IEEE P802.11  
Wireless LANs

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| LB 205 Clause 3 comment resolution | | | | |
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Abstract

This submission proposes comment resolutions of Clause 3 comments from TGah Draft 3.0.

* CIDs: 5026, 5027, 5028, 5029, 5030, 5031, 5050, 5051, 5052, 5053, 5092, 5105, 5129, 5160, 5234, 5235, 5236, 5237, 5439, 5475, 5476, 5477, 5478 (23 CIDs)

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

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

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

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 5026 | 5.31 | 3.2 | "small payload" -- small is a very subjective measure used to classify a STA as a sensor. | replace "small payloads" with "payloads of less than X bytes in size" | Revised-  Agree in principle.  Small payload is a very subjective measure.  But, regarding the proposed change, it is diffult to fine X bytes for characterizing the sensor station. |
| 5027 | 7.05 | 3.2 | definition of "secondary 1 MHz channel" -- The definition is complicated to read and could be rephased to make the sentences shorter. | Replace entire definiton with "secondary 1 MHz channel: The 1 MHz channel adjacent to the primary 1 MHz channel. In a 2 MHz sub 1 GHz (S1G) basic service set (BSS), primary and secondary 1 MHz channel together form the 2 MHz channel of the 2 MHz S1G BSS. In a 4 MHz, 8 MHz, and 16 MHz S1G BSS, primary and secondary 1 MHz channel together form the primary 2 MHz channel of the S1G BSS." | Rejected-  Current definition of the secondary 1 MHz channel is following the same wording structure with the secondary 20 MHz defined in IEEE 802.11 REVmc.  “secondary 20 MHz channel: In a 40 MHz very high throughput (VHT) basic service set (BSS), the 20 MHz channel adjacent to the primary 20 MHz channel that together form the 40 MHz channel of the 40 MHz VHT BSS. In an 80 MHz VHT BSS, the 20 MHz channel adjacent to the primary 20 MHz channel that together form the primary 40 MHz channel of the 80 MHz VHT BSS. In a 160 MHz or 80+80 MHz VHT BSS, the 20 MHz channel adjacent to the primary 20 MHz channel that together form the primary 40 MHz channel of the 160 MHz or 80+80 MHz VHT BSS. In a VHT BSS, the secondary 20 MHz channel is also the secondary channel.”  Please submit the comment to IEEE 802.11mc. If our base draft (IEEE 802.11 REVmc D3.0) will be changed based on the comment, TGah will also update current definitions. |
| 5028 | 7.14 | 3.2 | definition of "secondary 2 MHz channel" -- The definition is complicated to read and could be rephased to make the sentences shorter. | Replace entire definiton with "secondary 2 MHz channel: The 2 MHz channel adjacent to the primary 2 MHz channel. In a 4 MHz sub 1 GHz (S1G) basic service set (BSS), primary and secondary 2 MHz channel together form the 4 MHz channel of the 4 MHz S1G BSS. In a 8 MHz, and 16 MHz S1G BSS, primary and secondary 2 MHz channel together form the primary 4 MHz channel of the S1G BSS." | Rejected-  Current definition of the secondary 2 MHz channel is following the same wording structure with the secondary 20 MHz defined in IEEE 802.11 REVmc.  Please submit the comment to IEEE 802.11mc. If our base draft (IEEE 802.11 REVmc D3.0) will be changed based on the comment, TGah will also update current definitions. |
| 5029 | 7.22 | 3.2 | definition of "secondary 4 MHz channel" -- The definition is complicated to read and could be rephased to make the sentences shorter. | Replace entire definiton with "secondary 4 MHz channel: The 4 MHz channel adjacent to the primary 4 MHz channel. In a 8 MHz sub 1 GHz (S1G) basic service set (BSS), primary and secondary 4 MHz channel together form the 8 MHz channel of the 8 MHz S1G BSS. In a 16 MHz S1G BSS, primary and secondary 4 MHz channel together form the primary 8 MHz channel of the S1G BSS." | Rejected-  Current definition of the secondary 4 MHz channel is following the same wording structure with the secondary 20 MHz defined in IEEE 802.11 REVmc.  Please submit the comment to IEEE 802.11mc. If our base draft (IEEE 802.11 REVmc D3.0) will be changed based on the comment, TGah will also update current definitions. |
