IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| Comment resolutions for D2.0 Operating Classes comments | | | | |
| Date: 2019-05-10 | | | | |
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This submission proposes resolutions for multiple comments related to TGm D2.0 with the following CIDs (7 CIDs):

2129, 2290, 2441, 2442, 2630, 2700, 2701

Revisions:

* Rev 0: Initial version of the document. Editing instructions refer to TGm D2.2.

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGm Draft. This introduction is not part of the adopted material.

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 2290 | 4329.00 | In the Tables in E.1, for Operating classes in 2.4 GHz (such as 12 or 81), the fourth column is really channel width, not channel spacing. Where does it say that the 2.4 GHz channels are spaced 5 GHz apart? | Change the column heading to "Channel width". Add a column for "Channel spacing" (or "offset" or something similar), or a reference to where this information is available. | Revised – In Tables E-1 to E-6, change the heading of the fourth column to “Channel width”, and consequently change all references to the fourth column heading to “Channel width”. |
| 2630 | 4328.00 | CID 1446 clarifies that an operating class defines four things. However, this is not compatible with the resolution of some previous comments related to operating classes | Review previous comments on operating classes and address those whose resolution is not compatible with the definition in E.1 | Rejected – Submission 18/1366r2 has previously motioned resolutions for all comments on operating classes [CIDs 1418, 1445 and 1446]. CID 1418 resolution made an operating class not an indicator of support for any channels in a channel set. CID 1445 was rejected. CID 1446 resolution clarified the definition of an operating class. CID 2630 is rejected because no specific remedy is proposed. |
| 2442 |  | Behavior limits set should only be "Reserved" for reserved operating classes | Change "Reserved" in the Behavious limits set cell to an em dash in all the table rows in the tables in E.1 where the Channel starting frequency cell is not "Reserved" | Revised –  Agree in principle with the comment. Proposed resolution is to make the requested changes in tables E-4 and E-5, where they are appropriate. |
| 2441 | 4336.00 | It's not clear what "E-4a->9" and similar means | Delete the rows for Operating class = 61 to 76 inclusive | Revised –  Agree in principle with the comment. Proposed resolution is to correct the references to table E-5. Replace "E-4a->” with “ E-5-“ in global operating classes 61-76. |
| 2701 | 4333.00 | In Table E-3, there are some same sets with different operating class numbers, such as 8 and 11, 17 and 20, 25 and 26. Originally, they were seperated because each of them had a different behavior limit set. But such information is gone. | Bring back the information on behavior limit set. | Revised – Because both fixed and nomatic operation are permitted, LicenseExemptBehavior can apply to 4940-4990 MHz operating classes in Japan. |
| 2700 | 4333.00 | The bandwidth between 5,030 and 5,091 MHz is no longer allowed in Japan. The use ended in Nov. 30th, 2017. | Delete those operating classes where the channels are between 5,030 and 5,091 MHz from Table E-3. | Revised –  Agree in principle with the comment. Proposed resolution is to make Table E-3 operating classes 3, 6, 13 and 22 and Table E-4 global operating classes 112, 113 and 114 and their cross references reserved. |
| 2129 | 4343.00 | In Table E-6, there are empty cells for the column "Global operating class" for operating classes 11, 12, 13, 14, and 15. | Discuss and accept proposed changes for Table E-4 and Table E-6 in doc18/1431r1. | Revised –  Agree in principle with the comment. Proposed resolution is to make the changes in 18/1431r1 for EN#11 while retaining the (11aj) marks in Table E-6 classes 10-16. |

**CID 2290 Discussion:** *comment states that in the 2.4 GHz band, channel spacing is really channel width, change Table E-1 fourth column heading to Channel width and to add another column. In the 2.4 GHz band, channels overlap. The definition of channel spacing in Annex E* Channel spacing is the frequency difference between nonoverlapping adjacent channel center frequencies when using the maximum bandwidth of one frequency segment allowed for this operating class *is clear, but not as useful as using the column for channel width in all bands. PHY clauses for every band show how channels are numbered.*

*Resolution* Revised – Propose changing the column heading to “Channel width” in Tables E-1 to E-6, and consequently change all references to the fourth column heading to “Channel width”.

