IEEE P802.11
Wireless LANs

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| **LB266 CR for 9.3.1.19** |
| **Date:** 2022-08-17 |
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Abstract

This submission proposes CR for 34 CIDs:

* 12048, 12120, 13540, 13541, 13542, 12771, 11683, 10972, 11893, 12436,

12772, 13725, 12773, 13543, 13677, 11994, 11894, 10973, 12250, 11895,

12049, 10792, 10795, 11490, 10793, 10794, 11684, 11685, 13726, 11686,

13544, 10974, 12957, and 13726

All the changes are based on P802.11be D2.1.1.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: some comment during Joint meeting. CID 11683 is deferred because it needs to check
* Rev 2: The resolution of CID 11683 is changed

#### *CID 12048, 12120, 13540, 13541, 13542 and 12771*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 12048 | 9.3.1.19 | 136.45 | At this stage, I think it should be better to rename the subclause "VHT/HE/Ranging/HE NDP Announcement frame format" into "NDP Announcement frame format" | As in comment | RevisedAgree with the commenter. Please see the below resolution.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12120 | 9.3.1.19 | 136.45 | The name is just 'NDP Announcement frame', not 'VHT/HE/Ranging/EHT' NDP Announcement frame' | Delete 'VHT/HE/Ranging/EHT' in the title of subclause 9.3.1.19 | RevisedAgree with the commenter. Please see the below resolution.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13540 | 9.3.1.19 | 136.45 | Remove VHT/HE/Ranging/EHT from the title | As in comment | RevisedAgree with the commenter. Please see the below resolution.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13541 | 9.3.1.20 | 136.45 | Suggest to describe the general part first and then describe different variant (VHT/HE/Ranging/EHT) in different subclause. | As in comment | RevisedAgree with the commenter and please see the below resolution.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13542 | 9.3.1.19 | 137.01 | The description needs to exclude the STA info field with special AID/STAID, like HE NDPA, Ranging NDPA.If there is one STA info field with special AID and one STA info without special AID, then it should be also unicast RA. | As in comment | RevisedAgree with the commenter. The condition is applied to ‘less than 2008’.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12771 | 9.3.1.19 | 138.01 | The bullet "There is more than one STA Info field with a value other than 2047 in the AID11 field" is useless as it is also stated in the beginning of the sentence: "In an HE NDP Announcement frame that has more than one STA Info field with a value other than 2047 in the AID11 field ..." | Please remove the third bullet subpart which seems redundant with the beginning of the sentence. | RevisedAgree with the commenter and delete the sentence***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |

#### *CID 11683, 10972, 11893, 12436, 12772 and 13725*

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 11683 | 9.3.1.19 | 137.38 | In Tale 9-42a, what's the reason to separate B0 and B1 instead of use field values 0-3? In P138L17, it says to set the NDPA Variant subfield to 3 to identify the frame as an EHT NDPA frame. The two expressions are inconsistent. Please unify them to use the field values 0-3. | Please refer to the comment. | RevisedAgree with the commenter and the Table is changed as below based on 11az D5.0***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r2. |
| 10972 | 9.3.1.19 | 138.27 | The last sentence is not necessary, as 2047 is the maximum value for the 11-bit field is 2047. Is the intention to limit the maximum value to 2006, as 2007 cannot be assigned to any EHT STA? | As in comment | RevisedAgree with the commenter and delete the sentence.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 11893 | 9.3.1.19 | 138.26 | Interesting statement: The EHT NDP Announcement frame does not containa STA Info field with the AID11 subfield larger than 2047" Isnt it obvious from the fact that the AID11 can only represent values up to 2047?Also does it mean that other values can be present? Say 2007 or more than 2008? Seems from the table below they can't. What i am trying to suggest is to delete this statement. | As in comment. | RevisedAgree with the commenter and delete the sentence.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12436 | 9.3.1.19 | 139.27 | there is no other values other than the values given in table 9-42b. please remove the sentence " This AID11 value is reserved otherwise" in the last row of Table 9-42b | as in the comment | RevisedAgree with the commenter and delete the sentence.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12772 | 9.3.1.19 | 138.26 | Based on the table 9-42b, I assume that "The EHT NDP Announcement frame does not contain a STA Info field with the AID11 subfield larger than 2007". rather than 2047. Otherwise it will be difficult with 11 bits for AID11 subfield to have value larger than 2047 and we may delete the sentence. | Please correct the maximum value for AID11 in the EHT NDP Announcement case. | RevisedAgree with the commenter and delete the sentence.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13725 | 9.3.1.19 | 25.01 | AID11 subfield only has 11 bits, it is natural that can not indicate a number larger than 2047. | if the intention is to say EHT NDP Announcement frame doesn't contain a STA Info field with AID 11 subfield equals to 2047, then modify "larger than" to "equal to". | RevisedThe page and line number may be wrong. It seems to indicate the text in P138L26 of D2.0.Then agree with the commenter and delete the sentence.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |

#### *CID 12773, 13543 and 13677*

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 12773 | 9.3.1.19 | 138.43 | Please replace Annoucement by Announcement | As in comment | RevisedAgree with the commenter.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13543 | 9.3.1.19 | 138.56 | Suggest to make 2007 as a separate row, as it is reserved for EHT variant. | As in comment | RevisedIt’s clarified in 11-22/1090r4. Please see the document. |
| 13677 | 9.3.1.19 | 139.18 | "STA Info field contains ranging measurement parameters if the NDP Announcement frame is a Ranging variant." - "ranging measurement parameters" that is not an accurate description. | Change "ranging measurement parameters" to "current Tx power end desired RSSI levels" | RevisedP47L3 of 11az D5.0 says ‘The STA Info field with AID11 subfield equal to 2045 is used in the non-TB ranging measurement exchange, 11.21.6.4.4 (Non-TB ranging measurement exchange) to carry the I2R NDP Tx Power and R2I NDP Target RSSI subfields.’ So I modify the text as below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |

#### *CID 11994, 11894, 10973, 12250, 11895, 12049, 10792, 10795, 11490, 10793, 10794, 11684, 11685 and 13726*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 11994 | 9.3.1.19 | 139.54 | B0 in the Partial BW Info subfield seems redundant since the resolution bandwidth for each bit of the Feedback Bitmap subfiled in the Partial BW Info subfield is determined based on the bandwidth of EHT NDPA. Is it still needed for the 20 MHz resolution indication in 320 MHz bandwidth? | Remove the Resolution bit B0 in the Partial BW Info subfield or define a case where the 20 MHz resolution indication is used in 320 MHz NDPA. | RejectedIt's better to keep the format unchanged. And the Resolution bit helps to know the feedback resolution directly. |
| 11894 | 9.3.1.19 | 139.48 | Specify that resolution is 20 MHz is bit is 0 and 40 MHz otherwise. Also calling out resolution bandwidth when defining the Feedback Bitmap is confusing. Maybe define it as RU size or smth like that (since definition in next paragraph mentions 242-tone RUs and 484-tone RUs.) | As in comment. | RevisedThe details are described in the below paragraph. But it needs to clarify more. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10973 | 9.3.1.19 | 139.53 | "set Resolution bit B0 to 0 ..." is not a complete sentence. how about "the Resolution bit B0 is set to 0 ..." | As in comment | RevisedAgree with the commenter.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12250 | 9.3.1.19 | 139.54 | The paragraph is incorrectly formatted and can be shortened. In addition, the initial statement on P139L57 should read "...bit B0 is set to 0..." | Replace "When the bandwidth of the EHT NDP Announcement frame is less than 320 MHz, set the Resolution bit B0 to 0 to indicate a resolution of 20 MHz." with"The Resolution subfield bits are set, according to various bandwidths as follows:-"Add a new initial bullet at P139L56 "When the EHT NDP Announcement frame is less than 320 MHz, bit B0 is set to 0 to indicate a resolution of 20 MHz."In the remaining bulleted items, remove the text "..the bandwidth of..." from the start of each sentence. | RevisedAgree with the commenter and please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 11895 | 9.3.1.19 | 139.48 | This should not be a dependent bullet. It should be its own paragraph as it is indicating the setting of B0 equal to 1. Independentize the rest of these bullets. Also there are some formatting issues and inconsistencies to the instructions to the editor. So please check that all these are fixed (e.g., a table has an underlined addition but the instruction that precedes all these paragrapsh is insert). | As in comment. | RevisedIt