IEEE P802.11  
Wireless LANs

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| IEEE 802.11ba Task Group Meeting Minutes for July Meeting, Vienna, Austria | | | | |
| Date: 2019-07-18 | | | | |
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Abstract

Rev 0: Meeting Minutes for the IEEE 802.11ba TG sessions held in Vienna, Austria

**Monday, July 15 2019, 8:00-10:00 am**

**Ad-Hoc Meeting Agenda:**

The ad-hoc meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-03-00ba-2019-july-tgba-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
* Summary from May 2019 Meeting
* Comment assignments for remaining CIDs (LB241)
* Presentations on comment resolution
* Adjourn

**Chair Minyoung Park (Intel) calls the ad-hoc meeting to order at 8:00 am.** (about25 persons in the room.)

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

Minyoung reminds about recording attendance (slide 5) and goes through slide 6 “Attendance, Voting & Document Status”.

Minyoung presents the schedule for the week (slide 7). There are six sessions in total.

Minyoung presents the slide “Main agenda items for the week” (slide 8). The main agenda items are shown below:

* Comment assignments for any remaining CIDs
* Comment resolution on TGba D3.0 (LB241)
* Review TG timeline

Minyoung goes through the list of submissions. (slides 9-11). 21 submissions received in total.

Minyoung goes through the agenda for the ad-hoc meeting (slide 12). Minyoung asks if there are any questions on the agenda. No response from the group. It is then proposed to let Menzo present first and then go in the sequence for the MAC presentation. No questions or objections to the agenda, so this will be the presentation order for the ad-hoc meeting.

Minyoung goes through the slides “Participants have a duty to inform the IEEE” (slide 15) and “Ways to inform IEEE” (slide 16).

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

Minyoung goes through “Other Guidelines for IEEE WG meetings” (slide 17) and “Patent-related information” (slide 18).

Minyoung reads through “Participation in IEEE 802 Meetings” (slide 19), and encourages people to read through the references on slides 20-22.

Minyoung goes through the Summary from May 2019 Meeting and Teleconference Calls, shown below.

* Resolved all the comments received on D2.0 (LB237)
* Approved WG recirculation letter ballot on D3.0
* Started a 15-day WG recirculation letter ballot (LB241) on D3.0
  + Results: 84% approve votes
  + 40 disapprove votes
    - 10 disapprove votes carried over from the previous WGLB (LB237)
    - 5 members changed their disapprove votes to approve
* Review TG timeline
* Agenda: doc:11-19/617r11

There have also been three teleconferences. The first was used to assign people to the resolutions and in the remaining two comments have been resolved. In total about 250 technical comments have been received on D3.0. The current plan is to have another recirculation after the September meeting.

**Presentations:**

**11-19/1135r1, “Assorted Comment Resolutions D3.0”, Menzo Wentink (Qualcomm):**

This document contains comment resolutions for CIDs: 3045 3063 3104 3168 3170 3273 3286 3287 3288 3390, 3009 3075 3096 3097 3098 3114 3116 3177 3208 3375

CID 3045: No discussion.

CID 3390: Same comment as CID 3045. No discussion.

CID 3273: Question (Q): There is a typo, the subclause should be 29.13, rather than 29.23.

CID 3170: No discussion. Menzo mentions that there may be another CID related to the same issue. Menzo will look into this.

Q: Please insert the actual document number in the proposed resolution.

CID 3168: Q: I believe protected management frames should be mandatory at least on the AP side. Maybe you can add a note saying that protected management frames should be used.

As a result, the proposed resolution is updated accordingly.

CID 3286: The CID is similar to 3168. No discussion.

CID 3287: The CID is similar to 3168. No discussion.

CID 3063: The proposed resolution is to not specify a value, but there has already been comments that a specific value should be specified so it appears impossible to satisfy all wishes in this respect.

Q: Can you shortly describe why a time-out is needed?

A: It is basically a countermeasure if there is an attack going on. However, the right value to use depends on the situation. The one minute was put there to indicate that it is a long time.

CID 3288: No discussion.

CID 3009. No discussion.

CID 3075: No discussion.

CID 3104: No discussion.

CID 3096: No discussion.

CID 3097: Q: You are deleting the sentence. Then I believe it will have impact elsewhere

A: I don’t believe so, but let’s defer it for now and have some discussion off-line.

CID 3098: No discussion.

CID 3114: No discussion.

CID 3116: No discussion.

CID 3177: No discussion.

CID 3208: No discussion.

CID 3375: No discussion.

Document 11-19/1135r2 will be ready for motion. CID 3097 is deferred.

