IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | D3.0 Miscellaneous CR | | | | | | Date: 2020-07-15 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Youhan Kim | Qualcomm |  |  | youhank@qti.qualcomm.com | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

This submission proposes resolutions for the following comments from the SA ballot on P802.11-REVmd D3.0:

4569, 4710

NOTE – Set the Track Changes Viewing Option in the MS Word to “All Markup” to clearly see the proposed text edits.

**Revision History:**

R0: Initial version.

R1: Removed “The value of the COLOR field of the S1G Capabilities Information field of the S1G Capabilities element is within the range of 0 to 7.” from resolution to CID 4710 per offline feedback. Already specified in Clause 9.

R2: Based on offline feedback, updated resolution to CID 4710 to solely focus on fixing the terminology “NDP frame”, and do not attempt to (inadvertently) change anything on the NDP feature

# CID 4569

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| **CID** | **Clause** | **Page.Line** | **Comment** | **Proposed Change** |
| 4569 |  |  | The concept of a "normal control" has sprouted but is not well-defined | Change "Link Adaptation Per Normal Control Response Capable" to "Link Adaptation Without NDP CMAC PPDU Capable" throughout (5x) |

**Discussion**

D3.3 has 5 instances of “normal control”, and all of them are as part of “Link Adaptation Per Normal Control Response Capable”. Furthermore, there is no definition of “normal control”.

At D3.3 P1412, the meaning of “Link Adaptation Per Normal Control Response Capable” is written as

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Hence, the commenter’s proposal to change to “Link Adaptation Without NDP CMA PPDU Capable” seems reasonable.

**Proposed Resolution: CID 4569**

**Accepted**

# CID 4710

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| **CID** | **Clause** | **Page.Line** | **Comment** | **Proposed Change** |
| 4710 |  |  | There are various references to "NDP frames" and "non-NDP frames". The first is a misnomer because NDPs are NDPs not frames; the second is pleonastic since all frames (MPDUs) are not NDPs | This appears to be some 11ah horror, so change all instances of "non-NDP frame" to "non-NDP-CMAC frame", all instances of "sounding NDP frame" to "sounding NDP", and all remainng instances of "NDP frame" to "NDP CMAC frame". Dieu reconnaitra les siens |

**Discussion**

D3.3 has 35 instances of “NDP frame”. 34 of them are related to S1G, while one is related to CMMG (D3.3 P1810L53).

Addressing the CMMG one first,

D3.3 P1810

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This should be changed to “NDP”, not “NDP CMAC frame” as suggested by the commenter.

The commenter also proposes to change “non-NDP frame” to “non-NDP-CMAC frame”. Note that “NDP CMAC PPDU” is defined as “NDP carrying MAC information PPDU” (D3.3 P191L60). Hence, “non-NDP-CMAC frame” becomes “non-NDP carrying MAC information PPDU”, whose meaning is not clear and thus not appropriate.

Changing “sounding NDP frame” to “sounding NDP” seems reasonable.

Discussion added in R2:

Mark Rison and Yujin Noh has provided offline feedback on the resolutions, which are copied below for reference. The reviewer agrees that there are a lot of ambiguities in S1G. Unfortunately, the reviewer is not well versed in S1G, and have reached out to several members who may have better knowledge on S1G, but have not been able to get more clarity.

Note that the comment is on the fact that “NDP frame” is not an appropriate terminology as at least the sounding NDP does not carry a ‘frame’. Hence, the proposed resolution in this document focus solely on fixing the terminology “NDP frame” and does not attempt to (inadvertently) touch anything regarding the NDP feature itself.

From Mark Rison:

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| - I think  The value of the COLOR field of the S1G Capabilities Information field of the S1G Capabilities element is within the range of 0 to 7.  should just be deleted.  It's nothing more than duplication of Clause 9,  since that field is a 3-bit field.  In fact Clause 9 explicitly gives  the range:    - Table 23-1 says that PARTIAL\_AID is present if:  FORMAT is  (S1G and (CH\_BANDWIDTH is CBW2 or CBW4 or CBW8 or CBW16) and MU\_SU is SU)  or S1G\_DUP\_2M  where FORMAT is one of S1G, S1G\_DUP\_1M and S1G\_DUP\_2M,  where S1G means "S1G PPDU" and the others are 1/2 MHz duplicate formats, obviously.  I think S1G format can be (but doesn't have to be) a 1 MHz format.  [Actually, the syntax is broken.  I think it needs to be something like:  (FORMAT is S1G and CH\_BANDWIDTH is (CBW2 or CBW4 or CBW8 or CBW16) and MU\_SU is SU)  or FORMAT is S1G\_DUP\_2M  ]  So Table 10-14—Settings for the TXVECTOR parameter PARTIAL\_AID for an NDP frame  is maybe OK (see below), but I'm not sure about changing  Table 10-15—Settings for the TXVECTOR parameter PARTIAL\_AID for non-1 MHz PPDUs and non-NDP frames  to  Table 10-15—Settings for the TXVECTOR parameter PARTIAL\_AID for a non-1 MHz PPDU that is not an NDP  This was ambiguous (was it "(non-1M and non-NDP) PPDUs" or was it  "(non-1M PPDs) and (non-NDP PPDUs)"?) but Table 23-1 is saying we need  the information for any non-dup that is >1M and is SU, and for 2M dup.  So isn't Table 10-15 more something like  Settings for the TXVECTOR parameter PARTIAL\_AID for a non-1 MHz SU S1G non-duplicate PPDU and for an S1G 2 MHz duplicate PPDU, and that is not an NDP  ?  I'm also not sure Table 10-14 is compatible with Table 23-1, in that it's not clear  to me that every NDP is necessarily of a kind that has a PARTIAL\_AID. |