may indicate the text in P140L13, not P139L48, I think. Then I agree with the commenter and please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12049 | 9.3.1.19 | 139.54 | "When the bandwidth of the EHT NDP Announcement frame is less than 320 MHz, set the Resolution bit B0 to 0 to indicate a resolution of 20 MHz." should be under a bullet point, like the others "- When ..." | As in comment | RevisedThe sentence describes the resolution for less than 320MHz, and the below 4 bullets explain the details per BW size. But the last bullet is not belong to that. So it bring some confusion. I make the last bullet to another paragraph and make some clarification. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10792 | 9.3.1.19 | 139.60 | The setting of B1 and B2 for 40MHz is missed. | Modify the text as follows " ... equal to 40MHz, B1 and B2 are set to 11 to indicate the request of feedback on each of the two 242-tone Rus..." | RevisedThe last bullet says it, but it’s not belong to the paragraph. So I make some modification. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10795 | 9.3.1.19 | 140.12 | For 320MHz, a resolution of 40MHz is used, and also resolution bit B0 is set to different. So, it is better the define the set of bits for 320MHz by using a separate paragraph. | Modify the text in P140L12 with following"When the bandwidth of the EHT NDP Announcement frame is 320MHz, set the Resolution bit B0 to 1 to indicate a resolution of 40MHz. - When the bandwidth of the PPDU carrying the EHT NDP Announcement frame is equal to 320MHz, If B1 and B2 are both ... " | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 11490 | 9.3.1.19 | 140.12 | the paragraph should not be part of the bulleted list since the paragraph covers 320 MHz, and it should not be included in the list heading under "less than 320 MHz" | as in comment | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10793 | 9.3.1.19 | 139.65 | the above paragraph describes that the resolution bit B0 is set to 0 to indicate a resolution of 20MHz if the BW is less than 320MHz. So this text is overlapped. | Delete the following text in P139L65" set the Resolution bit B0 to 0 to indicate a resolution of 20MHz" | RevisedAgree with the commenter. Please see the clarification below. ***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10794 | 9.3.1.19 | 140.05 | The above paragraph describes that the resolution bit B0 is set to 0 to indicate a resolution of 20MHz if the BW is less than 320MHz. So this text is overlapped. | Delete the following text in P140L5" set the Resolution bit B0 to 0 to indicate a resolution of 20MHz" | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 11684 | 9.3.1.19 | 140.15 | Please unify the expressions of "first 996-tone RU", according to the RU indices definition, i.e., "996-tone RU1" and refer to the definition in Table 36-7. Same comment to "second/third/fourth 996-tone RU". | Please refer to the comment. | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 11685 | 9.3.1.19 | 140.17 | The definition of "first/second/third/fourth 80MHz" is not given. Please clarify and better change them to e.g., "lowest 80MHz frequency subblock in frequency", "second lowest 80MHz frequency subblock in frequency", "third lowest 80MHz frequency subblock in frequency" and "highest 80MHz frequency subblock in frequency". | Please refer to the comment. | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13726 | 9.3.1.19 | 140.12 | the loacation of the first to the forth 80MHz is not clear. | clarify that the first 80MHz is the lowest 80MHz in frequency, and the forth 80MHz is the highest 80MHz in frequency | RevisedAgree with the commenter. Please see the clarification below.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |

#### *CID 11686, 13544, 10974, 12957 and 13726*

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 11686 | 9.3.1.19 | 140.36 | In the title of Table 9-42c, change "BW" to "Bandwidth"? Do not change the "BW" in "Partial BW Info subfield". | Please refer to the comment. | RevisedAgree with the commenter. And change all refered name.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 13544 | 9.3.1.19 | 142.10 | Define larger Ng to further reudce the overhead of BF report | As in comment | RejectedLarger Ng than 16 brings performance degradation. Please search contributions about ‘feedback overhead’, ‘subcarrier grouping’, etc in 11be Mentor or bring the other performance results. |
| 10974 | 9.3.1.19 | 142.60 | With the current text, it sounds that "the RA is a broadcast address" all the time, which is incorrect. If the intention is to describe a condition, please consider changing this to a "if" statement. | As in comment | RevisedAgree with the commenter.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 12957 | 9.3.1.19 | 142.61 | "the RA is a broadcast address" is a condition/qualifier. Not all NDPA frames are broadcast frames. Need to fix the wording. | Change to "In an EHT NDP Announcement frame where the RA is a broadcast address" | RevisedAgree with the commenter. For a consistency with the below paragraph, the following text is recommended.***Instructions to the editor:*** Please make the changes as shown in doc 11-22/1307r1. |
| 10725 | 9.3.1.19 | 143.08 | In an EHT NDP Announcement frame with a single STA Info field, the RA is an individual address and the Nc index subfield is reserved. The Nc index subfield has been there in NDPA since HT/VHT (single user NDPA case), it is weird to make it Reserved. The Nc can be simply superseded in the MIMO Control field by the BFee. We do not have to make it Reserved. | Keep the Nc subfield there | RejectedAn EHT beamformee that receives an EHT NDP Announcement frame soliciting SU feedback as part of an EHT non-TB sounding sequence can select Nc, Ng, and codebook size by itself. So the Nc is reserved. Please refer the text in P518L21~28. |

***Background in P518L21~28:***



***Instructions to the editor: Please make the following changes in subclause 9.3.1.19 of P802.11be D2.1.1.***

***Change the title of the subclause 9.3.1.19 and insert the title of the subclause 9.3.1.19.1 as follows:***

**9.3.1.19 (#12048)(#12120)(#13540)NDP Announcement frame format**

**(#13541)9.3.1.19.1 General description**

***Change the first paragraph as follows:***

The ~~VHT/HE/Ranging~~ NDP Announcement frame has ~~three~~four variants, the VHT NDP Announcement frame, the HE NDP Announcement frame, ~~and~~ the Ranging NDP Announcement frame, and the EHT NDP Announcement frame. The ~~three~~four formats are distinguished by the setting of the NDP Announcement ~~Type~~Variant subfield in the Sounding Dialog Token field.

***Change the fourth and fifth paragraphs as follows:***

The ~~VHT/HE/Ranging~~ NDP Announcement frame contains at least one STA Info field. If the ~~VHT/HE/Ranging~~ NDP Announcement frame contains only one STA Info field (#13542)with a value less than 2008 in the AID11 subfield, then in the case of VHT, ~~or~~ HE or EHT NDP Announcement frames the RA field is set to the address of the STA that can provide feed- back (see 10.37.5.2 (Rules for VHT sounding protocol sequences), 26.7 (HE sounding operation), 35.7 (EHT sounding operation)), while in the case of Ranging NDP Announcement frames, the RA address is set to the address of the RSTA or ISTA that is the intended recipient of the frame. If the ~~VHT/HE/Ranging~~ NDP Announcement frame contains more than one STA Info field (#13542)with a value less than 2008 in the AID11 subfield, then the RA field is set to the broadcast address.

The TA field is set to the address of the STA transmitting the ~~VHT/HE/Ranging~~ NDP Announcement frame or the bandwidth signaling TA of the STA transmitting the ~~VHT/HE/Ranging~~ NDP Announcement frame. In an EHT NDP Announcement frame transmitted by an EHT STA that is a STA 6G with 320 M bandwidth support in a non-HT or non-HT duplicate format and where the scrambling sequence and SERVICE field carry the TXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_HT, the TA field is set to a bandwidth signaling TA. In an ~~VHT/HE/Ranging~~ NDP Announcement frame transmitted by a VHT STA, ~~or~~ an HE STA, an EHT STA that is not a STA 6G or an EHT STA that is a STA 6G without 320 M bandwidth support in a non-HT or non-HT duplicate format and where the scrambling sequence carries the TXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_HT, the TA field is set to a bandwidth signaling TA.