**11-19/1068r2, “Comment Resolutions for Clause 6.3 MLME SAP CIDs”, Rojan Chitrakar (Panasonic):** This submission proposes resolutions of comments received from TGba comment collection (TGba Draft 2.0): CIDs: 3148, 3166, 3167, 3196, 3357 (5 CIDs)

CID 3148: No discussion.

CID 3166: No discussion.

CID 3167: No discussion.

CID 3196: No discussion.

CID 3357: This resolution is slightly updated, resulting in r3 which is currently shown on the screen but not uploaded on the server.

In addition to what was explicitly requested in the CIDs, some minor editorial changes have been made. The changes refer to text that actually has been motioned, but not included in D3.0.

Document 11-19/1068r3 will be ready for motion.

**11-19/1077r0, “Comment resolutions for Clause 3, Clause 4”, Minyoung Park (Intel):** This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs (20 CIDs):3112, 3172, 3026, 3027, 3134, 3194, 3035, 3066, 3067, 3106, 3164, 3165, 3173, 3195, 3203, 3237, 3263, 3354, 3355, 3384

CID 3112: Q: About WUR channel definition. I have a question on the last part.

A: We are not there yet, that is another CID.

CID 3172: No discussion.

CID 3026: No discussion.

CID 3027: No discussion.

CID 3134: No discussion. Minyoung explains that this was addressing the comment made on CID 3112. Q: I believe this may not be what the commenter is concerned with, and I fear the comment may come back with the proposed resolution.

A: Is there any other rejections from anyone in the room? No response.

A: I can discuss with the commenter, but my question to you is whether you have technical concerns with the proposed resolution. Based on the discussion, the CID is deferred.

CID 3194: No discussion.

CID 3035: No discussion.

CID 3066: Run out of time

**The ad-hoc meeting is adjourned at 10:00**

**Monday, July 15 2019, 1:30-3:30 pm**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-04-00ba-2019-july-tgba-agenda.pptx>

* Call meeting to order
* IEEE 802 and 802.11 IPR Policy and procedure
* **Motion**: May 2019 meeting (doc: IEEE 802.11-19/956r2) and teleconference minutes (doc: IEEE 802.11-19/1030r2) approval
* Presentations on comment resolutions
* Recess

**Chair Minyoung Park (Intel) calls the meeting to order at 1:30: pm.** (about30 persons in the room.)

Minyoung reminds about attendance

Minyoung goes through the agenda for the week (slide 13): No discussion on the agenda for the week.

**Motion to approve the agenda**

**Move:** Eunsung Park

**Second:** Lei Huang

Motion passed by unanimous consent.

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

**Motion:** Approve TGba minutes of May 2019 meeting [doc: IEEE 802.11-19/956r2] and teleconference calls [doc: IEEE 802.11-19/1030r4]

**Move:** Eunsung Park

**Second:** Steve Shellhammer

Motion passed by unanimous consent.

**Presentations:**

**11-19/1077r0, “Comment resolutions for Clause 3, Clause 4”, Minyoung Park (Intel):**

This is a continuation of the presentation in the morning session.

CID 3066: No discussion.

CID 3067: No discussion.

CID 3106: Minyoung asks the commenter if he is OK with that the resolution is rejected.

Q: If there is no other that is concerned, I am OK with it being optional. In a previous version was the feature mandatory for the AP?

A: No, it was optional for both sides.

CID 3164: No discussion.

CID 3165: No discussion.

CID 3173: No discussion.

CID 3195: Q: Did you add a sentence as suggested by the commenter?

A: Yes.

CID 3203: No discussion.

CID 3237: No discussion.

CID 3263: No discussion.

CID 3354: No discussion.

CID 3355: No discussion.

CID 3384: No discussion.

Q: Related 3027, I believe the resolution may be contradicting some of the examples.

A: Basically, we need to define multi-carrier since the term is used. The intention was to do this in as wide way as possible. Note that this is not in the sections with normative behavior, but in the definitions.

Q: Did you change the definition of PPDU?

A: No. I just added the word “basic”.

Document 11-19/1077r1 will be ready for motion. CID 3134 is deferred.

**11-19/1068r0, “CRs for Off-WG”, Steve Shellhammer (Qualcomm)**

CID 3296: No discussion.

CID 3297: No discussion.

Q: The comment was mainly about that I thought it made sense to only define these things in one place.

A: My preference was to keep it as I believe it is consistent with how things have been in other places.

Document 11-19/1068r0 is ready for motion.

**11-19/1169r0, “CR on Sync Field”, Steve Shellhammer (Qualcomm):** The document provides comment resolutions for CIDs: 3295 and 3323.

