IEEE P802.11  
Wireless LANs

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| IEEE 802.11ba Task Group Meeting Minutes for April Ad-hoc Meeting, Intel Campus, Santa Clara, California, USA | | | | |
| Date: 2019-04-22 | | | | |
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Abstract

Meeting Minutes for the IEEE 802.11ba TG ad-hoc session held at Intel Corporation, Santa Clara, California, USA, 2019 during 17-18 April 2019.

Revision history:

Rev 0: initial submission.

**Day 1 - Wednesday, April 17 2019**

**Meeting attendee list:**

1. Minyoung Park (Intel)
2. Po-Kai Huang (Intel)
3. Vinod Kristem (Intel)
4. Yongho Seok (MediaTek)
5. Liwen Chu (Marvell)
6. Rui Yang (InterDigital)
7. Li-Hsiang Sun (InterDigital)
8. Yunsong Yang (Huawei)
9. Steve Shellhammer (Qualcomm)
10. Yonggang Fang (ZTE)
11. Alfred Asterjadhi (Qualcomm)
12. Alphan Sahin (InterDigital, call in)
13. Rui Cao (Marvell, call in)
14. Gurav Patwardhan (HPE, call in)

**Day 1 - Wednesday, April 17 2019, 10 am-12.30 pm**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/19/11-19-0657-01-00ba-2019-april-tgba-ad-hoc-agenda.pptx>

* Call meeting to order
* Call for submissions
* Review agenda and approval
* IEEE 802 and 802.11 IPR Policy and procedure
* Participation in IEEE 802 Meetings
* LB237 comment resolution status
* Presentations on comment resolution
* Recess

**Chair Minyoung Park (Intel) calls the meeting to order at 10:09 am.**

Vinod Kristem (Intel) volunteers to take the meeting minutes.

Minyoung presents the slide about Meeting protocol (slide 4).

Minyoung presents the slide “Main agenda items for the ad-hoc meeting”. The main agenda items are shown below.

* Review comment resolution on TGba D2.0 (LB237)
  + Total 20 submissions

Minyoung goes through the list of submissions.

Minyoung goes through the agenda (slide 9) and asks if there are any questions or comments.

**Questions/Comments:**

Request to shorten the PM session on day 2 as some of the attendees need to leave early. The PM session on day 2 was shortened to end at 5 pm.

Request to add 19/576r0 to the agenda.

Request to start with MAC presentations on Day 1 and with PHY presentations on Day 2.

**Agenda approved by unanimous consent.**

Minyoung asks if anyone would like him to go through the slides “Participants have a duty to inform the IEEE” (slide 11), “Ways to inform IEEE” (slide 12), “Other Guidelines for IEEE WG meetings” (slide 13), and “Participation in IEEE 802 Meetings” (slide 15). **No comments/questions received.**

Minyoung makes a Call for Potentially Essential Patents. **No potentially essential patents reported and no questions asked.**

Minyoung goes through “Patent-related information” (slide 14).

Minyoung goes through “Comment Resolution Status 11-19/312r6” (slide 19).

**Presentations:**

**11-18/1836r7, “MAC CR CID 296” Gaurav Patwardhan (HPE)**:

* Discussion on CID 2109 and 2365.
* Commented that the timer value being too small.
* Commented that the text is unclear regarding the meaning of WUR connectivity being lost at the AP. It is also unclear what happens to the STA side. There is a potential that the state machines of the AP and of the STA may not be the same.
* Decided to have more offline discussion and revise the document.

**11-19/0590r0, “CR for WUR Duty Cycle Part I” Po-Kai Huang (Intel Corporation)**:

* CID 2037: the comment is deferred and removed from the document.
* CID 2213: changed from rejected to revised.
* CID 2433: the awake state and dozen state refers to the state of the main radio.
* CID 2607: change the deposition field.
* Will be revised as r1.
* All CIDs except CID 2037 are ready for motion.

**11-19/0599r0, “CR for Miscellaneous CIDs” Po-Kai Huang (Intel Corporation)**:

* CID 2055: changed from rejected to revised.
* CID 2691: changed the deposition field and spec text.
* Will be revised as r1.