3.2 Definitions specific to IEEE Std 802.11

**TGm Editor: *Change the definition of station (STA) 2G4 and station (STA) 5G as shown:***

**station (STA) 2G4:** A STA that is operating on a channel that belongs to any operating class that has a value of 25 or 40 for the entry in the “Channel width~~spacing~~” *(#2290)* column …

**station (STA) 5G:** A STA that is operating on a channel that belongs to any operating class that has a value of 20 or 40 for the entry in the “Channel width~~spacing~~” *(#2290)* column …

9.4.2.8 Country element

**TGm Editor: *Page 995 lines 58, 59 Change the two occurrances of “Channel Spacing” as shown:***

an 80 MHz Channel width~~Spacing~~ *(#2290)*

**TGm Editor: *Page 995 line 63 Change the occurrance of “Channel Spacing” as shown:***

the “Channel width~~Spacing~~ *(#2290)* (MHz)”

9.4.2.20.2 Basic request

**TGm Editor: *Page 1006 line 17 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.20.3 CCA request (Clear channel access request)

**TGm Editor: *Page 1006 line 41 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.20.4 RPI histogram request

**TGm Editor: *Page 1007 line 3 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.20.5 Channel load request

**TGm Editor: *Page 1007 line 36 Change the occurrance of “Channel Spacing” as shown:***

the “Channel width~~Spacing~~ *(#2290)* (MHz)”

9.4.2.21.2 Basic report

**TGm Editor: *Page 1039 line 11 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.21.3 CCA report

**TGm Editor: *Page 1040 line 17 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.21.4 RPI histogram report

**TGm Editor: *Page 1040 line 64 Change the occurrance of “Channel spacing” as shown:***

the “Channel width~~spacing~~ *(#2290)* (MHz)”

9.4.2.21.5 Channel load report

**TGm Editor: *Page 1042 line 36 Change the occurrance of “Channel Spacing” as shown:***

the “Channel width~~Spacing~~ *(#2290)* (MHz)”

9.4.2.55.2 HT Capability Information field

**TGm Editor: *Page 1164 line 18 Change the occurrance of “Channel spacing” as shown:***

the Channel width~~Spacing~~ *(#2290)* (MHz)

10.23.3 Operation with operating classes

**TGm Editor: *Page 1803 line 50 Change the occurrance of “Channel spacing” as shown:***

the Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 1804 line 7 Change the occurrance of “Channel spacing” as shown:***

the Channel width~~Spacing~~ *(#2290)* (MHz)

11.21.6.3.1 Setting up a 40 MHz direct link

**TGm Editor: *Page 2335 line 39 Change the occurrance of “Channel Spacing” as shown:***

40 MHz Channel width~~Spacing~~ *(#2290)*

11.21.6.5.1 General

**TGm Editor: *Page 2336 line 37 Change the occurrance of “Channel Spacing” as shown:***

40 MHz Channel width~~Spacing~~ *(#2290)*

11.39.4 Channel switching methods for a VHT BSS

**TGm Editor: *Page 2485 line 49 Change the occurrance of “Channel Spacing” as shown:***

The “Channel width~~Spacing~~ *(#2290)* (MHz)

23.3.13 Channelization

**TGm Editor: *Page 3385 line 37 Change the occurrance of “Channel Spacing” as shown:***

the Channel width~~Spacing~~ *(#2290)* field

E.1 Country elements and operating classes

**TGm Editor: *Page 4337 line 48 Change the definition of Channel spacing by inserting as shown:***

Channel spacing (channel width) *(#2290)* is the frequency difference between nonoverlapping adjacent channel center frequencies when using the maximum bandwidth of one frequency segment allowed for this operating class.”