CID 3295: Q: I have one CID about revising a related comment. My resolution is not consistent with your proposal.

A: Thanks for informing me. We need to harmonize these of course.

Q: The reason why the comment wants to add HDR and LDR is because in the FDMA case it can be both HDR and LDR at the same time.

A: I see.

Q: I believe it can still be made clearer.

A: I agree. I then suggest we work on this off-line as I don’t believe we can solve it here and now.

As a result, CID 3295 is deferred.

CID 3323: No discussion.

Document 1169r1 will be ready for motion CID 3295 is deferred.

**11-19/1170r0, “CR on BPSK Mark2”, Steve Shellhammer (Qualcomm):**

The document provides comment resolutions for CIDs: 3089, 3127, 3128, 3235, 3289, 3290, 3306, 3328, 3348 and 3349.

CID 3089: No discussion.

CID 3127: No discussion.

CID 3289: No discussion.

CID 3235: No discussion.

CID 3306: Q: Can you elaborate a bit more on why it cannot be optional?

As a result Steve updates the motivation for the resolution.

CID 3128: No discussion.

CID 3290: No discussion.

CID 3328: No discussion.

CID 3348: No discussion.

CID 3349: No discussion.

Document: 11-19/1170r1 will be ready for motion

**11-19/1120r0, “False L-STF Detection Issue”, Steve Shellhammer (Qualcomm):**

The contribution is concerned with that the narrowband portion of a WUR PPDU. For the problem to occur, the assumption here is that the WUR preamble is not detected.

The suggestion is to define a new symbol.

Two possible ways: Mandate the use of MC-OOK symbols in Annex AC or Provide a list of recommended MC-OOK On symbols and in addition add an additional transmit test requiring that the autocorrelation is below a TBD threshold.

Q: To calculate the autocorrelation value, did you have a channel estimate.

A: No, at this time in the receiver processing there is no channel estimate.

Q: Did you consider PAPR?

A: I believe we did, I can check this.

Q: What is the down-side of false alarm?

A: It can potentially increase the power consumption of other devices. In addition, it may miss packets because it is currently falsely detecting a L-STF. Potentially there may be secondary affects like that the receiver believes it is a very busy network.

Q: The autocorrelation is tested based on the formula you showed?

A: Yes, that is correct.

Q: I would also prefer Option 2 in case I would have to select.

Q: What is the reason for the false trigger?

A: Because the reduced bandwidth of the signal, there will be more of memory in the signal. One may view it as this memory results in an autocorrelation peak at a lag of 800ns.

Q: Every chip has a jammer detector for radar detection, if this also reacts on this there may not be a problem.

A: I don’t think the operation is in the band where the jammer detector is used.

Q: The jammer detector may still run, even if the operation is not in this band.

Q: If you have received the legacy preamble there is no problem?

A: Correct. The assumptions here is that there is an OBSS case where the legacy preamble is missed.

Q: When we started this work, the assumption was that the legacy preamble sent ahead of the WUR packet would make the probability for this problem very low.

Q: I believe if you miss the preamble it is probably not so likely that the auto-correlator will result in that a peak is detected.

Q: Actually, I believe it is good that this happens, because this means that the device defers.

A: The thing is really that this trigger false detect at levels where the device should not really defer. The false detect may be detected at 0 dB.

Q: Even if the likelihood is small, the point is that it easy to avoid the problem at this point.

A: There is also a cost in agreeing on the text for the specification. We would like to avoid to add new text to the specification at this time.

Q: I would first like to see that the group believe this is a real problem.

**Recess at 3.30pm**.

**Tuesday, July 16 2019, 8:00-10:00 am**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-05-00ba-2019-july-tgba-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 8:00 am.** (about10 persons in the room.)

Minyoung goes through the agenda for this session and asks if there are any questions or comments. No response from the group.

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

**Presentations:**

**11-19/1178r0, “Study of False L-STF Detections Triggered by MC-OOK” Miguel Lopez (Ericsson):** The presentation describes in some detail what causes the problems and also a simple means to solve it.

Q: Typically, a receiver does not only rely on the STF, but continue to process also LTF etc.

Q: During the PPDU, will there be sporadic peaks or do get a repetitive pattern?

A: In a practical situation I expect in can be either (This response was not from Miguel, but from another person in the room.)

Q: What is the impact on the third party device?

A: From a system perspective it is not entirely clear how often this would occur. What is clear is that a false detect of the STF may result in that you e.g. miss a packet intended for you. This was not at all addressed in this presentation.