***Change*** [***Figure 9-77 (Sounding Dialog Token field format)***](#bookmark21) ***as follows:***

B0 B1 B2 B7

Sounding Dialog Token Number

NDP Announcement ~~Type~~Variant

Bits: 2 6

**Figure 9-77—Sounding Dialog Token field format**

***Change the seventh paragraph as follows:***

The setting of the NDP Announcement ~~Type~~Variant subfield in the Sounding Dialog Token field identifies the variant of the NDP Announcement frame, refer to [Table 9-42a (NDP Announcement frame variant](#bookmark22) [encoding)](#bookmark22).

**Table 9-42a—NDP Announcement frame variant encoding**

|  |  |
| --- | --- |
| **NDP Announcement ~~Type~~Variant subfield*(#11683)*** | **NDP Announcement frame variant** |
|  |  |
| 0 |  | VHT NDP Announcement frame |
| 1 |  | Ranging NDP Announcement frame |
| 2 |  | HE NDP Announcement frame |
| 3 |  | ~~Reserved~~EHT NDP Announcement frame |

***Insert the title of the subcluase 9.3.1.19.2 before 10th paragraphs as follows:***

**(#13541)9.3.1.19.2 VHT NDP Announcement frame format**

***Insert the title of the subcluase 9.3.1.19.3 before 13th paragraphs as follows:***

**(#13541)9.3.1.19.3 HE NDP Announcement frame format**

***Change the fourth and third last paragraphs as follows:***

In ~~a broadcast~~an HE NDP Announcement frame that has more than one STA Info field with a value other than 2047 in the AID11 field, the RA is a broadcast address and the following applies to each STA Info sub- field with a value other than 2047:

* If the Feedback Type subfield indicates SU or MU, the Nc subfield indicates the number of columns,

*Nc* , in the compressed beamforming feedback matrix and is set to *Nc* – 1

* If the Feedback Type subfield indicates CQI, the Nc subfield indicates the number of space-time streams, *Nc* , in the CQI report and is set to *Nc* – 1
* (#12771)

In an ~~individually addressed~~ HE NDP Announcement frame with a single STA Info field, the RA is an individual address, the AID11 field in the STA Info field has a value other than 2047, and~~the STA Info field~~ ~~having a value in the AID11 field other than 2047,~~ the Nc subfield is reserved.

***Insert the following paragraphs at the end of the subclause:***

**(#13541)9.3.1.19.4 EHT NDP Announcement frame format**

The frame format of the EHT NDP Announcement frame is the same as the HE NDP Announcement frame shown in Figure 9-80 (HE NDP Announcement frame format).

The Duration, RA, and TA fields are set as in a VHT NDP Announcement frame.

The NDP Announcement Variant subfield is set to 3 to identify the frame as an EHT NDP Announcement frame.

The Sounding Dialog Token Number field in the Sounding Dialog Token field contains a value selected by the beamformer to identify the EHT NDP Announcement frame.

The format of a STA Info field in an EHT NDP Announcement frame is defined in [Figure 9-80a (STA Info](#bookmark23) [field format in an EHT NDP Announcement frame)](#bookmark23). (#10972)(#11893)(#12436)(#12772)(#13725)

B0 B10 B11 B19 B20 B21 B24 B25 B26 B27 B28 B29 B31

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AID11 | Partial BW Info | Reserved | Nc Index | Feedback Type And Ng | Disambigu ation | Codebook Size | Reserved |

Bits: 11 9 1 4 2 1 1 3

**Figure 9-80a—STA Info field format in an EHT NDP Announcement frame**

An EHT NDP Announcement frame contains at most one STA Info field per STA.

AID11 subfield encoding in NDP (#12773)Announcement frame is defined in [Table 9-42b (AID11 subfield encoding](#bookmark24) [in an NDP Announcement frame)](#bookmark24).