**The meeting is recessed at 12.40 pm.**

**Day 1 - Wednesday, April 17 2019, 1.30 pm-3.30 pm**

**Chair Minyoung Park (Intel) calls the meeting to order at 1:32 pm.**

**Presentations:**

**11-19/382r2, “Proposed spec text for CID 2062”, Rui Yang (InterDigital)**:

* Discussion on CID 2062.
* Questions on 3dB bandwidth definition and if it is the right metric to use.
* Debate on whether to use 13 tone definition for bandwidth instead of specifying the minimum and maximum 3 dB bandwidth values.
* No consensus among the group.

**11-19/641r0, “Proposed CR for CID 2112, 2633”, Rui Yang (InterDigital) and 19/640r0, “EVM Specification for OOK Waveform”, Rui Yang (InterDigital)**

* Discussion on understanding the EVM metric used in the presentation.
* Discussion on how to do averaging across frames. Should the averaging factor within the square root or outside?
* Rui will initiate an offline discussion to reach a consensus on the formula.

**The meeting is recessed at 3.40 pm.**

**Day 1 - Wednesday, April 17 2019, 3.45 pm-5.30 pm**

**Chair Minyoung Park (Intel) calls the meeting to order at 3:50 pm.**

**Presentations:**

**11-19/642r0, “CR on 4.9 GHz related comments”, Minyoung Park (Intel Corporation)**:

* CIDs 2006 and 2007: in the deposition field, removed the reference to the D2.1 sentence as it is inaccurate.
* CID 2015: Pointed out that the commenter is mistaken in thinking that the WUR receiver can operate on 40 and 80 MHz bandwidth. The 40 and 80 MHz is only for the AP side, not for the STA side. Changed the resolution from Revised to Rejected.
* CIDs 2023-2027: in the deposition fied, changed the text referencing to the D2.1 sentence. And in the spec, change that sentence as well.
* CID 2717: changed “bit” to “subfield”.
* Will be revised as r1.
* All CIDs in 11-19/642r1 are ready for motion.

**The meeting is recessed at 5.22 pm.**

**Day 2 - Thursday, April 18 2019**

**Meeting attendee list:**

1. Minyoung Park (Intel)
2. Po-Kai Huang (Intel)
3. Vinod Kristem (Intel)
4. Rui Yang (InterDigital)
5. Li-Hsiang Sun (InterDigital)
6. Yunsong Yang (Huawei)
7. Steve Shellhammer (Qualcomm)
8. Yonggang Fang (ZTE)
9. Alfred Asterjadhi (Qualcomm)
10. Rui Cao (Marvell)
11. Liwen Chu (Marvell)
12. Gurav Patwardhan (HPE, call in)

**Day 2 - Thursday, April 18 2019, 9 am-11 am**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/19/11-19-0657-02-00ba-2019-april-tgba-ad-hoc-agenda.pptx>

* Call meeting to order
* IEEE 802 and 802.11 IPR Policy and procedure
* Presentations on comment resolutions
* Recess

**Chair Minyoung Park (Intel) calls the meeting to order at 9 am.**

Minyoung makes a Call for Potentially Essential Patents**. No potentially essential patents reported and no questions asked.**

**Presentations:**

**11-19/651r1, “CR on Sync Field Comments”, Steve Shellhammer (Qualcomm)**:

* CID 2776: Discussed that adding the BSS Color in the WUR-Sync field will significantly degrade the performance of Sync detection and will actually cause more power consumption for the Sync field needs to be longer to regain the same miss rate and false-alarm rate. The conclusion is to keep the current Sync design.
* No change is made to 651r1.
* All CIDs in 11-19/651r1 are ready for motion.

**11-19/0570r0, “crs-for-phy-introduction-D2.0”, Yonggang Fang (ZTE)**:

* CID 2621: Group agreed to change the WUR PPDU throughout the spec D2.1 where it refers to transmission over 20 MHz channel to WUR Basic PPDU. Then, the remaining WUR PPDUs, where it refer to the general concept, refer to the union of WUR Basic PPDUs and WUR FDMA PPDUs. TGba editor will perform a check throughout the draft.
* CID 2590: The resolution is “Revised” because there are two possible puncturing patterns, instead of one as the commenter suggested.
* CID 2779: deferred and removed from the document.
* CID 2495: Group agreed to replace legacy preamble with L-STF, L-LTF and L-SIG wherever applicable.
* Will be updated as r1.
* All CIDs in 11-19/0570r1 are ready for motion, except for CID 2779.

