the length indicated by L-length field in L-SIG.

* Move to accept the concept in the document 18/1129r5

The FDMA packet shall pad all 20MHz subchannels to the same length.

Revision History:

* Rev 0: Initial version of the document
* Rev1 and 2 : revised to apply the comment
* Rev 3: revised to apply the equal padding

***Editing instructions formatted like this are intended to be copied into the TGba Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGba Editor: Editing instructions preceded by “TGba Editor” are instructions to the TGba editor to modify or insert material in the TGba draft. As a result of adopting the changes, the TGba editor will execute the instructions rather than copy them to the TGba Draft.***

**TGba Editor: *Instruction: Insert the below description to subclause*** 32.2.2 WUR PPDU format ***as the following:***

**…..**

The 40 MHz preamble or 80MHz preamble is the duplication of 20 MHz preamble, which is composed of L-STF, L-LTF, L-SIG and BPSK-mark fields. In each 20 MHz sub-channel with duplicated 20 MHz preamble, one 4MHz WUR signal centered in the 20MHz sub-channel is transmitted following the 20MHz preamble.

In FDMA transmission, the WUR transmission on each non-punctured 20MHz sub-channel has the equal duration of transmission. And, if the duration of WUR transmission on any of the non-punctured 20MHz sub-channels is shorter than L-LENGTH described in 32.3.2, the Padding is used to ensure that WUR transmissions on each non-punctured 20MHz sub-channel always have the length indicated by the LENGTH field in the L-SIG.

**TGba Editor: *Instruction: modify the description of subclause*** 32.2.4.9 Construction of the WUR-Data for the FDMA transmission

**32.2.4.9 Construction of the WUR-Data for the FDMA transmission**

Construct the WUR-Data waveform for the FDMA transmission as follows:

a)Manchester based encoder for each 20 MHz sub-channel: Pulse combination is determined accord­ing to the input bits as described in 32.2.9 (WUR-Data field).

b)The output of the *kth* Manchester based encoder determines which samples to take either from the *kth*On-WG*iTX* of corresponding 20 MHz sub-channel or from Off-WG, depending on the WUR\_BANDWIDTH and the WUR\_DATARATE, where *k (0, 1, …, K-1)* is the index of the 20 MHz sub-channel. The samples in Off-WG have zero energy. Each symbol duration, *TSym* is 2 μs for high data rate (*TSYM-HDR*) and 4 μs for low data rate (*TSYM-LDR*).

c) Append the padding on non-punctured 20MHz sub-channel: if the duration of WUR transmission on any non-punctured 20MHz sub-channel is shorter than L-LENGTH described in 32.3.2 (TXTIME and PSDU length calculation), the padding is used to align the length indicated by the LENGTH field in the L-SIG. and the padding is not applied to the punctured 20MHz sub-channel.

d~~c~~)The outputs of the waveform generators across the 20 MHz sub-channels are added, sample by sam­ple.

~~d)Apply the Spatial Mapping.~~

e)Apply the CSD for each RF chain.

f)Apply the windowing.

g)Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal based on the center frequency of the desired channel.

**Straw poll:**

Do you support to incorporate the proposed changes in document 18/1137r2 to next revison?

Y:6

N:2

A:6