IEEE P802.11
Wireless LANs

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| 11be D2.0 CR for OM Part 1 |
| Date: 2022-07-08 |
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Abstract

This submission proposes resolutions for the following CIDs:

11703, 13859, 10205, 11828, 12157, 12243, 12244, 12954, 12121

Revisions:

* Rev 0: Initial version of the document.

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 TGbe D2.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbe D2.0 Draft. (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

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| **CID** | **Commenter** | **Clause** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 11703 | Abdel Karim Ajami | 35.10 | 512.57 | Triggered TXOP sharing is not MU Data. Add disablement functionality for the STA to indicate to the AP that it disables UL MU Data but not TXOP sharing, and vice versa | As in the comment | Revised –In the baseline, UL MU Data disable only disables data response to Basic Trigger frame as shown below. *Trigger based UL MU Data frametransmissions in response to a BasicTrigger frame are suspended by the STA as defined in 26.9.3 (Transmit operating mode (TOM) indication).Other trigger based UL MU transmissions remain enabled by the STA as defined in 26.9.3 (Transmit operating mode (TOM) indication).**If a non-AP HE STA has received the OM Control UL MU Data Disable RX Support field in the HECapabilities element set to 1, then the non-AP HE STA, acting as an OMI initiator, may set the UL MUDisable subfield to 0 and the UL MU Data Disable subfield to 1 to indicate that only UL MU Data frame transmission is suspended. In other words, UL MU control response frame transmissions in response to a Basic Trigger frame are not suspended (see 26.5.2 (UL MU operation)), responses to other Trigger framevariants are not suspended, and management frame transmissions are not suspended.*However, it is true that it is not reflected in the following sentence*An OMI responder that has transmitted the OM Control UL MU Data Disable RX Support subfield set to 1shall regard an OMI initiator as capable of participating in UL MU operation only for transmittingacknowledgments if the UL MU Disable subfield is equal to 0 and the UL MU Data Disable subfield isequal to 1 in the most recently received OM Control subfield from that OMI initiator.*We revise the sentence to reflect the actual intention of UL MU Data disable. TGbe editor to make the changes shown in 11-22/1025r0 under all headings that include CID 11730 |
| 13859 | Sanghyun Kim | 35.10. | 512.57 | An EHT STA includes both the EHT OM Control subfield and OM Control subfield within the same A-Control subfield.Therefore, an EHT STA that sets the EHT OM Control Support subfield to 1 shall set OM Control Support subfield in the HE Capabilities element to 1. | As in comment. | Rejected –The following 3 existing sentences satisfy what the commenter requests to add.*An EHT STA with dot11EHTOMIOptionImplemented that is equal to true shall setdot11OMIOptionImplemented to true.**An EHT STA with dot11EHTOMIOptionImplemented that is equal to true shall set the EHT OM ControlSupport subfield in the EHT MAC Capabilities Information field in the EHT Capabilities element ittransmits to 1**An HE STA with dot11OMIOptionImplemented equal to true shall set the OM Control Support subfield inthe HE MAC Capabilities Information field in the HE Capabilities element it transmits to 1.* |
| 10205 | John Wullert | 9.2.4.7.8 | 124.35 | There should be an editors instruction before Sub-clause 9.2.4.7.8 to ind'icate that this is an addition | Add apropriate instruction | Revised –We move the following instruction at the beginning of page 123 to be right before 9.2.4.7.8.***Insert the following new subclause after 9.2.4.7.7 (CAS Control)***TGbe editor to make the changes shown in 11-22/1025r0 under all headings that include CID 10205 |
| 11828 | Alfred Asterjadhi | 9.2.4.7.8 | 124.36 | I think this field should be called EHT OM Extension. | As in comment. | Rejected – We use EHT OM rather than EHT OM extension, so that it does not imply EHT OM is placed after OM Control and parsing of the hardware needs to do sequential parsing and combine. The intention of the design is that it will look at the EHT OM control ID and understand it is the specific format since OM will always come after as described below. Further, existing OM signaling can be reused. *An EHT STA that transmits a frame with an A-Control subfield of HE variant HT Control field, whichincludes an EHT OM Control subfield shall concatenate the OM Control subfield within the same A-Control subfield after the EHT OM Control field.* |
| 12157 | Michail Koundourakis | 9.2.4.7.8 | 126.16 | "Indication.." column uses "Primary" but this about the full operating channel width. | Remove Primary from column | Rejected – We provide the following example to explain the reasoning.When the BSS operating bandwidth is larger than 20 MHz, the indication of 20 MHz does indicate that the STA is in primary 20 MHz and not other places.  |
| 12243 | Stephen McCann | 9.2.4.7.8 | 125.01 | "EHT OM Control subfiled" is missing an article. | Change "in EHT OM Control subfield" to "in the EHT OM Control subfield". Make the same change at P125L3, P125L7, P125L44, P125L57, P126L1, P126L3, P126L8, P126L28, P126L34, P126L36, P126L39 and P127L18. There may also be other instances of this issue throughout the draft. | Revised – We do similar editorial changes through the clause.  TGbe editor to make the changes shown in 11-22/1025r0 under all headings that include CID 12243 |
| 12244 | Stephen McCann | 9.2.4.7.8 | 126.22 | In Table 9-33b, it's probably worthwhile also stating that the 320 MHz option is the Primary one. I appreciate that there may only be one possible allocation at the moment. | Change "320 MHz" to "Primary 320 MHz" | Rejected – Due to the reason that 320 MHz is the largest possible channel width, the 11be spec does not define primary 320 MHz. |
| 12954 | Chunyu Hu | 9.2.4.7.8 | 124.36 | The EHT OM Control subfield doesn't have to be present in conjunction with other (HE) OM subfield even when the operating bw is 320 MHz (or other conditions). When absent, these fields should be treated as if carrying value 0's in the interpretation indicated in the tables below. This clarification text should be added. | Please add corresponding description as comment points out. | Rejected – We note that EHT OM Control is always together with OM Control as described in the following sentence. The intention is to have them together, and EHT OM always comes first, so when hardware sees EHT OM control ID, hardware can directly understand a specific format rather than multiple format through sequential parsing and combine. *An EHT STA that transmits a frame with an A-Control subfield of HE variant HT Control field, whichincludes an EHT OM Control subfield shall concatenate the OM Control subfield within the same A-Control subfield after the EHT OM Control field.* |
| 12121 | JINYOUNG CHUN | 9.4.1.53 | 182.08 | Operating Mode field includes 'Channel Width subfield' and '160/80+80 BW subfield'. But EHT STA can operate up to 320 MHz BW and the subfields don't support it. So these subfields should be also updated, not only Rx NSS for EHT STA. | As the comment | Rejected –11ax has already decided not to continue to upgrade OMN. Specifically, note that not all the new features in OM are added to OMN in 11ax.In EHT, it also does not make sense to upgrade OMN for new features, which adds yet another mechanism to do the same thing with increased complexity and no added benefits.The only necessary change is to follow 11ax philosophy to update things based on the existing fields. This is the reason why only Rx NSS description is updated.  |

