IEEE P802.11  
Wireless LANs

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| Miscellaneous Part 3 | | | | |
| Date: 2016-01-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Alfred Asterjadhi | Qualcomm Inc. | 5775 Morehouse Dr, San Diego, CA 92109 | +1-858-658-5302 | aasterja@qti.qualcomm.com |
| Naveen Kakani | Qualcomm Inc. |  |  |  |

Abstract

This submission proposes resolutions for multiple comments related to TGah D5.0:

* 8074, 8080, 8129, 8137, 8145, 8147, 8169, 8192, 8202 (9 CIDs)
* 8284, 8285, 8325, 8449, 8478, 8492, 8493, 8502, 8079, 8081, 8448, 8429 (12 CIDs)

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 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.***

# PARS I

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 8074 | Stephens, Adrian | 103.36 | "One or more elements can appear in this frame." DMG got away with this "trick", and REVmc has spent a fair bit of time discussing how to repair the damage. This smacks of either: 1) we don't know, so we can't tell you; or 2) we know, but we can't be bothered to tell you.  Neither reason is acceptable. | List exactly all those elements that may appear in the S1G Beacon frame. | Rejected –  The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined. |
| 8080 | Stephens, Adrian | 107.61 | "Codebook Information field is reinterpreted as follows:"  There is no need for "reinterpretation" language. | Update Table 8-64 to show VHT and S1G-specific parts, and remove cited text. | Revised –  Agree in principle with the comment. Proposed resolution is inline with the proposed changes.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8080. |
| 8129 | Stephens, Adrian | 181.19 | There is a "Max Awake Interval" field and a "Recovery Time" field. Be consistent in use of terminology. Why is one an interval and another a Time? | If these are periods of time, recommend to use "Duration", which is unambiguous. "Interval" sounds like the time between events, and "Time" can refer to some measure of time, such as a TSF time. | Revised –  Agree in principle with the comment. Proposed resolution is inline with the proposed changes. Searching throughout the draft noticed that there is an inconsistent term as well Recovery Time Interval which is the same as Recovery Time.  TGah editor: Replace “Max Awake Interval” with Max Awake Duration” throughout the draft.  Replace “Recovery Time” and “Recovery Time Interval” with “Recovery Duration” throughout the draft. |
| 8137 | Stephens, Adrian |  | Where is Annex G? This annex is normative and describes the "allowable frame exchange sequences". It must therefore cover all the frame exchange sequences usable by 802.11ah. If it does not, it needs to be extended so to do. | Add any necessary changes to Annex G. | Rejected –  The commenter does not indicate specific changes that would satisfy the comment. |
| 8145 | Stephens, Adrian | 537.6 | "(CF16 AND NOT CF32):M CF33 AND ((NOT AD12) AND (NOT AD14)): M CF33 AND ((NOT AD13) AND (NOT AD15)): M RL2 AND ((NOT AD12) AND (NOT AD14)): M RL2 AND ((NOT AD13) AND (NOT AD15)): M CF33 AND (AD12 OR (AD14): O CF33 AND (AD13 OR AD15): O RL2 AND (AD12 OR AD14): O RL2 AND (AD13 OR AD15): O" -- you have got to be joking. This is not readable by any normal human. | Find a way to represent the constraints that is readable, such as by defining intermediate terms and using those. Or consider splitting HTM4.2 into sub items that represent each logical term in the Status column. | Revised –  The readability is constrained due to the absence of paragraph breaks. Proposed resolution adds the paragraph breaks to improve readability.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8145. |
| 8147 | Stephens, Adrian | 547.9 | The PICS reflects the normative specification in the body of the standard. Each PICS entry should be capable of being associated with normative requirements. Some of these entries have no reference. | Either provide a reference at line 9, or delete S1GM23.2.1.  Review all PICS entries with no reference and make similar changes. | Rejected –  The references for S1GM23.2 and its dependent instances (including S1GM23.2.1) is already provided (in this case it is sublause 9.48 (Page slicing). |
| 8169 | Stephens, Adrian | 276.44 | "A non-S1G STA shall not transmit an NDP CF-End frame" -- this immediately begs the question of where are all the "don't do something you can't do anyway" rules for all the other NDP frame types for a non-S1G STA. | Add all the missing "don't do something you can't do anyway" statements (e.g., at least one per NDP frame type). Then delete them all, including the cited instance. | Revised –  Agree in principle with the comment. The issue is that there is no clear instruction for the comment resolution committee on how to deal with such type of comments (often conflicting). As such the assignees attempt to satisfy them (e.g., a comment that asks to add “shall not” statements is satisfied during a ballot, but only to receive another comment that asks to remove such statements. The BRC should ask advice to the WG chair and members on how to deal with these cases.  TGah editor: Remove the cited sentence. |
| 8192 | Stephens, Adrian | 374.35 | "dot11S1GActivityActivated" -- what does this name tell me? not a lot. | Relate to the name of the mechanism. | Revised –  Proposed resolution is the same as CID 8475, which proposes to replace it with “dot11S1GELOperationActivated”  Replace “dot11S1GActivityActivated” with “dot11S1GELOperationActivated” throughout the draft. |
| 8202 | McCann, Stephen | 101.43 | How is the length of the "Optional Elements" sub-field determined, in Figure 8-62a? How does a parser know when the last Optional Element field is reached, as opposed to the FCS sun-field? | Some text should be added to explain how the length of this sub-field is determined. | Revised –  Agree in principle with the comment. The proposed resolution is to replace the field name with “Frame Body” to be inline with the terminology used in Beacon and DMG Beacon frames, and specify that the Frame Body field contains the optional elements listed in the table. In addition added a sentence to point at the subclause describing the parsing of the elements.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8202. |

