IEEE P802.11
Wireless LANs

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| Subclause 22.3.7 comment resolution for LB188 |
| Date: 2012-09-11 |
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Abstract

This submission contains proposed comment resolutions to comments received during WG letter ballot 188.

The comments included are non-editorial comments on 22.3.7 (Mathematical description of signals).

There are five such comments: 6346, 6648, 6590, 6591 and 6650.

All comments were assigned to PHY ad-hoc group.

R0: Initial Version

| **CID** | **By** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- | --- |
| 6346 | Yusuke Asai | 214.10 | 22.3.7 | This sentence may be regarded that a PPDU is transmitted in each frequency segment when i\_{Seg} = 2. Ditto the title of Table 22-7. | Change "the center frequency of the PPDU transmitted in frequency segment i\_{seg}" to "the center frequency of the PPDU in each frequency segment i\_{seg}" |

**Context:**

At 214.10:

*fc*(*iSeg*) represents the center frequency of the PPDU transmitted in frequency segment *iSeg*. Table 22-7 (Center frequency of a PPDU transmitted in frequency segment iSeg) shows …

At 214.20:

**Table 22-7 – Center frequency of a PPDU transmitted in frequency segment *iSeg***

**Discussion:**

The phrase, “a PPDU transmitted in frequency segment *iSeg*” may be misunderstood that the PPDU transmitted per frequency segment, which means that a couple of PPDUs are parallelly transmitted by using two frequency segments in 80+80 MHz transmission. Of course, it is erroneous. To avoid such misunderstanding, the phrase should be revised.

**Proposed resolution to CID 6346:**

Revised. 11-12/1057r0 provides proposed text change.

**Proposed text change:**

At 214.10:

*fc*(*iSeg*) represents the center frequency of the portion of the PPDU transmitted in frequency segment *iSeg* . Table 22-7 (Center frequency of the portion of the PPDU transmitted in frequency segment *iSeg*) shows …

At 214.20:

**Table 22-7 – Center frequency of the portion of the PPDU transmitted in frequency segment *iSeg***

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| 6648 | Vinko Erceg | 216.63 | 22.3.7 | Maybe write: "An example windowing function.." instead of "An example definition of the windowing function.."  | As in comment  |

**Context:**

 An example definition of the windowing function, , is given in 18.3.2.5 (Mathematical conventions in the signal descriptions).

**Discussion:**

Ahtough the window function is specified as an optional feature in TGac D3.0, the function does exist on Equation (22-9):



Therefore, in this sentence, first, it should be noted that  is a windows function. Then, an example function should be introduced.

**Proposed resolution to CID 6648:**

Revised. 11-12/1057r0 provides proposed text change.

**Proposed text change:**

At 216.63:

 is a windowing function. An example function is given in 18.3.2.5 (Mathematical converntions in the signal descriptions).

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| 6590 | Sigurd Schelstraete | 217.17 | 22.3.7 | user index is shown as u=0, 1, ..., Nu-1. There may not be a user "1" | Change notation to u=0, ..., Nu-1. |

**Context:**

*NSTS*,*u* For pre-VHT modulated fields, *NSTS*,*u* = 1. For VHT modulated fields, *NSTS*,*u* is the number of space-time streams (equal to the TXVECTOR parameter NUM\_STS) for user *u*, *u* = 0, 1, …, *Nu*-1.

**Discussion:**

At 182.21 (22.1.4 (PPDU formats)), it is defiled as follows:

*A VHT PPDU using a group ID value in the range of 1 to 62 is an MU PPDU, and carries one or more independent PSDU(s) to one or more STA(s).*

As defined in 22.1.4, an MU PPDU can carry only one PSDU to one STA. In this case, *Nu* = 1 and the maximum number of user index *u* is 0. Current notation for user index *u* does exclude this condition.

**Proposed resolution to CID 6590:**

Accepted. 11-12/1057r0 provides proposed text change.

**Proposed text change:**

At 217.17:

*NSTS*,*u* For pre-VHT modulated fields, *NSTS*,*u* = 1. For VHT modulated fields, *NSTS*,*u* is the number of space-time streams (equal to the TXVECTOR parameter NUM\_STS) for user *u*, *u* = 0, …, *Nu*-1.

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| 6591 | Sigurd Schelstraete | 217.22 | 22.3.7 | It should be explicitly stated that formula for M\_u is not valid for u=0. | Change description of M\_u as follows:"M\_u: for pre-VHT modulated fields and SU transmissions, M\_u=0. For MU transmissions, M\_0=0 and M\_u=sum(...) for u=1, ..., Nu-1.  |

**Context:**

At 217.22:

  For pre-VHT modulated fields, . For VHT modulated fields, with .

**Discussion:**

The parameter of *Mu* represents the initial index of the space-time strearm for user *u* for VHT modulated fields. The parameter of *Mu* is used on the Equation (22-9) (in the red square):



In this equation, the range of *u* is defined as *u* = 0, …, *Nu* – 1. *Nu* is the number of users in the transmission. Therefore, *Mu* = 0 for any fields of SU transmission. Current definition correctly covers *Mu* for the SU transmission:

* For pre-VHT modulated fields, *Mu* = 0.
* For VHT modulated field, *M*0 = 0.

On the other hands, the definition of *Mu* for MU transmission is as follows:

* For pre-VHT modulated fields, *Mu* = 0.
* For VHT modulated field, *M*0 = 0 for *u* = 0 and  for *u* = 1, …, *Nu* - 1.

Comparing these two sets of conditions, MU transmission case completely covers SU case, which corresponds to current definition. Therefore, there is no need to add the term of “SU”; however, as the commenter points out, it makes the definition clear to add the condition that *u* = 1, …, *Nu* – 1.

**Proposed resolution to CID 6591:**

Revised. 11-12/1057r0 provides proposed text change.

**Proposed text change:**

At 217.22

 For pre-VHT modulated fields, . For VHT modulated fields,  for *u* = 0 and for *u* = 1, …, *Nu*-1.

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| 6650 | Vinko Erceg | 217.47 | 22.3.7 | Maybe write: "have a value of zero." instead of "may have a value of zero" | As in comment  |

**Context:**

At 217.47:

 is the frequency-domain symbol in subcarrier *k* of user *u* for frequency segment *iSeg* of space-time stream *m*. Some of the  within  may have a value of zero.

**Discussion:**

In the VHT frame format, some subcarriers within a transmit spectrum are constantly assigned to zeros to reduce the influence of DC offset or to keep spectrum shape as backward compatible. (i.e. non-HT duplicate PPDU or 160MHz PPDU) Therefore, “may” is not appropriate auxiliary verb.

**Proposed resolution to CID 6650:**

Accepted. 11-12/1057r0 provides proposed text change.

**Proposed text change:**

At 217.47:

 is the frequency-domain symbol in subcarrier *k* of user *u* for frequency segment *iSeg* of space-time stream *m*. Some of the  within  have a value of zero.