**Table 9-42b—AID11 subfield encoding in an NDP Announcement frame**

|  |  |  |
| --- | --- | --- |
| **AID subfield** | **Description** | **NDP Announcement frame variant applicability** |
| 0 | STA Info field is addressed to the associated AP or mesh AP or IBSS STA. | Applicable to any variant |
| 1–2007 | STA Info field is addressed to an associated STA whose AID is equal to the value in the AID11 subfield if the NDP Announcement frame is not a Ranging variant.STA Info field is addressed to an unassociated STA or an associated STA whose RSID/AID is equal to the value in the RSID11/AID11 subfield if the NDP Announcement frame is a Ranging variant.The value 2007 is reserved for EHT variant. | Applicable to any variant |

**Table 9-42b—AID11 subfield encoding in an NDP Announcement frame *(contin-***

|  |  |  |
| --- | --- | --- |
| **AID subfield** | **Description** | **NDP Announcement frame variant applicability** |
| 2008–2042 | Reserved | Not applicable to any variant |
| 2043 | STA Info field contains a sequence authentication code if the NDP Announcement frame is a Ranging variant.This AID11 value is reserved otherwise. | Applicable only to ranging variant |
| 2044 | STA Info field contains a partial TSF if the NDP Announcement frame is a Ranging variant.This AID11 value is reserved otherwise. | Applicable only to ranging variant |
| 2045 | STA Info field contains (#13677)the I2R NDP Tx Power and R2I NDP Target RSSI subfields if the NDP Announcement frame is a Ranging variant.This AID11 value is reserved otherwise. | Applicable only to ranging variant |
| 2046 | Reserved | Not applicable to any variant |
| 2047 | STA Info field contains a disallowed subchannel bitmap if the NDP Announcement frame is an HE variant.This AID11 value is reserved otherwise. | Applicable only to HE variant |

The AID11 subfield contains an identifier of a STA expected to process the following EHT sounding NDP and prepare the sounding feedback.

The Partial BW Info subfield is defined in [Figure 9-80b (Partial BW Info subfield format)](#bookmark25).

 B0 B1 B8

Feedback Bitmap

Resolution

Bits: 1 8

**Figure 9-80b—Partial BW Info subfield format**

The Resolution subfield in the Partial BW Info subfield indicates the resolution bandwidth for each bit in the Feedback Bitmap subfield. The Feedback Bitmap subfield indicates the request of each resolution bandwidth from the lowest frequency to the highest frequency with B1 indicating the lowest resolution bandwidth. Each bit in the Feedback Bitmap subfield is set to 1 if the feedback is requested on the corresponding resolution bandwidth.

When the bandwidth of the EHT NDP Announcement frame is less than 320 MHz, (#11894)(#10973)(#12250)the Resolution bit B0 is set to 0 to indicate a resolution of 20 MHz.

* When the bandwidth of the EHT NDP Announcement frame is equal to 20 MHz, B1 is set to 1 to indi- cate the request of feedback on the 242-tone RU. B2–B8 are reserved and set to 0.
* When the bandwidth of the EHT NDP Announcement frame is equal to 40 MHz, B1 and B2 indicate the request of feedback on each of the two 242-tone RUs from lower frequency to higher frequency. B3–B8 are reserved and set to 0.
* When the bandwidth of the PPDU carrying the EHT NDP Announcement frame is equal to 80 MHz, (#10793)if B1–B4 are all set to 1, it indicates the feedback request on the 996-tone RU, otherwise B1–B4 indicate the request of feedback on each of the four 242-tone RUs from lower frequency to higher frequency. B5–B8 are reserved and set to 0.
* When the bandwidth of the PPDU carrying the EHT NDP Announcement frame is equal to 160 MHz, (#10794)if B1–B4 are all set to 1, it indicates the feedback request on the lower 996-tone RU, otherwise B1–B4 indicate the request of feedback on each of four 242-tone RUs from lower frequency to higher frequency in the lower 80 M. If B5–B8 are all set to 1, it indicates the feedback request on the upper 996-tone RU, otherwise B5–B8 indicate the request of feedback on each of the four 242-tone RUs from lower frequency to higher frequency in the upper 80 MHz.