* VHT MIMO Control field(11ac)

**TGah Editor: *Change Table 8-64 as follows (#8080):***

|  |  |
| --- | --- |
| * Subfields of the VHT MIMO Control field (11ac) | |
| Subfield | Description |
| Nc Index | Indicates the number of columns, *Nc*, in the compressed beamforming feedback matrix minus 1:  Set to 0 for *Nc* = 1  Set to 1 for *Nc* = 2  …  Set to 7 for *Nc* = 8  In an S1G PPDU, the Nc index field does not indicate a value that is greater than 4 |
| Nr Index | Indicates the number of rows, *Nr*, in the compressed beamforming feedback matrix minus 1:  Set to 0 for *Nr* = 1  Set to 1 for *Nr* = 2  …  Set to 7 for *Nr* = 8  In an S1G PPDU, the Nr index field does not indicate a value that is greater than 4 |
| Channel Width | Indicates the width of the channel in which the measurement to create the compressed beamforming feedback matrix was made:  In a non-S1G PPDU:  Set to 0 for 20 MHz  Set to 1 for 40 MHz  Set to 2 for 80 MHz  Set to 3 for 160 MHz or 80+80 MHz  In an S1G PPDU:  Set to 0 for 2 MHz  Set to 1 for 4 MHz  Set to 2 for 8 MHz  Set to 3 for 16 MHz |
| … |  |
| Codebook Information | Indicates the size of codebook entries:  If Feedback Type is SU in a VHT PPDU:  Set to 0 for 2 bits for ψ, 4 bits for   Set to 1 for 4 bits for ψ, 6 bits for   If Feedback Type is SU in an S1G PPDU with Nc Index field equal to 0:  Set to 0 for 2 bits for ϕ, and ψ is not fed back  Set to 1 for 2 bits for ψ, and 4 bits for ϕ  If Feedback Type is SU in an S1G PPDU with Nc Index field greater than 0:  Set to 0 for 2 bits for ψ, and 4 bits for ϕ  Set to 1 for 4 bits for ψ, and 6 bits for ϕ  If Feedback Type is MU in a VHT PPDU:  Set to 0 for 5 bits for ψ, 7 bits for   Set to 1 for 7 bits for ψ, 9 bits for   If Feedback Type is MU in an S1G PPDU:  Set to 0 for 5 bits for ψ, and 7 bits for ϕ  Set to 1 for 7 bits for ψ, and 9 bits for ϕ |
| … | … |