Q: Do you believe the power consumption would be significantly impacted for the legacy?

A: This depends much on the implementation, and even more on how often this will happen.

**11-19/1084r0, “Comment resolutions for Clause 29.1, Clause 30.1”, Minyoung Park (Intel):**

This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs (4 CIDs): 3120, 3221, 3222, 3274

CID 3120: No discussion.

CID 3221: The resolution is changed from “Accepted” to “Revised”, based on a minor editorial update.

CID 3222: The resolution is changed from “Accepted” to “Revised”, based on a minor editorial update.

CID 3274: No discussion.

Document 11-19/1084r1 will be ready for motion.

**11-19/1086r0, “Comment resolutions for WUR channels”, Minyoung Park (Intel):**

This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs (4 CIDs): 3071, 3072, 3311, 3358

CID 3071: No discussion.

CID 3072: No discussion.

CID 3311: A note is added to explain why the same band should be used for the WUR and the PCR, namely that it is desirable to have similar range.

CID 3358: No discussion.

Document 11-19/1086r1 will be ready for motion.

**11-19/1087r0, “Comment resolutions for miscellenious comments”, Minyoung Park (Intel):**

This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs (7 CIDs):

3180, 3181, 3182, 3186, 3189, 3192, 3193

CID 3180: No discussion.

CID 3181: Q: Why does the commenter says these are inaccurate terms?

A: I don’t know since it does not say in the resolution.

The motivation for the rejection is updated to reflect this.

CID 3182: No discussion.

CID 3186: The text in the resolution is slightly updated. It is noted that the comment is not on D3.0, but on D1.0, and basically it is no longer applicable as the text has changed.

CID 3189: The text in the resolution is slightly updated in that the subclause number, 29.10, is added.

CID 3192: No discussion.

CID 3193: No discussion.

Document 11-19/1087r1 will be ready for motion.

**Recess at 9:58am.**

**Tuesday, July 16 2019, 4:00-6:00 pm**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-06-00ba-2019-july-tgba-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 4:00 pm.** (about25 persons in the room.)

Minyoung reminds about attendance.

Minyoung goes through the agenda and asks if there is any discussion. No response from the group.

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

**Presentations:**

11-19/1179r1, “CR for TX/RX Specification D3.0”, Leif Wilhelmsson (Ericsson):

This document contains some proposed solutions to the following CIDs

-3130,3131,3232,3233,3234,3291,3333,3334,3335,3336,3337,3338,3339

CID 3130: No discussion.

CID 3131: No discussion.

CID 3232: No discussion.

CID 3233: No discussion.

CID 3234: No discussion.

CID 3291: After discussion with the commenter, the CID is deferred. Essentially it will be changed to Revised, but some discussion on the wording will be done off-line.

CID 3333: No discussion.

CID 3334: No discussion.

CID 3335: No discussion.

CID 3336: No discussion.

CID 3337: No discussion.

CID 3338: No discussion.

CID 3339: No discussion.

Document 11-19/1179r2 will be ready for motion. 1 CID is deferred.

**11-19/1193/r1, “TGba D3.0 Comment Resolutions for Data Field”, Eunsung Park (LGE):**

This submission proposes resolutions for comments of TGba D3.0 with the following 4 CIDs:

3086, 3292, 3293, 3294

CID 3086: No discussion.

CID 3292: No discussion.

CID 3293: No discussion.

CID 3294: No discussion.

Document 11-19/1193r1 is ready for motion.

**11-19/1194r0, “TGba D3.0 Comment Resolutions for WUR PHY FDMA and Padding”, Eunsung Park (LGE):**

This submission proposes resolutions for comments of TGba D3.0 with the following 10 CIDs:

3023, 3129, 3133, 3178, 3183, 3184, 3185, 3199, 3329, 3330

CID 3023: No discussion.

CID 3129: No discussion.

CID 3133: No discussion.

CID 3178: No discussion.

CID 3183: No discussion.

CID 3184: The motivation for the rejection is updated. Basically, the comment seems to be on D1.0 rather than D3.0, and the paragraph does not exist in D3.0

CID 3185: No discussion.

CID 3199: No discussion.

CID 3329: No discussion.

CID 3330: No discussion.

Document 11-19/1194r1 will be ready for motion.

11-19/1203r0, “D3.0 Comment Resolution on PHY Interface”, Jae Seung Lee (ETRI): This document proposes resolutions for following CIDs on Clause 30.2.2 TXVECTOR and RXVECTOR parameters: 5 CIDs: 3124, 3313, 3314, 3315, and 3316.