**11-19/0398r2, “PHY-CR-for-Clause-31”, Vinod Kristem (Intel Corporation)**:

* CID 2063: Some clarification questions on reason for rejection. No change to the resolution.
* CIDs 2076, 2077, 2078 and 2079: Discussion on defining MC-OOK using 13 tones.

SP: do you support to add the sentence “For a WUR PPDU with 20 MHz channel width, the WUR-Sync and WUR-Data fields are generated by Multicarrier On-Off Keying (MC-OOK), which uses contiguous 13 subcarriers with a subcarrier spacing of 312.5 kHz and the center subcarrier being null.”?

Result: Y/N/A = 4/2/5.

* + There is no clear agreement. CIDs 2076, 2077, 2078, and 2079 are deferred and removed from the document.
* CID 2669: The text after “Accepted” is changed to a note to editor.
* CID 2826: in the deposition field, added text to explain that the reason for “Revised” is that text related to setting the data rate in the deleted block is moved into the next block.
* Will be updated as r3.
* All CIDs in 11-19/0398r3 are ready for motion, except for the 4 deferred CIDs 2076, 2077, 2078, and 2079.

**The meeting is recessed at 11.40 pm.**

**Day 2 - Thursday, April 18 2019, 11.15 am-12.30 pm**

**Chair Minyoung Park (Intel) calls the meeting to order at 11:52 am.**

**Presentations:**

**11-19/0649r0, “PHY Comment resolution for Clause 31.2.8”, Vinod Kristem (Intel Corporation)**:

* CID 2104: Suggestion to replace “multicarrier baseband” with “baseband”. The text is updated accordingly.
* All other CIDs are unchanged.
* Will be updated as r1.
* All CIDs in 11-19/0649r1 is ready for motion

**The meeting is recessed at 12.40 pm.**

**Day 2 - Thursday, April 18 2019, 1:30 -5:00 pm**

**Chair Minyoung Park (Intel) calls the meeting to order at 1:30 pm.**

Yunsong Yang (Huawei) volunteers to take the meeting minutes.

**Presentations:**

**11-19-0599-02-00ba-cr-for-miscellaneous-cids (Po-kai, Intel)**

* Reviewed the change (adding green text for CID 2262) made from r1.
  + No comments or questions.
* Objection to the proposed resolution to CID 2055 was raised.
  + CID 2055 is deferred and removed from the document.
* Will be updaated as r2.
* All CIDs in 599r2 are ready for motion, except for CID 2055.

**11-19-0591-01-00ba-cr-for-wur-power-management-and-negotiation-part-I (Po-kai, Intel)**

* CID 2029: no change to the proposed resolution.
* CID 2034: no change to the proposed resolution.
* CID 2036: discussed if it should be reserved or set to 0. Decided that “set to 0” is better for forward compatibility. So, no change to the proposed resolution.
* CID 2053: Added “the” before “time”.
* CID 2097: no change to the proposed resolution.
* CID 2130: no change to the proposed resolution.
* CID 2150: no change to the proposed resolution.
* CID 2151: no change to the proposed resolution.
* CID 2152: no change to the proposed resolution.
* CID 2175: Keep as “Revised”. Discussed what should be said in the definition and decided to change the text to focus on the transmission part.
* CID 2176: Discussed the comment without reaching agreement on a resolution. The CID is deferred and removed from the document.
* CID 2215: no change to the proposed resolution.
* CID 2216: Discussed the comment without reaching agreement on a resolution. The CID is deferred and removed from the document. And CIDs 2217, 2221, 2222, and 2224 are deferred and removed from the document as well.
* CID 2218: no change to the proposed resolution.
* CID 2223: no change to the proposed resolution.
* CID 2225: Keep as “Revised.” But further change the text in the bullets under the preamble that is in question.
* CID 2238: no change to the proposed resolution.
* CID 2243: no change to the proposed resolution.
* CID 2396: no change to the proposed resolution.
* CID 2399: no change to the proposed resolution.
* CID 2436: no change to the proposed resolution.
* CID 2437: no change to the proposed resolution.
* CID 2438: no change to the proposed resolution.
* CID 2439: no change to the proposed resolution.
* CID 2505: no change to the proposed resolution.
* CID 2508: no change to the proposed resolution.
* CID 2610: added “need to” before “follow” in the Note added.
* CID 2657: no change to the proposed resolution.
* CID 2682: added “the start of” to clarify that the next SP refers to the next whole SP.
* CID 2693: no change to the proposed resolution.
* CID 2695: deferred and removed from the document.
* CID 2700: no change to the proposed resolution.
* CID 2756: no change to the proposed resolution.
* CID 2775: no change to the proposed resolution.
* CID 2784: no change to the proposed resolution.
* CID 2785: no change to the proposed resolution.
* CID 2799: no change to the proposed resolution.
* CID 2807: no change to the proposed resolution.
* Will updated as r2.
* All CIDs that are not deferred are ready for motion.