(#11894)(#11895)(#12049)(#10792)(#10795)(#11490)When the bandwidth of the PPDU carrying the EHT NDP Announcement frame is equal to 320 MHz, set the Resolution bit B0 to 1 to indicate a resolution of 40 MHz. If B1 and B2 are both set to 1, it indi- cates the feedback request on the (#11684)lowest 996-tone RU, otherwise B1 and B2 indicate the request of feedback on each of the two 484-tone RUs from lower frequency to higher frequency in the (#11685)(#13726)lowest 80 MHz. If B3 and B4 are both set to 1, it indicates the feedback request on the second lowest 996-tone RU, otherwise B3 and B4 indicate the request of feedback on each of the two 484-tone RUs from lower frequency to higher frequency in the second lowest 80 MHz. If B5 and B6 are both set to 1, it indicates the feedback request on the third lowest 996-tone RU, otherwise B5 and B6 indicate the request of feedback on each of the two 484-tone RUs from lower frequency to higher frequency in the third lowest 80 MHz. If B7 and B8 are both set to 1, it indicates the feedback request on the highest 996-tone RU, otherwise B7 and B8 indicate the request of feedback on each of the two 484-tone RUs from lower frequency to higher frequency in the highest 80 MHz. The feedback tone sets for each 484-tone RU is composed of the feed- back tone sets of the two 242-tone RUs overlapping with the 484-tone RU.

The Partial BW Info subfield is defined in [Table 9-42c (Settings for BW, Partial BW Info subfield in the](#bookmark26) [EHT NDP Announcement frame)](#bookmark26). Any values of the Partial BW Info subfield other than the ones defined in [Table 9-42c (Settings for BW, Partial BW Info subfield in the EHT NDP Announcement frame)](#bookmark26) are reserved.

**Table 9-42c—Settings for (#11686)Bandwidth, Partial BW Info subfield in the EHT NDP Announcement frame**

|  |  |  |  |
| --- | --- | --- | --- |
| **Feedback RU or MRU size** | **Bandwidth of the EHT NDP Announcement frame (MHz)** | **Partial BW Info subfield values in binary format (B0 B1 B2 B3 B4 B5 B6 B7 B8)** | **Operating channel width of the EHT beamformee (MHz)** |
| 242 | 20 | 010000000 | 20, 40, 80, 160, 320 |
| 40 | 010000000, 001000000 |
| 80 | 010000000, 001000000, 000100000, 000010000 | 20, 80, 160, 320 |
| 160 | 010000000, 001000000, 000100000, 000010000,000001000, 000000100, 000000010, 000000001 |

**Table 9-42c—Settings for BW, Partial BW Info subfield in the EHT NDP Announcement frame *(continued)***

|  |  |  |  |
| --- | --- | --- | --- |
| **Feedback RU or MRU size** | **Bandwidth of the EHT NDP Announcement frame (MHz)** | **Partial BW Info subfield values in binary format (B0 B1 B2 B3 B4 B5 B6 B7 B8)** | **Operating channel width of the EHT beamformee (MHz)** |
| 484 | 40 | 011000000 | 40, 80, 160, 320 |
| 80 | 011000000, 000110000 | 80, 160, 320 |
| 160 | 011000000, 000110000, 000001100, 000000011 |
| 320 | 110000000, 101000000, 100100000, 100010000,100001000, 100000100, 100000010, 100000001 |
| 484+242 | 80 | 011100000, 011010000, 010110000, 001110000 |
| 160 | 011100000, 011010000, 010110000, 001110000,000001110, 000001101, 000001011, 000000111 |
| 996 | 80 | 011110000 |
| 160 | 011110000, 000001111 |
| 320 | 111000000, 100110000, 100001100, 100000011 |
| 996+484 | 160 | 011111100, 011110011, 011001111, 000111111 | 160, 320 |
| 320 | 111100000, 111010000, 110110000, 101110000,100001110, 100001101, 100001011, 100000111 |
| 996+484+242 | 160 | 011101111, 011011111, 010111111, 001111111,011111110, 011111101, 011111011, 011110111 |
| 2996 | 160 | 011111111 |
| 320 | 111110000, 100001111 |
| 2996+484 | 320 | 111111000, 111110100, 111101100, 111011100,110111100, 101111100, 100111110, 100111101,100111011, 100110111, 100101111, 100011111 | 320 |
| 3996 | 320 | 111111100, 111110011, 111001111, 100111111 |
| 3996+484 | 320 | 111111110, 111111101, 111111011, 111110111,111101111, 111011111, 110111111, 101111111 |
| 4996 | 320 | 111111111 |