| 5030 | 7.28 | 3.2 | definition of "secondary 8 MHz channel" -- The definition is complicated to read and could be rephased to make the sentences shorter. | Replace entire definiton with "secondary 8 MHz channel: The 8 MHz channel adjacent to the primary 8 MHz channel. In a 16 MHz sub 1 GHz (S1G) basic service set (BSS), primary and secondary 8 MHz channel together form the 16 MHz channel of the 16 MHz S1G BSS. " | Rejected-  Current definition of the secondary 8 MHz channel is following the same wording structure with the secondary 20 MHz defined in IEEE 802.11 REVmc.  Please submit the comment to IEEE 802.11mc. If our base draft (IEEE 802.11 REVmc D3.0) will be changed based on the comment, TGah will also update current definitions. |
| 5031 | 8.20 | 3.3 | "(short) beacon interval" -- The suggested change does neither define an abbreviation nor a usefull acronym. It seems that the purpose of the inserted text is to overcome two different "language styles" used in the document. Either of the two wording are interchangeable and TGah should decide on one use and then do a global search and replace to streamline the text. | Delete "(short) beacon interval short beacon interval or beacon interval" | Accepted-  Agree in principle. |
| 5050 | 8.29 | 3.3 | "NDP\_1M" -- abbreviations and acronyms should always be used as if the acronym was spelled out. The usage of "NDP\_1M" is inconsistent throughout the document. The abbreviation stands for a "specific frame" (object) "NDP CMAC frame that is ..." but NDP\_1M is no consistently used in that way but, e.g. as an adjective later on ("NDP\_1M frame"). Searching the document results in NDP\_1M mostly being used as an adjective in combination with "frame". The easiest was would be to add a defintion for "NDP\_1M frame" in the definition section. Defining an abbrevihation of repeating parts of a sentence is a rather bad habit anyway and causes logical errors to be introduced in the standard.    Note: same applex to NDP\_2M. Conduct a global search for NDP\_1M and NDP\_2M to find all sections that are effected. | Delete abbreviation "NDP\_1MNDP CMAC frame that is transmitted using the S1G\_1M format" and "NDP\_1M" and add definitions for "NDP\_1M frame" and "NDP\_2M frame | Revised-  Agree in principle.  NDP\_1M and NDP\_2M should be moved to a definition section as suggested by the commenter.  TGah editor to make changes shown in 11-14-1593r0 under the heading for CID 5050. |
| 5051 | 8.31 | 3.3 | "NDP (PS-Poll-)Ack" -- the abbreviation add a new syntax just to avoid a bit longer sentence while not making it easier to read to document. In short, it just saves some ink on the paper. Avoid such abbrevihations which do not essentially add towards the readability of the doument. | Delete the abbreviahation "NDP (PS-Poll-)Ack".    Globally replace "NDP (PS-Poll-)Ack" with "NDP Ack or NDP PS-Poll-Ack" | Revised-  Agree in principle.  Because NDP (PS-Poll-)ACK represents an abbreviation for the new syntax, clause 8.2.2 (Conventions) is more appropriate for adding the description.  TGah editor to make changes shown in 11-14-1593r0 under the heading for CID 5051. |
| 5052 | 8.36 | 3.3 | PS-Poll(+BDT) -- the abbreviation add a new syntax just to avoid a bit longer sentence while not making it easier to read to document. In short, it just saves some ink on the paper. Avoid such abbrevihations which do not essentially add towards the readability of the doument. | Delete abbrevihation "PS-Poll(+BDT)"    Globally replace "PS-Poll(+BDT)" with "PS-Poll or PS-Poll+BDT" | Revised-  Agree in principle.  Because PS-Poll(+BDT) represents an abbreviation for the new syntax, clause 8.2.2 (Conventions) is more appropriate for adding the description.  TGah editor to make changes shown in 11-14-1593r0 under the heading for CID 5052. |