CID 3124: No discussion.

CID 3313: No discussion.

CID 3314: No discussion.

CID 3315: No discussion.

CID 3316: No discussion.

Document 11-19/1203r0 is ready for motion.

**11-19/1232r1, “TGba D3.0 Comment Resolutions for Legacy Preamble” Rui Cao (Marvell):**

This submission proposes resolutions for comments received on Legacy Preamble for WUR in TGba D3.0. The following is the list of CIDs: 3125, 3126, 3228, 3325, 3326, 3327, 3381, 3382

CID 3325: No discussion

CID 3125: Minyoung believes Vinod may be resolving the same CID. As a result this CID is deferred.

CID 3326: No discussion.

CID 3327: No discussion.

CID 3126: No discussion.

CID 3228: Changed from Accepted to Revised.

CID 3382: No discussion.

CID 3381: No discussion.

Document 11-19/1232r2 will be ready for motion. 1 CID is deferred.

**11-19/1169r1, “Comment Resolutions on Sync Field”, Steve Shellhammer (Qualcomm):**

CID 3295 was deferred in the previous presentation, and after some off-line discussion a resolution to 3295 has now been found.

CID 3295: No discussion.

Document 11-19/1169r1 is ready for motion.

**11-19/1069r0, “Comment Resolution on clause 30.9.2 and 30.9.3 Protected WUR frames”, Rojan Chitrakar (Panasonic)**: This submission proposes resolutions of comments received from TGba comment collection (TGba Draft 2.0).

CIDs: 3206, 3258, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3279, 3280, 3281, 3282, 3283, 3284, 3389, 3275, 3276 (19 CIDs)

CID 3206: No discussion.

CID 3258: The resolution is changed from Rejected to Accepted after discussion in the TG.

CID 3389: No discussion.

CID 3265: No discussion.

CID 3266: No discussion.

CID 3267: No discussion.

CID 3268: No discussion.

CID 3269: No discussion.

CID 3270: No discussion.

CID 3271: No discussion.

CID 3272: No discussion.

CID 3279: No discussion.

CID 3280: No discussion.

CID 3281: No discussion.

CID 3282: No discussion.

CID 3283: No discussion.

CID 3284: No discussion.

CID 3275: No discussion.

CID 3276: No discussion.

Document 11-19/1069r1 will be ready for motion.

**11-19/1176r0, “CR on Group ID related CIDs”, Lei Huang (Panasonic):**

This submission proposes resolutions for the following comments from the letter ballot on P802.11ba D3.0: 2 CIDs: 3093, 3142

CID 3093: No discussion.

CID 3142: No discussion.

Document 11-19/1176r0 is ready for motion.

**11-19/1086r2, “Comment resolutions for WUR channels”, Minyoung Park (Intel):**

CID 3311: The text has been updated based on email discussion with the commenter. There is no change with the resolution as such.

Q: Can there not be a contradiction with the current formulation if a band is not supported?

A: No. I don’t believe there is any problem along the lines you describe

Document 11-19/1086r2 is ready for motion.

**11-19/1269r0, “CR for CID 3109 and 3145”, Xiaofei Wang (Interdigital):**

This submission proposes resolutions for the following CIDs: 3109 and 3145.The baseline for this comment resolution document is 802.11ba Draft 3.0.

CID 3109: Q: Why do you say set to 0, rather than reserved?

A: I believe it has the same effect.

Based on the discussion, the revision is changed from Revised to Accepted.

CID 3145: No discussion.

Document 11-19/1269r1 will be ready for motion.

**Recess at 5.59 pm.**

**Wednesday, July 17 2019, 1:30-3:30 pm**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-07-00ba-2019-july-tgba-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 1.30 pm.** (about20 persons in the room.)

Minyoung reminds about attendance.

Minyoung goes through the agenda for the session and asks if there are any questions or comments. One presentation (11-19/1304r0) is added to the agenda.

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

**Presentations:**

**11-19/1202r0, “Comment Resolutions on Power Management and Capabilities”, Suhwook Kim (LGE)**

This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs: 12 CIDs: 3010, 3040, 3053, 3057, 3080, 3081, 3094, 3103, 3121, 3151, 3308, 3401

CID 3010: No discussion.

CID 3040: No discussion.

CID 3053: The proposed text is modified.

CID 3057: The reasoning for rejection is modified.

CID 3080: The resolution is changed from Accepted to Revised. The proposed text is modified.

CID 3081: The resolution is changed from Accepted to Revised. The proposed text is modified.

CID 3094: No discussion.

CID 3103: The reasoning for rejection is modified. Deferred.