From Yujin Noh (note that her comments are on 1071r0):

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| Based on the Mark’s comment and resolution from Youhan, there is another interpretation in the spec…  Taking a look at the 23.3.11 as below.  An NDP is used for “sounding” or “NDP CMAC PPDUs” in terms of “no data portion in the PPDU”..    I’m not sure about Youhan’s classification especially for Table -14 “non-1 MHz NDP”.  With 23.3.12.2 NDP CMAC PPDU details, it shows each the partial AID of the receiving non-AP STA from **NDP\_1M** and NDP\_2M.  So it seems reasonable to keep it as “Settings for the TXVECTOR parameter PARTIAL\_AID for an NDP frame” so far.  Then it conflicts with the description on TXVECTOR parameter PARTIAL\_AID…  Considering the contents in S1G SIG field…. look at this…   * Short preamble in Table 23-11   + ID field   + BW indicating 2/4/8/16 MHz * Long preamble in SU in Table 23-13   + ID field   + BW indicating  2/4/8/16 MHz * 1M preamble   + No ID, No BW field   No ID field in 1M preamble…. Then now make sense about the definition of PARTIAL\_AID.  Turing to youhan’s resolution document below, the original text with “non-NDP frame”    I found the matched description on SCRAMBER\_OR CRC parameter as below. NDP\_INDICATION setting to 0 mean non NDP CMAC PPDU (e.g. NDP for sounding or PPDU with data portion)    Then….  “Table 10-14—Settings for the TXVECTOR parameter PARTIAL\_AID for an NDP frame”  it seems NDP CMAC frame with 1M PPDU(S1G 1M) and 2M PPDU(S1G short)  “Table 10-15—Settings for the TXVECTOR parameter PARTIAL\_AID for non-1 MHz PPDUs and non-NDP frames”   non-1MHz PPDU that is non CMAC PPDU. Anyway… only case to have partial AID in SIG field of  S1G\_1M preamble is when it is the NDP CMAC PPDU. |

From Mark Rison:

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| I must say I am getting super-confused about the multiple dimensions  here, and which combinations are possible:  1) Type: sounding NDP v. NDP CMAC PPDU v. normal PPDU  2) Format: S1G v S1G\_DUP\_1M v S1G\_DUP\_2M  3) Preamble: S1G\_1M v S1G\_SHORT v S1G\_LONG  4) CH\_BANDWIDTH: CBW1 to CBW16 in powers of 2  So for example here Table 23-1 suggests the presence of a partial AID  is dependent on format and bandwidth, but not directly on type or preamble.  But as I think Yujin is pointing out, it seems there's no partial AID  in the S1G\_1M preamble either, per Figure 23-16—Structure of the 6 symbol SIG field of S1G\_1M PPDU.  So is Table 23-1 in error (incomplete)? |

**Proposed Resolution: CID 4710**

**Revised**.

Note to Commenter:

Instruction to Editor below changes the terms “NDP frame” and “non-NDP frame” to appropriate terms. Note that “non-NDP-CMAC frame” does not seem reasonable as it means “non-NDP carrying MAC information PPDU” whose meaning is not clear. Furthermore, there is one instance of “NDP frame” which is used by CMMG for which “NDP CMAC PPDU” is not relevant.

Instruction to Editor:

Implement the proposed text updates for CID 4710 in <https://mentor.ieee.org/802.11/dcn/20/11-20-1071-03-000m-d3-0-miscellaneous-cr.docx>

**Proposed Text Updates: CID 4710**

***CMMG Related:***

*Instruction to Editor: Update D3.3 P1810L53 as shown below:*

A STA transmitting a CMMG PPDU that is not an NDP and that is sent by a DLS or TDLS STA in a direct path to a DLS or TDLS peer STA shall set the TXVECTOR parameter COLOR to the value of the COLOR parameter, if present, from the RXVECTOR of the most recently received frame from its associated AP or from the DO of the IBSS of which it is a member that contained a COLOR parameter.