| 5053 | 8.54 | 3.3 | T(S)BTT -- the abbreviation add a new syntax just to avoid a bit longer sentence while not making it easier to read to document. In short, it just saves some ink on the paper. Avoid such abbrevihations which do not essentially add towards the readability of the doument. | Delete abbrevihation of "TB(S)TT".    Globally replace "TB(S)TT" with "TBTT or TBSTT" | Accepted-  Agree in principle. |
| 5092 | 8.54 | 3.3 | There is a circular definition of TBTT, so that TBTT is not actually defined anywhere | Define TBTT as "Target Beacon Tranmission Time". Remove the definition for T(S)BTT. | Rejected-  TBTT is defined in IEEE 802.11 REVmc D3.0. |
| 5105 | 5.10 | 3.2 | the definition seems to imply that a VHT STA needs to respond with an (NDP) ACK if necessary. Is this really the intention? | remove the underlined text "and for which the response.....) and include the types of the response in the appropriate clause. No need to have the kind of the response in the definition. | Revised-  Agree in principle.  The current wording can make some confusion. It is better to move the corresponding wording to 8.2.4.5.4(Ack Policy subfield).  TGah editor to make changes shown in 11-14-1593r0 under the heading for CID 5105. |
| 5129 | 5.15 | 3.2 | VHT single MPDU can aggregate VHT or S1G S1G PPDU. The term of "VHT single MPDU" may cause some confusion on the aggregation of PPDU for narrow BW, low throughput transmission on S1G. | change "VHT single MPDU" to "VHT/S1G single MPDU" | Need more discussion  The resolution will be included in the next revised document. |
| 5160 | 6.32 | 3.2 | Change "a Clause 24 8 MHz" to "a Clause 24 16 MHz" | As in comment | Accepted-  Agree in principle. |
| 5234 | 5.09 | 3.2 | The "VHT single MPDU" is now carried not only in a VHT PPDU but also in an S1G PPDU which makes the use of this terminology by an S1G STA very confusing. | Replace the definition "very high throughput (VHT) single medium access control (MAC) protocol data unit (VHT single MPDU)" with "single medium access control (MAC) protocol data unit (S-MPDU)". Replace "VHT single MPDU" with "S-MPDU" throughout the draft. Instruct the editor to do the same through REVmc D3.0. | Need more discussion  The resolution will be included in the next revised document. |
| 5235 | 5.16 | 3.2 | I think it is time to order the definitions in alphabetical order. Also fix the reference to Clause 24 throughout this subclause. | Order the inserted definitions in alphabetical order. And replace "Clause 24" with a live pointer to "Clause 24 (Sub 1 GHz (S1G) PHY specification". | Accepted-  Agree in principle. |
| 5236 | 5.55 | 3.2 | Insert "(S1G)" immediately after "sub 1 GHz" in P6L55, P6L59. | As in comment. | Accepted-  Agree in principle. |
| 5237 | 7.31 | 3.2 | The following definitions S1G\_1M, S1G\_SHORT, S1G\_LONG are used throughout the draft but not always and not consistently. It would be best to be used always to avoid confusion. But first of all does the S1G\_SHORT, S1G\_LONG include the S1G\_DUP\_2M case? From 24.1.4 it seems it does so we need to keep consistency here and throughout as well. Another issue is that these definitions are used for both the PPDU format and at times the PPDU preamble as well. | I guess the suggested change would be the following:  - Use these definitions consistently throughout the draft whenever appropriate (it makes sense for the format of the PPDU and also for the preamble case but needs to be clearer when referring to one and when to the other case)  - Look for short/long preamble and use these definitions thoughout the draft. | Need more discussion  The resolution will be included in the next revised document. |
