IEEE P802.11  
Wireless LANs

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| Annexes D and E 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 Annex D (Regulatory references) and Annex E (Country elements and operating classes).

There are eight such comments: 6362, 6188, 6421, 6189, 6190, 6191, 6193 and 6076.

All comments were assigned to PHY ad-hoc group.

R0: Initial Version

| **CID** | **Commentor** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- | --- |
| 6362 | Yusuke Asai | 352.23 | D.1 | "two or more frequency segments" is not appropriate. Actually, TGac D3.0 does not have any transmission mode which support three or more frequency segments. The maximum number of frequency segments is two, which is defined in Table 22-5. | Delete "or more" before "frequency segments." |

**Context:**

At 352.18:

**Table D-2 – Behavior limits set**

|  |  |  |
| --- | --- | --- |
| **Encoding** | **Behavior limits set** | **Description** |
| 19 | 80+ | In an channel bandwidth that contains two or more frequency segments, the frequency segment that does not contain the primary 80 MHz channel (see NOTE 2) |
| 20 | UseEirpForVhtTxPowEnv | A STA that sends one or more a VHT Transmit Power Envelope elements shall indicate EIRP in the Local Maximum Transmit Power Units Interpretation subfield in one of the VHT Transmit Power Envelope elements |
| ~~19~~21-255 | Reserved | Reserved |
| NOTE 1—The fields that specify the 40 MHz channels are described in 20.3.15.4.  NOTE 2—For an example using an operating class with an 80+ Behavior limit, see 8.4.2.10. | | |

**Discussion:**

In the PHY and MAC specification in the TGac Draft, only 80 + 80 MHz transmission is defined. On the other hands, from the descrpition of the behavior limit set "80+" and the definition of country element in 8.4.2.10 (Country element), it is allowed to indicate three or more frequency segments by using Triplet fields. This is because of the future extension of the maximum number of frequency segments; however, some notes are needed to avoid any confision about the maximum number of frequency segments.

**Proposed resolution to CID 6362:**

Revised. 11-12/1058r0 provides proposed text change.

**Proposed text change:**

At 352.18:

**Table D-2 – Behavior limits set**

|  |  |  |
| --- | --- | --- |
| **Encoding** | **Behavior limits set** | **Description** |
| 19 | 80+ | In an channel bandwidth that contains two or more frequency segments, the frequency segment that does not contain the primary 80 MHz channel (see NOTE 2) |
| 20 | UseEirpForVhtTxPowEnv | A STA that sends one or more a VHT Transmit Power Envelope elements shall indicate EIRP in the Local Maximum Transmit Power Units Interpretation subfield in one of the VHT Transmit Power Envelope elements |
| ~~19~~21-255 | Reserved | Reserved |
| NOTE 1—The fields that specify the 40 MHz channels are described in 20.3.15.4.  NOTE 2—For an example using an operating class with an 80+ Behavior limit, see 8.4.2.10. The maximum number of frequency segments depends on each PHY and MAC specification. | | |

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| 6188 | Youhan Kim | 354.14 | E.1 | Operating class number for 80/160 have changed. | Change "The channel spacing for operating classes 35 and 36 is" to "The channel spacing for operating classes 128, 129 and 130 is". |
| 6421 | Mark RISON | 354.14 | E.1 | "NOTE 2---The channel spacing for operating classes 35 and 36 is for the supported bandwidth rather than the operating bandwidth." -- but OCs 35 and 36 are reserved! Ditto in tables E-2 and E-3 | Refer to the right OCs for the NOTE 2s in tables E-1 to E-3 |
| 6189 | Youhan Kim | 354.47 | E.1 | Operating class number for 80/160 have changed. | Change "The channel spacing for operating classes 19 and 20 is" to "The channel spacing for operating classes 128, 129 and 130 is". |
| 6190 | Youhan Kim | 355.29 | E.1 | Operating class number for 80/160 have changed. | Change "The channel spacing for operating classes 60 and 61 is" to "The channel spacing for operating classes 128, 129 and 130 is". |

**Context:**

At 353.26 – 354.16:

**Table E-1—Operating classes in the United States**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Global  operating class (see Table E-4) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| … | … | … | … | … | … | … |
| 34-127 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| 128 | 128 | 5 | 80 | - | 42, 58, 106, 122, 138, 155 | UseEirpForVHTTxPowEnv |
| 129 | 129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | 130 | 5 | 80 | - | 42, 58, 106, 122, 138, 155 | 80+, UseEirpForVHTTxPowEnv |
| 131-255 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| NOTE 1—The channel spacing for operating classes 22 through 33 is for the supported bandwidth rather than the operating bandwidth. In these operating classes, the AP operates either a 20/40 MHz BSS or a 20 MHz BSS, and the operating bandwidth for a non-AP STA is either 20 MHz or 40 MHz.  NOTE 2—The channel spacing for operating classes 35 and 36 is for the supported bandwidth rather than the operating bandwidth. | | | | | | |

**Discission:**

As the highlighted part of the Table E-1 shows, “NOTE 2” is for operating classes 35 and 36; however, these operating classes are defined as “Reserved,” which is an error to be fixed. The “NOTE 2” is for operating classes which correspond to 80 MHz, 160 MHz and 80+80 MHz transmissions. Tables E-2 and E-3 also have the same errors.

**Proposed resolution to CIDs 6188, 6421, 6189 and 6190:**

Accepted. 11-12/1058r0 provides proposed text change.

**Proposed text change:**

At 354.14:

**Table E-1—Operating classes in the United States**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Global  operating class (see Table E-4) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| … | … | … | … | … | … | … |
| 34-127 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| 128 | 128 | 5 | 80 | - | 42, 58, 106, 122, 138, 155 | UseEirpForVHTTxPowEnv |
| 129 | 129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | 130 | 5 | 80 | - | 42, 58, 106, 122, 138, 155 | 80+, UseEirpForVHTTxPowEnv |
| 131-255 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| NOTE 1—The channel spacing for operating classes 22 through 33 is for the supported bandwidth rather than the operating bandwidth. In these operating classes, the AP operates either a 20/40 MHz BSS or a 20 MHz BSS, and the operating bandwidth for a non-AP STA is either 20 MHz or 40 MHz.  NOTE 2—The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandwidth. | | | | | | |

At 354.46:

**Table E-2—Operating classes in the Europe**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Global  operating class (see Table E-4) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| 18-127~~255~~ | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| 128 | 128 | 5 | 80 | - | 42, 58, 106, 122 | UseEirpForVHTTxPowEnv |
| 129 | 129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | 130 | 5 | 80 | - | 42, 58, 106, 122 | 80+, UseEirpForVHTTxPowEnv |
| 131-255 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| NOTE 1—The channel spacing for operating classes 5 through 12 is for the supported bandwidth rather than the operating bandwidth. In these operating classes, the AP operates in a 20/40 MHz BSS, and the operating bandwidth for a non-AP STA is either 20 MHz or 40 MHz.  NOTE 2—The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandwidth. | | | | | | |

At 355.29:

**Table E-3—Operating classes in Japan**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Global  operating class (see Table E-4) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| 60-127~~255~~ | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| 128 | 128 | 5 | 80 | - | 42, 58, 106, 122 | UseEirpForVHTTxPowEnv |
| 129 | 129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | 130 | 5 | 80 | - | 42, 58, 106, 122 | 80+, UseEirpForVHTTxPowEnv |
| 131-255 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| NOTE 1—The channel spacing for operating classes 34–55 is for the supported bandwidth rather than the operating bandwidth. In these regulatory domains, the AP operates in a 20/40 MHz BSS, and the operating bandwidth of a non-AP STA is either 20 MHz or 40 MHz.  NOTE 2—The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandwidth. | | | | | | |

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| 6191 | Youhan Kim | 355.62 | E.1 | Table E-4 is missing NOTE 2 present in Tables E-1 through E-3. | Add a row at the bottom of Table E-4 with the following content: "NOTE 1 - The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandiwdth." |

**Context:**

At 355.40-62:

**Table E-4—Global Operating classes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Nonglobal  operating class(es) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| 128 | E-1-128,  E-2-128,  E-3-128 | 5 | 80 | - | 42, 58, 106, 122 | UseEirpForVHTTxPowEnv |
| 129 | E-1-129,  E-2-129,  E-3-129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | E-1-130,  E-2-130,  E-3-130 | 5 | 80 | - | 42, 58, 106, 122 | 80+, UseEirpForVHTTxPowEnv |
| ~~128~~  131-179 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |

**Discussion:**

As well as Tables E-1 through E-3, it is better to add a note: “The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandiwdth.”