**Discussion: None**

***TGbe editor: Change* 26.9.3 Transmit operating mode (TOM) indication**

 ***as follows (track change on):***

**26.9.3 Transmit operating mode (TOM) indication**

An OMI responder that has transmitted the OM Control UL MU Data Disable RX Support subfield set to 1
shall regard an OMI initiator as capable of participating in UL MU operation except UL Data frame transmission in response to Basic Trigger frame (#11703)if the UL MU Disable subfield is equal to 0 and the UL MU Data Disable subfield is equal to 1 in the most recently received OM Control subfield from that OMI initiator.

***TGbe editor: Delete “Insert the following new subclause after 9.2.4.7.7 (CAS Control)” at the beginning of page 123.***

***TGbe editor: Change 9.2.4.7.8 EHT OM Control as follows (track change on):***

***Insert the following new subclause after 9.2.4.7.7 (CAS Control)(#10205)***

36 **9.2.4.7.8 EHT OM Control**

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1. The Control Information subfield in an EHT OM Control subfield contains information related to the OM
2. changes for bandwidth of 320 MHz, Tx NSTS larger than 8, and Rx NSS larger than 8 for the STA transmit-
3. ting the frame containing this information (see 35.10 (Operating mode indication)). The format of the sub-
4. field is shown in [Figure 9-33a (Control Information subfield format in an EHT OM Control subfield)](#bookmark8).

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45 B0 B1 B2 B3 B5

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| Rx NSSExtension | Channel Width Extension | Tx NSTSExtension | Reserved |

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52 **Figure 9-33a—Control Information subfield format in an EHT OM Control subfield**

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55 If the operating channel width of the STA is greater than 80 MHz, then the Rx NSS Extension subfield in the

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1. EHT OM Control subfield combined with the Rx NSS subfield in the OM Control subfield indicates
2. *NSS* – 1 , where *NSS* is the maximum number of spatial streams that the STA supports in reception for PPDU
3. bandwidths less than or equal to 80 MHz.

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1. If the operating channel width of the STA is less than or equal to 80 MHz, then the Rx NSS Extension sub-
2. field in the EHT OM Control subfield combined with the Rx NSS subfield in the OM Control subfield indi-

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65 cates *NSS* – 1 , where *NSS* is the maximum number of spatial streams that the STA supports in reception.

1. The encoding of the Rx NSS Extension subfield in the(#12243) EHT OM Control subfield combined with the Rx NSS subfield in the(#12243) OM Control subfield is described in [Table 9-33a (The encoding of the Rx NSS Extension sub-field in the(#12243) EHT OM Control subfield combined with the Rx NSS subfield in the(#12243) OM Control subfield)](#bookmark9).