Q: This CID is related to my contribution (1304r0) today. So, I’d like to request to defer this CID.

A: PHY sync field can only indicate two PHY rates.

CID 3121: No discussion.

CID 3151: The reasoning for rejection is modified. Deferred.

Q: It is better to defer this CID and further discuss the transition.

CID 3308: The reasoning for rejection is modified.

CID 3401: No discussion.

11-19/1202r1, containing 10 CIDs (3010, 3040, 3053, 3057, 3080, 3081, 3094, ~~3103~~, 3121, ~~3151~~, 3308, 3401), will be ready for motion.

**11-19/1304r0, “ULDR (ultra low date rate)”, Tolgay Ungan (Endiio):** This submission introduces ULDR (ultra low date rate) that leads to lower power consumption and lower noise.

Q: The longer PPDU consumes more power.

A: The sampling rate can be smaller and the power consumption becomes lower.

Q: In a dense network, the long PPDU may cause a significant problem.

Q: Overall power consumption does not change depending on the data rate.

Q: From the regulation viewpoint, a narrow bandwidth can lead to a transmit power limitation.

Q: Do you have any specific receiver front-end design to achieve low power consumption?

A: I have a reference

**Straw Poll:** Do you support the specification of the ULDR (ultra low date rate) in TGba?

Q: Is this for 11ba?

A: Yes.

Q: This proposal may be more acceptable to the future WUR which targets sub-1GHz.

Q: Is your concern that the WUR power consumption is too high?

A: Yes.

Q: What is your target power consumption?

A: 100uW.

**Result:** Y/N/A: 0/11/10

**Straw Poll:** Do you support the specification of the ULDR (ultra low date rate) in new TG?

**Result:** Y/N/A: 4/0/15

**Recess at 3.20 pm.**

**Thursday, July 18 2019, 10:30-12:30 am**

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: <https://mentor.ieee.org/802.11/dcn/19/11-19-0988-10-00ba-2019-july-tgba-agenda.pptx>

* Call meeting to order
* IEEE 802 and 802.11 IPR Policy and procedure
* Presentations on comment resolutions (1hour)
* **Motions: Comment resolutions**
* TG timeline discussion
* Goal for September 2019 F2F meeting
* Teleconference call schedule
* Adjourn

**Chair Minyoung Park (Intel) calls the meeting to order at 10:30 am.** (about20 persons in the room.)

Minyoung reminds about attendance.

Minyoung goes through the submissions for this week and concludes that the group has completed all PHY and MAC submission. What remains is the presentation by Joe Levy. Minyoung proposes to allocate 30 minutes to this before doing the motions.

Minyoung presents the agenda and asks if there are any comments or questions. No questions asked.

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

**Presentation:**

**11-19/0829r2, “TGba Possible Architecture and Specification Issues”, Joseph Levy (Interdigital):** The presentation discusses three basic concepts that the presenter believes need some more work. These three relate to:

1. Multi-channel operation,
2. Definition of WUR functionality
3. WUR PPDU capability.

One problem here comes from that a STA by definition operates in a single band. In case a device is able to operate in more than one band, it contains multiple STAs.

Joe also believes that the specification is not aligned with that a STA only can be in one specific state at a time.

It becomes apparent that Joe will not be able to cover the entire presentation and at the same time allow sufficient time for discussion. It is decided to end the presentation at page 13 and take Q&A up until this slide.

Q: I believe the reason for your view is what is written on slide 9, i.e., the state definition. I believe state in the current spec can be used to describe a behavior of a STA. With this interpretation it is not so that a STA can only be in a single state.

A: There can be many state engines that are independent, but as things are written in the 11.ba spec the state engines are nested so they are dependent. I believe this is the problem.

A: Another cause to the problem, as it appears to me, is that the WUR is not treated as a separate STA with its separate state machine, but rather that the WUR is part of the STA containing the PCR.

Q: For me the state of the PCR is independent of the state of the WUR. The WUR state is only relevant when the PCR is in the doze state. However, I believe the WUR can still be independent of the state of the PCR.

A: I don’t agree that a state machine that is triggered from another state machine is independent.

No more time for Q&A on this presentation.

**Motions (The complete set of motions can also be found in document 11-19/0988r11):**

**Motion #3001:**

Move to accept the comment resolutions in [11-19/1193r1] for the CIDs listed below:  
[3086, 3292, 3293, 3294]

**Move:** Eunsung Park

**Second:**Suhwook Kim

**Result:** Motion passed by unanimous consent.

**Motion #3002:**

Move to accept the comment resolutions in [11-19/1194r1] for the CIDs listed below:  
[3023, 3129, 3133, 3178, 3183, 3184, 3185, 3199, 3329, 3330]

**Move:** Eunsung Park

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent.