| 5439 | 5.31 | 3.2 | The definition "sensor station (STA): A sensor STA is a non-AP STA using data frames with small payload size. A sensor STA is also expected to have limited available power and low traffic volume." includes every 802.11 station (since all use, at one time or another, small payload data frames). Even if a requirement of ONLY small payload data frames is added, the definiton still includes every 802.11-capable cellphone that doesn't support big data (supports only voice and text). Either speify the critical 802.11 functional aspects of this definition or delete it:  -- Does the sensor station need to include a sensor (else why call it a \_sensor\_ station?), and, if so, what is a "sensor" in terms of 802.11 functions?  -- What size is a "small" payload? Do all tweets and voice frames qualify?  -- Since all non-AP 802.11 STAs at times use "data frames with samll payload size", then according to the definiton given here all 802.11 non-AP STAs formally qualify as "sensor STAs". If the criterion should be that the ONLY data frames supported by a sensor STA are below a certain specified size (1KB?), then that criterion needs to be explicitly stated in the definition.  -- What definition clearly distinguishes the sensor station from other non-AP stations? What specific functions in a non-AP 802.11 station make it a "non-sensor station"?  -- Also "is expected to have" is a marketing approximation that does not belong in an IEEE technical standard. | Since this definition provides no clear distinction from "non-AP station", delete this definition and all uses of "sensor station" and "sensor STA" in this draft. | Need more discussion  The resolution will be included in the next revised document. |
| 5475 | 5.13 | 3.2 | Why is there a restriction on the type of Ack used for VHT single MPDU in the definition. Ack Policy is typically set by the Ack Policy subfield in the QoS Control field. When the Ack Policy subfield is set to (0,0) a Ack or QoS +CF-Ack frame is sent after DIFS for VHT single MPDU frames. However, the Ack Policy subfield is not always set to (0,0) and hence this behavior is not standardized for all VHT single MPDUs. Therefore remove this restriction from the definition. | Remove the phrase: "and for which the response, if required, is an (NDP) Ack, not a (NDP) Block Ack" | Revised-  Agree in principle.  After removing the phrase, the response frame type description for VHT Single MPDU transmitted from S1G STA is written in  8.2.4.5.4 (Ack Policy subfield).  TGah editor to make changes shown in 11-14-1593r0 under the heading for CID 5105. |
| 5476 | 5.23 | 3.2 | While it is informative to know what a S1G Non-AP STA will not listen for when in non-TIM mode, I believe it would be more informative to know what it does listen for. | Provide a clearer definition as to what a S1G Non-AP STA is. | Rejected-  It is unclear which informative language is asked by the commenter.  The comment fails to identify a specific issue to be addressed. |
| 5477 | 8.15 | 3.2 | Root AP and relay AP and relay STAs should be defined. | provide definition of Root AP, relay AP and relay STA. | Rejected-  All terminologies (including the root AP, relay AP and relay STA) related with the Relay are defined in 9.51 (Relay operation).  Similarly, there is no definition for the mesh station in clause 3.  Because the terminologies for relay is not generally used throughput the draft.  Current description on sub-clause 9.51 is enough. |
| 5478 | 7.55 | 3.2 | The term NDP Carrying Medium Access Control (CMAC) frame is not clear. A frame cannot carry MAC, but rather MAC information. | Change the term from "NDP carrying Medium Access Control (CMAC) frame" to "NDP Medium Access Control Information (NDP MACI) frame" Also correct through out the amendment. | Rejected-  The definition of the NDP CMAC is very clear.  Also, the group decided that the NDP CMAC is more appropriate for representing the original meaning. |