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1. **Table 9-33a—The encoding of the Rx NSS Extension subfield in** the(#12243) **EHT OM Control subfield**
2. **combined with the Rx NSS subfield in** the(#12243) **OM Control subfield**

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| **Rx NSS Extension subfield in** the(#12243) **EHT OM Control subfield** | **Rx NSS subfield****in** the(#12243) **OM Control subfield** | **Indication of the** *NSS* |
| 0 | 0 | 1 |
| 0 | 1 | 2 |
| 0 | 2 | 3 |
| 0 | 3 | 4 |
| 0 | 4 | 5 |
| 0 | 5 | 6 |
| 0 | 6 | 7 |
| 0 | 7 | 8 |
| 1 | 0 | 9 |
| 1 | 1 | 10 |
| 1 | 2 | 11 |
| 1 | 3 | 12 |
| 1 | 4 | 13 |
| 1 | 5 | 14 |
| 1 | 6 | 15 |
| 1 | 7 | 16 |

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42 An EHT STA with dot11EHTBaseLineFeaturesImplementedOnly equal to true does not set Rx NSS Exten-

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44 sion subfield in the(#12243) EHT OM Control subfield to 1.

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46 If the operating channel width of the STA is greater than 80 MHz, then the maximum number of spatial

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1. streams that the STA supports in reception for non-EHT PPDU bandwidths greater than 80 MHz is defined
2. in 26.9 (Operating mode indication).

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1. If the operating channel width of the STA is greater than 80 MHz, then the maximum number of spatial
2. streams that the STA supports in reception for EHT PPDU bandwidths greater than 80 MHz is defined in
3. 35.10 (Operating mode indication).

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1. The Channel Width Extension subfield in the(#12243) EHT OM Control subfield combined with the Channel Width sub-field in the(#12243) OM Control subfield indicates the operating channel width supported by the STA for both reception and transmission.

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1. The encoding of the Channel Width Extension subfield in the(#12243) EHT OM Control subfield combined with the Channel Width subfield in the(#12243) OM Control subfield is described in [Table 9-33b (The encoding of the Channel](#bookmark10) [Width Extension subfield in the(#12243) EHT OM Control subfield combined with the Channel Width subfield in the(#12243) OM](#bookmark10) [Control subfield)](#bookmark10).

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1. **Table 9-33b—The encoding of the Channel Width Extension subfield in** the(#12243) **EHT OM Control**
2. **subfield combined with the Channel Width subfield in** the(#12243) **OM Control subfield**

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| **Channel Width Extension subfield in** the(#12243) **EHT OM Control subfield** | **Channel Width subfield in** the(#12243) **OM Control subfield** | **Indication of the operating channel width** |
| 0 | 0 | Primary 20 MHz |
| 0 | 1 | Primary 40 MHz |
| 0 | 2 | Primary 80 MHz |
| 0 | 3 | Primary 160 MHz |
| 1 | 0 | 320 MHz |
| 1 | 1–3 | Reserved |

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28 The Tx NSTS Extension subfield in the(#12243) EHT OM Control subfield combined with the Tx NSTS subfield in OM

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1. Control subfield indicates *NSTS* – 1 , where *NSTS* is the maximum number of space-time streams that the
2. STA supports in transmission.

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1. The encoding of the Tx NSTS Extension subfield in the(#12243) EHT OM Control subfield combined with the Tx NSTS subfield in the(#12243) OM Control subfield is described in [Table 9-33c (The encoding of the Tx NSTS Extension sub-field in the(#12243) EHT OM Control subfield combined with the Tx NSTS subfield in the(#12243) OM Control subfield)](#bookmark11).

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39 **Table 9-33c—The encoding of the Tx NSTS Extension subfield in** the(#12243) **EHT OM Control subfield**

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41 **combined with the Tx NSTS subfield in** the(#12243) **OM Control subfield**

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| **Tx NSTS Extension subfield in** the(#12243) **EHT OM Control subfield** | **Tx NSTS subfield****in** the(#12243) **OM Control subfield** | **Indication of the** *NSS* |
| 0 | 0 | 1 |
| 0 | 1 | 2 |
| 0 | 2 | 3 |
| 0 | 3 | 4 |
| 0 | 4 | 5 |
| 0 | 5 | 6 |
| 0 | 6 | 7 |
| 0 | 7 | 8 |
| 1 | 0 | 9 |
| 1 | 1 | 10 |
| 1 | 2 | 11 |
| 1 | 3 | 12 |

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1. **Table 9-33c—The encoding of the Tx NSTS Extension subfield in** the(#12243) **EHT OM Control subfield combined with the Tx NSTS subfield in** the(#12243) **OM Control subfield *(continued)***

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| **Tx NSTS Extension subfield in** the(#12243)  **EHT OM Control subfield** | **Tx NSTS subfield****in** the(#12243) **OM Control subfield** | **Indication of the** *NSS* |
| 1 | 4 | 13 |
| 1 | 5 | 14 |
| 1 | 6 | 15 |
| 1 | 7 | 16 |

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16 An EHT STA with dot11EHTBaseLineFeaturesImplementedOnly equal to true does not set Tx NSTS Extension subfield in the(#12243) EHT OM Control subfield to 1.

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1. NOTE—EHT PHY does not support STBC. The terms “space-time stream” and “spatial stream” are’ equivalent in EHT.