***S1G Related:***

*Instruction to Editor: Update D3.3 P235L7 as shown below:*

— Optional support for beamforming sounding (by sending an S1G NDP)

*Instruction to Editor: Update D3.3 P773L1 as shown below:*

— When transmitting a PPDU that is not an NDP CMAC PPDU, the value of the SCRAMBLER\_OR\_CRC parameter is the Scrambler Initialization value in the Service field after scrambling (i.e., [B0:B6] of the Service field]) (as defined in 23.3.9.2 (SERVICE field)) of the frame.

*Instruction to Editor: Update D3.3 P1416L57 as shown below:*

A 1 in a bit position in the bitmap means that the AP transmits one more PIFS-separated sounding NDPs.

*Instruction to Editor: Update D3.3 P1417L7 as shown below:*

The Sounding Start Time subfield contains a value that defines a start time when the AP transmits one or more sounding NDPs on the channel(s) indicated in the corresponding Channel Activity Bitmap subfield. If the Sounding Start Time subfield is not present, the AP transmits one or more PIFS-separated sounding NDPs starting after the transmission of the Beacon frame containing the SST element. If the Sounding Start Time subfield is present, the AP transmits one or more PIFS-separated sounding NDPs starting at the time indicated in the Sounding Start Time field.

*Instruction to Editor: Update D3.3 P1813L45 as shown below:*

**Table 10-14—Settings for the TXVECTOR parameter PARTIAL\_AID for an NDP**

*Instruction to Editor: Update D3.3 P1814L2 as shown below:*

**Table 10-** **15—Settings for the TXVECTOR parameter PARTIAL\_AID for non-1 MHz PPDUs and non-NDPs**

*Instruction to Editor: Update D3.3 P1814L53 as shown below:*

In an NDP sent by the non-AP S1G STA to the S1G AP, the PARTIAL\_AID is equal to 165. In an NDP sent by the S1G AP to the non-AP S1G STA associated with that S1G AP, the PARTIAL\_AID is equal to 229. In a non-1 MHz S1G PPDU that is not an NDP and that is sent by the non-AP S1G STA to the S1G AP, the PARTIAL\_AID is set to 165. In a non-1 MHz S1G PPDU that is not an NDP that is sent by the S1G AP to the non-AP S1G STA associated with that S1G AP, the PARTIAL\_AID is set to 37.

*Instruction to Editor: Update D3.3 P1815L4 as shown below:*

A STA transmitting a non-1 MHz S1G PPDU that is not an NDP and that is addressed to an AP shall set the TXVECTOR parameter UPLINK\_INDICATION to 1. The UPLINK\_INDICATION parameter shall be set to 0 for all other cases. The TXVECTOR parameter UPLINK\_INDICATION is not present for 1 MHz PPDUs or NDPs.

*Instruction to Editor: Update D3.3 P1815L16 as shown below:*

A STA transmitting a non-1 MHz S1G PPDU that is not an NDP and that is addressed to an AP need not include the TXVECTOR parameter COLOR in the TXVECTOR. A STA transmitting a non-1 MHz S1G PPDU that is not an NDP and that is sent by a TDLS STA in a direct path to a TDLS peer STA shall set the TXVECTOR parameter COLOR to the value of the COLOR parameter, if present, from the RXVECTOR of the most recently received frame from its associated AP or from the STA transmitting a beacon of the IBSS of which it is a member that contained a COLOR parameter. An AP transmitting a non-1 MHz S1G PPDU that is not an NDP shall set the TXVECTOR parameter COLOR to a value of its choosing within the range 0 to 7 and shall maintain that value for the duration of the existence of the BSS.

*Instruction to Editor: Update D3.3 P1815L31 as shown below:*

When an S1G AP transmits a non-1 MHz S1G PPDU that is not an NDP, the AP shall set the TXVECTOR parameter COLOR to the value of the COLOR field of the S1G Capabilities Information field of the S1G Capabilities element transmitted by the AP.

*Instruction to Editor: Update D3.3 P2090L14 as shown below:*

**10.50.2 Rules for BDT**

Throughout this subclause, an S1G STA signals a Response Indication of Long Response by setting the TXVECTOR parameter RESPONSE\_INDICATION to Long Response fornon-NDPs and by setting the Idle Indication field to 1 and the Duration field to 0 for NDP (PS-Poll-)Ack frames. The S1G STA signals a Response Indication of No Response by setting the TXVECTOR parameter RESPONSE\_INDICATION to No Response for non-NDPs or by setting the Idle Indication field to 0 and the Duration field to 0 for NDP (PS-Poll-)Ack frames. The S1G STA signals a Response Indication of Normal Response by setting the TXVECTOR parameter RESPONSE\_INDICATION to Normal Response for non-NDPs.

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