**Propose:**

Revised for CID 5050, 5051, 5052, 5105 per discussion and editing instructions in 11-14/1593r0.

TGah Edior: Remove the following items from sub-clause 3.4

3.4 Abbreviations and acronyms

~~NDP\_1M NDP CMAC frame that is transmitted using the S1G\_1M format (#5050)~~

~~NDP\_2M NDP CMAC frame that is transmitted using the S1G\_SHORT format (#5050)~~

~~NDP (PS-Poll-)Ack NDP Ack or NDP PS-Poll-Ack (#5051)~~

~~PS-Poll(+BDT) PS-Poll or PS-Poll+BDT (#5052)~~

TGah Edior: insert the following definition to sub-clause 3.2:

3.2 Definitions specific to IEEE 802.11

**very high throughput (VHT) single medium access control (MAC) protocol data unit (VHT single MPDU):** An MPDU that is the only MPDU in an aggregate MPDU (A-MPDU) carried in a VHT or sub 1 GHz (S1G) physical layer (PHY) protocol data unit (PPDU) and that is carried in an A-MPDU subframe with the EOF subfield of the MPDU delimiter field equal to 1 ~~and for which the response, if required, is an (NDP) Ack, not a (NDP) Block Ack.(#5105)~~

**NDP\_1M:** A null datak packet (NDP) carrying medium access control (CMAC) frame that is transmitted using the S1G\_1M format

**NDP\_2M:** A null datak packet (NDP) carrying medium access control (CMAC) frame that is transmitted using the S1G\_SHORT format

TGah Edior: Modify the following sub-clause as the following:

**8.2.2 Conventions**

Parentheses enclosing portions of names or acronyms are used to designate a set of related names that vary based on the inclusion of the parenthesized portion. For example,

— *QoS +CF-Poll frame* refers to the three QoS data subtypes that include “+CF-Poll”: the QoS Data+CF-Poll frame, subtype 1010; QoS Data+CF-Ack+CF-Poll frame, subtype 1011; and QoS CFAck+CF-Poll frame, subtype 1111.

— *QoS CF-Poll frame* refers specifically to the QoS CF-Poll frame, subtype 1110.

— *QoS (+)CF-Poll frame* refers to all four QoS data subtypes with CF-Poll: the QoS CF-Poll frame, subtype 1110; the QoS CF-Ack+CF-Poll frame, subtype 1111; the QoS Data+CF-Poll frame, subtype 1010; and the QoS Data+CF-Ack+CF-Poll frame, subtype 1011.

— *QoS (+)Null frame* refers to all three QoS data subtypes with “no data”: the QoS Null (no data) frame, subtype 1100; the QoS CF-Poll (no data) frame, subtype 1110; and the QoS CF-Ack+CF-Poll frame, subtype 1111.

— *QoS +CF-Ack frame* refers to the three QoS data subtypes that include “+CF-Ack”: the QoS Data+CF-Ack frame, subtype 1001; QoS Data+CF-Ack+CF-Poll frame, subtype 1011; and QoS CF-Ack+CF-Poll frame, subtype 1111.

— Whereas *(QoS) CF-Poll frame* refers to the QoS CF-Poll frame, subtype 1110, and the CF-Poll frame, subtype 0110.

— NDP (PS-Poll-)Ack refers to NDP Ack and NDP PS-Poll-Ack

— PS-Poll(+BDT) refers to PS-Poll and PS-Poll+BDT

TGah Edior: Modify the Table 8-9 as the following:

|  |  |  |
| --- | --- | --- |
| * Ack Policy subfield in QoS Control field of QoS Data frames | | |
| Bits in QoS Control field | | Meaning |
| Bit 5 | Bit 6 |
| 0 | 0 | Normal Ack or Implicit Block Ack Request.  In a frame that is a non-A-MPDU frame or VHT single MPDU where either the originator or the addressed recipient does not support Fragment BA procedure:  For a non-S1G STA, the ~~The~~ addressed recipient returns an Ack or QoS +CF-Ack frame after a short interframe space (SIFS) period, according to the procedures defined in 9.3.2.9 (Ack procedure) and 9.22.3.5 (HCCA transfer rules). A non-DMG STA sets the Ack Policy subfield for individually addressed QoS Null (no data) frames to this value. For a S1G STA, the addressed recipient returns an Ack or NDP Ack frame after a SIFS, according to the procedures defined in 9.3.2.9 (Ack procedure).  In a frame that is part of an A-MPDU:  For a non-S1G STA, the ~~The~~ addressed recipient returns a BlockAck frame, either individually or as part of an A-MPDU starting a SIFS after the PPDU carrying the frame, according to the procedures defined in 9.3.2.10 (Block ack procedure), 9.24.7.5 (Generation and transmission of BlockAck frames by an HT STA, or DMG STA or S1G STA), 9.24.8.3 (Operation of HT-delayed block ack), 9.28.3 (Rules for RD initiator), 9.28.4 (Rules for RD responder), and 9.32.3 (Explicit feedback beamforming). For a S1G STA, the addressed recipient returns a BlockAck or NDP BlockAck frame starting a SIFS after the PPDU carrying the frame, according to the procedures defined in 9.3.2.10 (Block ack procedure). |