**TGm Editor: *Page 4338 line 19 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4339 line 3 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4340 line 7 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4341 line 3 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4342, 4349 line 7 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4343, 4344, 4345, 4346, 4347, 4348 line 3 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4350, 4351, 4352 line 3 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**TGm Editor: *Page 4351 line 40 Change the occurrance of “Channel spacing” as shown:***

Channel width~~spacing~~ *(#2290)* (MHz)

**CID 2630 Discussion:** *comment states that CID 1446 resolution clarifies an operating class, and asserts that the changed description is not compatible with the resolution of some previous comments related to operating classes. Proposed change* Review previous comments on operating classes and address those whose resolution is not compatible with the definition in E.1*. All the MD D1.0 comments on operating classes were addressed in submission 18/1366r2. CID 1418 changed the definition of channel set so it is not required to support operation on any of the channels in the channel set. CID 1446 stated what an operating class indicates, and it does not indicate a channel set. CID 1418 resolution is compatible with the definition of operating classes. CID 1445 was rejected for reasons that are compatible with the definition of operating classes.*

*Resolution* Rejected – Submission 18/1366r2 has previously motioned resolutions for all comments on operating classes [CIDs 1418, 1445 and 1446]. CID 1418 resolution made an operating class not an indicator of support for any channels in a channel set. CID 1445 was rejected. CID 1446 resolution clarified the definition of an operating class. CID 2630 is rejected because no specific remedy is proposed.

**CID 2442 Discussion:** *comment states that BehaviorLimitsSet should only be Reserved for Reserved operating classes, and recommends changes in Table E-1, which has no non-Reserved operating classes without an em dash.*

*Resolution* Revised – Agree in principle with the comment. Proposed resolution is to make the requested changes in tables E-4 and E-5, where they are appropriate.

**TGm Editor: *Page 4345 lines 12- 43 classes 61-76 Change the Behavior Limits Set entry from “Reserved” to em-dash as shown:***

—~~Reserved~~ *(#2442)*

**TGm Editor: *Page 4349 line 14 classes 1-29 Change the Behavior Limits Set entry from “Reserved” to em-dash as shown:***

—~~Reserved~~ *(#2442)*

**CID 2441 Discussion:** *comment states it is not clear what Global class “E-4a->9” means, and to delete non-global operating classes entries for classes 61-76. Agree in principal as references should be to Table E-5.*

*Resolution* Revised – Agree in principle with the comment. Proposed resolution is to correct the references to table E-5. Replace "E-4a->” with “ E-5-“ in global operating classes 61-76.

**TGm Editor: *Page 4345 lines 12- 43 classes 61-76 Change the nonglobal operating classes entry from “E-4a” to “E-5” as shown:***

E-5~~E-4a->~~*(#2441)*

**CID 2701 Discussion:** *comment states Japan 4.9 GHz tables should have a Behavior Limits Set entry. Agree in principal as references should be to Table E-5.*

*Resolution* Revised – Because both fixed and nomatic operation are permitted, LicenseExemptBehavior can apply to 4940-4990 MHz operating classes in Japan.

**TGm Editor: *Page 4341 line 30 classes 8, 11, 17, 20, 25, 26, 29 Change the Behavior Limits Set entry from blank to “LicenseExemptBehavior” as shown:***

LicenseExemptBehavior *(#2701)*

**CID 2700 Discussion:** *comment states Japan no longer permits operation in 5030-5091 MHz band and requests deleting those classes from Table E-3. Agree in principal and as no country permits RLANs in 5030-5091 MHz band, mark those classes as Reserved in Tables E-3 and E-4.*

*Resolution* Revised – Agree in principle with the comment. Proposed resolution is to make Table E-3 operating classes 3, 6, 13 and 22 and Table E-4 global operating classes 112, 113 and 114 and their cross references reserved.

