IEEE P802.11  
Wireless LANs

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| Comment resolutions for HDR/LDR related comments | | | | |
| Date: 2019-5-14 | | | | |
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Abstract

This submission proposes resolutions for multiple comments related to TGba D2.0 with the following CIDs (16 CIDs):

* 2059, 2071, 2072, 2476, 2442,
* 2527, 2303, 2304, 2305, 2306,
* 2348, 2349, 2358, 2360, 2361,
* 2362

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revised resolution.
* Rev 2: Revised resolutions based on the feedback from the group.

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 TGba Draft. This introduction is not part of the adopted material.

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

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

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 2059 | Alphan Sahin | 31.1 | 83 | 26 | Change "The WUR PHY provides support for data rates of 62.5 kb/s and 250 kb/s." to "The WUR PHY provides support for data rates of 62.5 kb/s and optionally 250 kb/s.", similar to the description for channel widths on line 33 of this page | See the comment | Rejected.  The sentence describes the supported two PHY rates. In the later part of the section, there are clarification which PHY rate is manatory or optional. |
| 2071 | Bo Sun | 31.1 | 83 | 46 | "low data rate" is not clear and not defined anywhere. | replace with "62.5 kb/s data rate" or define "low data rate" somewehre in the spec. | Revised.  Agree in principle. In D2.0, there is no clear mapping between low data rate (LDR) to 62.5kb/s and high data rate (HDR) to 250 kb/s. The proposed resolution is to add the following sentence “LDR (low data rate) indicates 62.5 kb/s and HDR (high data rate) indicates 250 kb/s.  TGba editor to make the changes shown in doc.: IEEE 802.11-19/0645r2 under all headings that include CID 2071. |
| 2072 | Bo Sun | 31.1 | 83 | 48 | "high data rate" is not clear and not defined anywhere. | replace with "250 kb/s data rate" or define "high data rate" somewehre in the spec | Revised.  Agree in principle. In D2.0, there is no clear mapping between low data rate (LDR) to 62.5kb/s and high data rate (HDR) to 250 kb/s. The proposed resolution is to add the following sentence “LDR (low data rate) indicates 62.5 kb/s and HDR (high data rate) indicates 250 kb/s.  TGba editor to make the changes shown in doc.: IEEE 802.11-19/0645r2 under all headings that include CID 2072. |
| 2476 | Minyoung Park | 31.1 | 83 | 48 | Mandating both HDR and LDR at the WUR AP increases complexity. Since HDR support at the WUR non-AP STA is optional, it becomes a burden to the WUR AP to implement HDR without knowing if there will be a WUR STA that supports HDR. Support of HDR at WUR AP should be optional. | Move "-- A WUR PPDU with 20 MHz channel width, high data rate, and single stream." to P83L55 of D2.0 under "A WUR AP may support the following features:" | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2442 | Minyoung Park | 4.3.15a | 21 | 38 | The capability to transmit 20MHz WUR PPDU at HDR should be optional for a WUR AP because the capability is optional for a WUR non-AP STA and depending on the location of the WUR non-AP STA, the WUR AP may or may not use the HDR. Also it increases the implementation complexity for the WUR AP by mandating the support of HDR. The mandatory features should be a minimum set of features that are necessary for the 802.11ba system to work. In that sense, HDR is an addtional optimization and the 802.11ba still works without HDR. | Move "-- Transmit a 20 MHz WUR PPDU at HDR" to P21L51 under the optional feature list of the WUR AP. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2527 | Po-Kai Huang | 4.3.15a | 21 | 38 | Mandating WUR AP to support HDR may slow down the adoption rate of 11ba on existing AP. Specifically, HDR has a 2us symbol boundary on the data field, which is different from the existing 4us symbol boundary supported by 11n/ac/ax APs. As a result, mandating HDR for WUR AP will require more HW change for the existing AP. On the other hand, if we only mandate LDR for WUR AP, then we may have a chance to allow SW and firmware update for existing AP to support 11ba. Note that it is true that WUR sync field also has 2 us boundary. However, WUR sync field is fixed and can be created and saved in a buffer. Since WUR data field is not fixed, further HW change is then required. | Make it optional for AP to support transmitting WUR frame with HDR. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2303 | MARC EMMELMANN | 32.1 | 65 | 56 | why do not WUR receiver STA support a WUR PPDU with 20MHz channel width, high data rate, and single stream ? for the efficient transmission, this feature supported on WUR transmitter STA as a mandatory feature should be supported on WUR receiver. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2304 | MARC EMMELMANN | 32.1 | 65 | 56 | Propose that WUR non-AP STA to support Receive 20 MHz WUR PPDU with High Data Rate as a mandatory feature | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2305 | MARC EMMELMANN | 32.1 | 65 | 55 | HDR is mandatory at TX but optional at RX. In the conventional 802.11 system, TX and RX have the same mandatory and optional MCS featrures. So, it would be better if WUR uses the same mandatory data rates between TX and RX. Since HDR provides several advantages such as less overhead and higher throughput, it is recommended that HDR is used as a mandatory feature at both TX and RX. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2306 | MARC EMMELMANN | 32.1 | 65 | 51 | The 20 MHz WUR PPDU transmission at HDR should be optional since it is optional for the WUR non-AP STA. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2348 | MARC EMMELMANN | 9.4.2.274 | 33 | 56 | Propose that WUR non-AP STA to support Receive 20 MHz WUR PPDU with High Data Rate as a mandatory feature | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2349 | MARC EMMELMANN | 9.4.2.274 | 33 | 48 | The support for the transmission and reception of a 20 MHz WUR PPDU at HDR (high data rate) should be optional for both the WUR AP and the WUR non-AP STA since it is optional for the WUR non-AP STA. Therefore "Indicate support for the reception of 20 MHz WUR PPDU with HDR." should be replaced by the following "Indicate support for the 20 MHz WUR PPDU at HDR.", and "Set to 1 to indicate support for the reception of 20 MHz WUR PPDU with HDR. Set to 0 otherwise." should be replaced by the following "Set to 1 to indicate support for the 20 MHz WUR PPDU at HDR. Set to 0 otherwise." and delete the following in P33L54 "Reserved for a WUR AP." | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2358 | MARC EMMELMANN | 4.3.15a | 22 | 3 | To simplify the spec., implementation and operation, Receive 20 MHz WUR PPDU with High Data Rate should be mandatory for WUR non-AP STA. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2360 | MARC EMMELMANN | 4.3.15a | 21 | 58 | To simplify the spec., implementation and WUR operation, receive 20 MHz WUR PPDU with High Data Rate should be mandatory for WUR non-AP STA. It is a fairly simple effort to add this capability in the WUR non-AP STA considering that the spec. already requires the WUR non-AP STA to implement a mechanism to receive Low Data Rate. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2361 | MARC EMMELMANN | 4.3.15a | 21 | 31 | Mandating WUR AP to support HDR may slow down the adoption rate of 11ba on existing AP. Specifically, HDR has a 2us symbol boundary on the data field, which is different from the existing 4us symbol boundary supported by 11n/ac/ax APs. As a result, mandating HDR for WUR AP will require more HW change for the existing AP. On the other hand, if we only mandate LDR for WUR AP, then we may have a chance to allow SW and firmware update for existing AP to support 11ba. Note that it is true that WUR sync field also has 2 us boundary. However, WUR sync field is fixed and can be created and saved in a buffer. Since WUR data field is not fixed, further HW change is then required. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |
| 2362 | MARC EMMELMANN | 4.3.15a | 21 | 9 | "Transmit 20 MHz WUR PPDU with High Data Rate" should be an optional feature since the reception of the WUR PPDU at High Data Rate is optional. | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.  The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Rejected.  TGba agreed to keep the mandatory support of HDR at the WUR AP and optional support of HDR at the WUR non-AP STA. |

**31. Wake-Up Radio (WUR) PHY specification  
31.1 Introduction**

**TGba Editor: *Change the sentence below in P91L26 in TGba Draft 2.1 as follows:***

The WUR PHY provides support for data rates of 62.5 kb/s and 250 kb/s. LDR (low data rate) indicates 62.5 kb/s and HDR (high data rate) indicates 250 kb/s.(#2071, 2072)