**11-19-0580-03-00ba-mac-cr-miscellaneous (Alfred, Qualcomm)**

* CID 2141: no change to the proposed resolution.
* CID 2142: no change to the proposed resolution.
* CID 2181: editorial change in 3.4 (add “-” in between “wake up”).
* CID 2506: editorial change in 3.4 (add “-” in between “wake up”).
* CID 2814: no change to the proposed resolution.
* CID 2101: no change to the proposed resolution.
* CID 2402: no change to the proposed resolution.
* CID 2770: no change to the proposed resolution.
* CID 2338: revised the deposition field so that the reference to CID 2814 becomes a note to editor after the instruction.
* CID 2577: revised the deposition field so that the reference to CID 2814 becomes a note to editor after the instruction.
* Will be updated as r4.
* All CIDs are ready to motion.

**11-19-0582-01-00ba-mac-cr-transmitter-id (Alfred, Qualcomm)**

* CID 2043: no change to the proposed resolution.
* CID 2139: no change to the proposed resolution.
* CID 2204: no change to the proposed resolution.
* CID 2207: modified the rejection reason to say basically that the use of the nontransmitter ID is a MAC functionality and as such should be specified in Clause 30 (WUR MAC specification).
* CID 2403: no change to the proposed resolution.
* CID 2405: no change to the proposed resolution.
* CID 2429: no change to the proposed resolution.
* CID 2683: no change to the proposed resolution.
* CID 2816: no change to the proposed resolution.
* CID 2817: no change to the proposed resolution.
* Will be updated as r2.
* All CIDs are ready for motion.

**11-19-0583-02-00ba-mac-cr-wur-frame-format (Alfred, Qualcomm)**

* CID 2033: no change to the proposed resolution.
* CID 2144: no change to the proposed resolution.
* CID 2145: no change to the proposed resolution.
* CID 2167: no change to the proposed resolution.
* CID 2385: no change to the proposed resolution.
* CID 2386: no change to the proposed resolution.
* CID 2401: no change to the proposed resolution.
* CID 2414: no change to the proposed resolution.
* CID 2509: no change to the proposed resolution.
* CID 2726: no change to the proposed resolution.
* CID 2733: no change to the proposed resolution.
* CID 2734: no change to the proposed resolution.
* CID 2808: no change to the proposed resolution.
* All CIDs in r2 are ready for motion.

**11-19-0584-01-00ba-mac-cr-wur-discovery-frame (Alfred, Qualcomm)**

* CID 2128: no change to the proposed resolution.
* CID 2146: no change to the proposed resolution.
* CID 2388: no change to the proposed resolution.
* CID 2510: no change to the proposed resolution.
* CID 2600: no change to the proposed resolution.
* CID 2648: correct the Length field value (should be 1, instead of 2).
* CID 2810: no change to the proposed resolution.
* CID 2811: no change to the proposed resolution.
* Will be updated as r2.
* All CIDs are ready for motion.

**11-19-0643-01-00ba-lb237-cr-for-miscellaneous-part-1 (Minyoung, Intel)**

* CID 2010: no change to the proposed resolution.
* CID 2038: no change to the proposed resolution.
* CID 2571: no change to the proposed resolution.
* CID 2113: no change to the proposed resolution.
* CID 2198: no change to the proposed resolution.
* CID 2199: Discussed the relationship between WUR and legacy PS modes, but cannot reach a consensus. The CID is deferred and removed from the document for now.
* Stop here due to out of time,

**Chair adjourned the ad-hoc meeting at 5:05pm PT without objections.**