**TGm Editor: *Page 4342 line 22 classes 3 and 6 Change the Global operating class to “Reserved” as shown:***

~~113~~Reserved *(#2700)*

**TGm Editor: *Page 4342 line 22 classes 3 and 6 Change the remaining five columns to “Reserved”***

**TGm Editor: *Page 4342 line 38 class 13 Change the Global operating class to “Reserved” as shown:***

~~114~~Reserved *(#2700)*

**TGm Editor: *Page 4342 line 38 class 13 Change the remaining five columns to “Reserved”***

**TGm Editor: *Page 4342 line 51 class 22 Change the Global operating class to “Reserved” as shown:***

~~115~~Reserved *(#2700)*

**TGm Editor: *Page 4342 line 51 class 22 Change the remaining five columns to “Reserved”***

**TGm Editor: *Page 4347 line 9 class 112 Change the Nonglobal operating class to “Reserved” as shown:***

~~E-3-2,3,4,5,6~~Reserved *(#2700)*

**TGm Editor: *Page 4347 line 9 class 112 Change the remaining five columns to “Reserved”***

**TGm Editor: *Page 4347 line 12 class 113 Change the Nonglobal operating class to “Reserved” as shown:***

~~E-3-12,13,14,15~~Reserved *(#2700)*

**TGm Editor: *Page 4347 line 12 class 113 Change the remaining five columns to “Reserved”***

**TGm Editor: *Page 4347 line 15 class 114 Change the Nonglobal operating class to “Reserved” as shown:***

~~E-3-21,22,23,24~~Reserved *(#2700)*

**TGm Editor: *Page 4347 line 15 class 114 Change the remaining five columns to “Reserved”***

**CID 2129 Discussion:** *comment states* In Table E-6, there are empty cells for the column "Global operating class" for operating classes 11, 12, 13, 14, and 15 *and proposed change is* Discuss and accept proposed changes for Table E-4 and Table E-6 in doc18/1431r1. *Agree in principal but need to retain the (11aj) marks in Table E-6 classes 10-16 and add them to Table E-4.*

*Resolution* Revised – Agree in principle with the comment. Proposed resolution is to make the changes in 18/1431r1 for EN#11 while retaining the (11aj) marks in Table E-6 classes 10-16.

**TGm Editor: *Page 4348 line 4 classes 181-191 Change Table E-4 as follows:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 |
| … | … | … | … | … | … | … |
| (11aj)181*(#2129)* | E-6-10 | 56.16 | 2160 | 2,3 | — | — |
| (11aj)182*(#2129)* | E-6-11 | 56.70 | 1080 | 35, 36, 37, 38 | — | — |
| (11aj)183*(#2129)* | E-6-12 | 42.66 | 540 | 1,2,3,4,5,6,7,8 | — | LicenseExemptBehavior |
| (11aj)184*(#2129)* | E-6-13 | 47.52 | 540 | 9,10 | — | LicenseExemptBehavior |
| (11aj)185*(#2129)* | E-6-14 | 42.93 | 1080 | 11,12,13,14 | — | LicenseExemptBehavior |
| (11aj)186*(#2129)* | E-6-15 | 47.79 | 1080 | 15 | — | LicenseExemptBehavior |
| ~~181~~187~191 | — | Reserved | Reserved | Reserved | — | Reserved |
| ... | ... | ... | ... | ... | ... | ... |

**TGm Editor: *Page 4352 line 28 classes 10-16 Change Table E-6 as follows:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table E-6—Operating classes in China | | | | | | |
| Operating class | Global operating class (See Table E-4 Global operating classes) | Channel starting frequency  (GHz) | Channel  spacing  (MHz) | Channel  set | Channel  center  frequency  index | Behavior limits set |
| (11aj)10*(#2129)* | 181 | 56.16 | 2160 | ~~2160~~2,3 | ~~2,3~~— | — |
| (11aj)11*(#2129)* | 182 | 56.70 | 1080 | ~~1080~~35, 36, 37, 38 | ~~35, 36, 37, 38~~— | — |
| (11aj)12*(#2129)* | 183 | 42.66 | 540 | ~~540~~1,2,3,4,5,6,7,8 | ~~1,2,3,4,~~ ~~5,6,7,8~~— | LicenseExemptBehavior |
| (11aj)13*(#2129)* | 184 | 47.52 | 540 | ~~540~~9,10 | ~~9,10~~— | LicenseExemptBehavior |
| (11aj)14*(#2129)* | 185 | 42.93 | 1080 | ~~540~~11,12,13,14 | ~~11,12,13,14~~— | LicenseExemptBehavior |
| (11aj)15*(#2129)* | 186 | 47.79 | 1080 | ~~1080~~15 | ~~15~~— | LicenseExemptBehavior |
| (11aj)16~127 | Reserved | Reserved | Reserved | Reserved | — | Reserved |
| ... | ... | ... | ... | ... | ... | ... |