The Feedback Type And Ng and Codebook Size subfields for EHT TB sounding are defined in [Table 9-44](#bookmark27) [(Feedback Type And Ng subfield and Codebook Size subfield encoding for HE and EHT TB sounding)](#bookmark27).

**Table 9-44—Feedback Type And Ng subfield and Codebook Size subfield encoding for HE and EHT TB sounding**

|  |  |  |
| --- | --- | --- |
| **Feedback Type And Ng** | **Codebook Size** | **Description** |
| **B25** | **B26** | **B28** |
| 0 | 0 | 0 | SU, *Ng* = 4, quantization resolution (   ) = {4, 2} |
| 0 | 0 | 1 | SU, *Ng* = 4, quantization resolution (   ) = {6, 4} |
| 0 | 1 | 0 | SU, *Ng* = 16, quantization resolution (   ) = {4, 2} |
| 0 | 1 | 1 | SU, *Ng* = 16, quantization resolution (   ) = {6, 4} |
| 1 | 0 | 0 | MU, *Ng* = 4, quantization resolution (   ) = {7, 5} |
| 1 | 0 | 1 | MU, *Ng* = 4, quantization resolution (   ) = {9, 7} |
| 1 | 1 | 0 | CQI |
| 1 | 1 | 1 | MU, *Ng* = 16, quantization resolution (   ) = {9, 7} |

The Feedback Type And Ng and Codebook Size subfields for EHT non-TB sounding are defined in [Table 9-45 (Feedback Type And Ng subfield and Codebook Size subfield encoding for HE and EHT non-TB](#bookmark28) [sounding)](#bookmark28).

**Table 9-45—Feedback Type And Ng subfield and Codebook Size subfield encoding for HE and EHT non-TB sounding**

|  |  |  |
| --- | --- | --- |
| **Feedback Type And Ng** | **Codebook Size** | **Description** |
| **B25** | **B26** | **B28** |
| 0 | Reserved | Reserved | SU |
| 1 | 1 | 0 | CQI |

The Disambiguation subfield is set to 1.

NOTE—Setting the Disambiguation subfield to 1 prevents a non-EHT VHT STA from incorrectly identifying its AID in the EHT NDP Announcement frame. The Disambiguation subfield coincides with the MSB of the AID12 subfield of a VHT NDP Announcement frame if the EHT NDP Announcement field is parsed as VHT NDP Announcement frame by a non-EHT VHT STA. The MSB of the AID12 subfield is always 0 since the maximum AID is 2007.

In an EHT NDP Announcement frame (#10974)(#12957)with more than one STA Info field which contains a value less than 2008 in the AID11 subfield, the RA is a broadcast address and the following applies:

* If the Feedback Type And Ng subfield and the Codebook Size subfield indicate SU or MU, the Nc Index subfield indicates the number of columns in the compressed beamforming feedback matrix minus 1, *Nc* – 1 . Nc Index subfield values above 7 are reserved.
* If the Feedback Type And Ng subfield and the Codebook Size subfield indicate CQI, the Nc Index subfield indicates the number of spatial streams in the CQI report minus 1, *Nc* – 1 . Nc Index subfield values above 7 are reserved.

In an EHT NDP Announcement frame with a single STA Info field (#10974)(#12957)which contains a value less than 2008 in the AID subfield, the RA is an individual address and the Nc index subfield is reserved.