**Motion #3003:**

Move to accept the comment resolutions in [11-19/1269r1] for the CIDs listed below:  
[3109, 3145]

**Move:** Rui Yang

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent.

**Motion #3004:**

Move to accept the comment resolutions in [11-19/1067r1] for the CIDs listed below:  
[3044, 3062, 3073, 3190]

**Move:** Rojan Chitrakar

**Second:** Lei Huang

**Result:** Motion passed by unanimous consent.

**Motion #3005:**

Move to accept the comment resolutions in [11-19/1068r3] for the CIDs listed below:  
[3148, 3166, 3167, 3196, 3357]

**Move:** Rojan Chitrakar

**Second:** Lei Huang

**Result:** Motion passed by unanimous consent.

**Motion #3006:**

Move to accept the comment resolutions in [11-19/1069r1] for the CIDs listed below:

[3206, 3258, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3279, 3280, 3281, 3282, 3283, 3284, 3389, 3275, 3276]

**Move:** Rojan Chitrakar

**Second:** Lei Huang

**Result:** Motion passed by unanimous consent

**Motion #3007:**

Move to accept the comment resolutions in [11-19/1029r1] for the CIDs listed below:

[3079, 3108, 3118, 3197, 3376]

**Move:** Lei Huang

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3008:**

Move to accept the comment resolutions in [11-19/1176r0] for the CIDs listed below:

[3093, 3142]

**Move:** Lei Huang

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3009:**

Move to accept the comment resolutions in [11-19-1202r1] for the CIDs listed below:

[3010, 3040, 3053, 3057, 3080, 3081, 3094, 3121, 3308, 3401]

**Move:** Suhwook Kim

**Second:** Eunsung Park

**Result:** Motion passed by unanimous consent

**Motion #3010:**

Move to accept the editorial comment resolution in 11-19/1025r1

**Move:** Rojan Chitrakar

**Second:** Eunsung Park

**Result:** Motion passed by unanimous consent

**Motion #3011:**

Move to accept the comment resolution in 11-19/1049r1 for CIDs listed below:

3042, 3076, 3146, 3246, 3363, 3364

**Move:** Rojan Chitrakar

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3012:**

Move to accept the comment resolution in 11-19/1050r0 for CIDs listed below:

3033, 3107, 3110

**Move:** Rojan Chitrakar

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3013:**

Move to accept the comment resolution in 11-19/1052r3 for CIDs listed below:

3039, 3061, 3087, 3155, 3380, 3105, 3144, 3157, 3201, 3158, 3159, 3379

**Move:** Rojan Chitrakar

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3014:**

Move to accept the comment resolution in 11-19/1124r1 for CIDs listed below:

3029

**Move:** Rojan Chitrakar

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3015:**

Move to accept the comment resolutions in [11-19/1179r2] for the CIDs listed below:

[3130,3131,3232,3233,3234,3333,3334,3335,3336,3337,3338,3339]

**Move:** Leif Wilhelmsson

**Second:** Steve Shellhammer

**Result:** Motion passed by unanimous consent

**Motion #3016:**

Move to accept the comment resolutions in [11-19/1077r1] for the CIDs listed below:

[3112, 3172, 3026, 3027, 3194, 3035, 3066, 3067, 3106, 3164, 3165, 3173, 3195, 3203, 3237, 3263, 3354, 3355, 3384]

**Move:** Minyoung Park

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3017:**

Move to accept the comment resolutions in [11-19/1084r1] for the CIDs listed below:

[3120, 3221, 3222, 3274]

**Move:** Minyoung Park

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3018:**

Move to accept the comment resolutions in [11-19/1086r2] for the CIDs listed below:

[3071, 3072, 3311, 3358]

**Move:** Minyoung Park

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3019:**

Move to accept the comment resolutions in [11-19/1087r1] for the CIDs listed below:

[3180, 3181, 3182, 3186, 3189, 3192, 3193]

**Move:** Minyoung Park

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3020:**

Move to accept the comment resolutions in [11-19/1203r0] for the CIDs listed below:  
[3124, 3313, 3314, 3315, 3316]

**Move:** Jae Seung Lee

**Second:** Suhwook Kim

**Result:** Motion passed by unanimous consent

**Motion #3021:**

Move to accept the comment resolutions in 802.11-19/1168r0 for the CIDs listed below:

3296,3297

**Move:** Steve Shellhammer

**Second:** Leif Wilhelmsson

**Result:** Motion passed by unanimous consent

**Motion #3022:**

Move to accept the comment resolutions in 802.11-19/1169r1 for the CIDs listed below:

3295, 3323

**Move:** Steve Shellhammer

**Second:** Leif Wilhelmsson

**Result:** Motion passed by unanimous consent

**Motion #3023:**

Move to accept the comment resolutions in 802.11-19/1170r1 for the CIDs listed below:

3089, 3127, 3128, 3235, 3289, 3290, 3306, 3328, 3348, 3349

**Move:** Steve Shellhammer

**Second:** Leif Wilhelmsson

**Result:** Motion passed by unanimous consent

**Motion #3024:**

Move to accept the comment resolutions in 802.11-19/1056r1 for the CIDs listed below:

3113, 3136, 3139, 3143, 3147, 3161, 3162, 3163, 3350, 3351, 3352, 3353

**Move:** Menzo Wentink

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3025:**

Move to accept the comment resolutions in 802.11-19/1057r1 for the CIDs listed below:

3036, 3092, 3137, 3140

**Move:** Menzo Wentink

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3026:**

Move to accept the comment resolutions in 802.11-19/1058r1 for the CIDs listed below:

3051, 3078, 3099, 3102, 3060

**Move:** Menzo Wentink

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3027:**

Move to accept the comment resolutions in 802.11-19/1059r0 for the CIDs listed below:

3400

**Move:** Menzo Wentink

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Presentation**

**11-19/1135r4, “Assorted Comment Resolutions D3.0”, Menzo Wentink (Qualcomm):**

Revision 2 of this document has already been made ready for motion. This document has been updated to revision 4, and compared to revision 2 a resolution to CID 3097 is added.

Q: Did you revert back to revision 2 from revision 3?

A: Yes. I got the impression that this was preferred by the group. There may be editorial updates in the future, but there should not be technical updates.

Document 11-19/1135r4 is ready for motion.

**Motion #3028:**

Move to accept the comment resolutions in [11-19/1135r4] for the CIDs listed below:

3045, 3063, 3104, 3168, 3170, 3273, 3286, 3287, 3288, 3390, 3009, 3075, 3096, 3098, 3114, 3116, 3177, 3208, 3375, 3396, 3097

**Move:** Menzo Wentink

**Second:** Rojan Chitrakar

**Result:** Motion passed by unanimous consent

**Motion #3029:**

Move to accept the comment resolutions in 11-19/1232r2 for the CIDs listed below:

3126, 3228, 3325, 3326, 3327, 3381, 3382

**Move:** Rui Cao

**Second:** Eunsung Park

**Result:** Motion passed by unanimous consent

**TGba Timeline discussion:**

The TGba timeline is left unchanged and is shown below. Some additions for August and September 2019 are made and more details for November 2019 are added.

* **2017**
  + **January**: TGba formation meeting
* **2018**
  + **January**: TGba Draft 0.1
  + **September**: TGba Draft 1.0
  + **November**: Comment resolution on TGba Draft1.0
* **2019:**
  + **January**: TGba Draft 2.0
  + **March**: Comment resolution on D2.0
  + **May**: TGba Draft 3.0 – WG Recirculation LB
  + **July**: Comment resolution on D3.0, MDR/MEC done
  + August: Formation of sponsor ballot pool (invitation open until Aug. 7)
  + **September**: TGba Draft 4.0, Formation of sponsor ballot pool
  + October MDR/MEC done
  + **November**: TGba Draft 5.0 (unchanged draft), Sponsor ballot
* **2020:**
  + **September**: RevCom

It is noted that we need to start the Sponsor ballot before February 2020, since it needs to be done within 6 months after formation of the sponsor ballot pool.

Q: I wonder if this is consistent with md and ax. I don’t think it is possible to have a recirculation without changes until 11ax and 11md are finished.

A: OK, I will check this with Dorothy. If this is the case, this means that we cannot go to sponsor ballot before 11ax and 11md.

**Goals for September 2019:**

* Complete comment resolution on D3.0 (LB241)
* Approve a WG recirculation letter ballot on D4.0
* Review timeline

**Teleconference Call Schedule:**

Proposed schedule (Monday, 2 hours):

* August 5th, 10:00 ET
* August 19th, 17:00 ET
* August 26th, 23:00 ET

Q: How many comments on D3.0 have been resolved up until now?

A: The TG has resolved 198 technical comments using the teleconferences and the f2f meeting. 76 technical comments remain.

**The meeting is adjourned without objection at 12.09 pm.**