**Proposed resolution to CIDs 6191:**

Revised. 11-12/1058r0 provides proposed text change.

**Proposed text change:**

At 355.62:

**Table E-4—Global Operating classes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Operating class | Nonglobal  operating class(es) | Channel starting frequency (GHz) | Channel spacing (MHz) | Channel set | Channel center frequency index | Behavior limits set |
| 128 | E-1-128,  E-2-128,  E-3-128 | 5 | 80 | - | 42, 58, 106, 122 | UseEirpForVHTTxPowEnv |
| 129 | E-1-129,  E-2-129,  E-3-129 | 5 | 160 | - | 50, 114 | UseEirpForVHTTxPowEnv |
| 130 | E-1-130,  E-2-130,  E-3-130 | 5 | 80 | - | 42, 58, 106, 122 | 80+, UseEirpForVHTTxPowEnv |
| ~~128~~  131-179 | Reserved | Reserved | Reserved | Reserved | Reserved | Reserved |
| NOTE - The channel spacing for operating classes 128, 129 and 130 is for the supported bandwidth rather than the operating bandiwdth. | | | | | | |

(*The number “1” from “NOTE 1” in the proposed change is removed because there is no more NOTE on Table E-4.*)

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| 6193 | Youhan Kim | 356.07 | E.1 | "20" should be "primary 20 MHz channel" | Change "with 20 on the lower 20 MHz" to "with the primary 20 MHz channel on the lower 20 MHz". |

**Context**

At 356.04-11:

NOTE 2 - The following example Country element describes US operation for a 80+80 MHz BSS using Table E-4 classes 116, 128 and 130 at a 100 mW limit for 40 MHz. the contents (in decimal) are: '07' [Country element ID], '18' [Length], '85', '83', '04' [Country string indicating US and Table E-4], '201', '116', '0' [Operating Triplet field for 20/40 with 20 on the lower 20 MHz], …

**Proposed resolution to CIDs 6193:**

Revised. 11-12/1058r0 provides proposed text change.

**Proposed text change:**

At 356.07:

NOTE 2 - The following example Country element describes US operation for a 80+80 MHz BSS using Table E-4 classes 116, 128 and 130 at a 100 mW limit for 40 MHz. the contents (in decimal) are: '07' [Country element ID], '18' [Length], '85', '83', '04' [Country string indicating US and Table E-4], '201', '116', '0' [Operating Triplet field for 20/40 MHz with the primary 20 MHz on the lower 20 MHz], …

(*In addition to the proposed change, “MHz” is added just after “20/40”.*)

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| 6076 | Adrian Stephens | 356.11 | E.1 | "The Operating Triplet fields for 80 and 80+80 MHz only express BSS operating channel bandwidths rather than specific regulatory permissions so are optional."  The NOTE should not be describing what is optional or not, only the contents of the previous example. | replace "optional" with "not present in this example". |

**Context**

At 356.07-11 (with the resolution to CID 6193):

NOTE 2 - The following example Country element describes US operation for a 80+80 MHz BSS using Table E-4 classes 116, 128 and 130 at a 100 mW limit for 40 MHz. … The Operating Triplet fields for 80 and 80+80 MHz only express BSS operating channel bandwidths rather than specific regulatory permissions so are optional.

**Discussion**

This sentence describes that the operating triplet fields for 80 and 80+80 MHz are optional; however, as the commentor points out, NOTE should not describe what is optional or not.

**Proposed resolution to CIDs 6076:**

Accepted. 11-12/1058r0 provides proposed text change.

**Proposed text change:**

At 356.10:

NOTE 2 - The following example Country element describes US operation for a 80+80 MHz BSS using Table E-4 classes 116, 128 and 130 at a 100 mW limit for 40 MHz. … The Operating Triplet fields for 80 and 80+80 MHz only express BSS operating channel bandwidths rather than specific regulatory permissions so are not present in this example.