**TGah Editor: *Remove text below (#8080):***

**B.4.17.1 HT MAC features**

**TGah Editor: *Change the row below as follows (i.e., add paragraph breaks) (#8145):***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HTM4.2 | A-MSDU format | 8.3.2.2 (Aggregate MSDU (A-MSDU) format) | (CF16 AND NOT CF32):M  <paragraph break>  CF33 AND ((NOT AD12) AND (NOT AD14)): M  <paragraph break>  CF33 AND ((NOT AD13) AND (NOT AD15)): M  <paragraph break>  RL2 AND ((NOT AD12) AND (NOT AD14)): M  <paragraph break>  RL2 AND ((NOT AD13) AND (NOT <paragraph break>  AD15)): M  <paragraph break>  CF33 AND (AD12 OR (AD14): O  <paragraph break>  CF33 AND (AD13 OR AD15): O  <paragraph break>  RL2 AND (AD12 OR AD14): O  <paragraph break>  RL2 AND (AD13 OR AD15): O | Yes  No  N/A  |

8.3.4.3 S1G Beacon frame format

**TGah Editor: *Change the figure below as follows (#8202):***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |
|  | Frame  Control | Duration | SA | Time stamp | Change  Sequence | Next  TBTT (optional) | Compressed  SSID (optional) | Access  Network  Options (optional) | Frame Body | FCS |
| Octets: | 2 | 2 | 6 | 4 | 1 | 0 or 3 | 0 or 4 | 0 or 1 | variable | 4 |
| * S1G Beacon frame format(#3022) | | | | | | | | | | |

**TGah Editor: *Change the paragraph below as follows (#8202):***

The Frame Body field contains the optional elements listed in Table 8-41a (Minimum and full set of optional elements). The minimum set of optional elements is included in an S1G Beacon frame transmitted at a TSBTT that is not a TBTT and the full set of optional elements is included in an S1G Beacon frame that is transmitted at a TBTT (see 10.1.3.10.1 (General)). See 9.27.6 (Element parsing) on the parsing of elements.

# PARS II

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 8284 | Fischer, Matthew | 353.7 | This sentence needs to be rewritten to make sense: The S1G AP may recommend a value of listen interval different from that in Association Request frame based on its buffer management consideration in Association Response frame | Not certain what it should say. | Revised –  The ambiguity is partly due to the fact that the normative text for this behavior is located in two different subclauses. Proposed resolution is to provide the normative text in one location and provide more details for the setting of the listen interval in association response frames.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8284. |
| 8285 | Fischer, Matthew | 353.13 | I think that there are some nouns missing, like maybe "MIB variable" - The S1G AP may recommend a value of listen interval different from that in Association Request frame based on its buffer management consideration in Association Response frame | Add nouns | Revised –  The sentence has been modified to account for comment resolution for CID 8284. The proposed text also accounts for adding any missing nouns to the sentence.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8285. |
| 8325 | Wang, Xiaofei | 235  .24 | It is unclear how the setting should be done if "the AP indicates that it supports for sensor STA" and if "the AP indicates that it supports for non-sensor STAs", what if the AP indicates support for both sensor and non-sensor STAs? Then this statement would be conflicting. In addition the phrase "it transmits" is redundant. | Change "--1 if it indicates support for sensor STAs --2 if it indicates support for non-sensor STAs" into "--1 if it only indicates support for sensor STAs --2 if it only indicates support for non-sensor STAs"; Also remove "it transmits" | Revised –  Agree in principle with the comment. Since the use of only is not preferred in the draft, suggested resolution is to explicitly add the negative condition.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8325. |
| 8449 | Wang, Xiaofei | 260  .6 | the phrase "MCS difference" is used here, while in other places "MCSDifference" is used in similar sentences. The usage should be consistent and it would be more clear if "MCSDifference" or "MCS Difference" is used since then it would be clear that it is a name for a variable. | Change "MCS difference" into "MCSDifference" | Accepted |
| 8478 | Asterjadhi, Alfred | 220.57 | The Bandwidth Indication field description is missing. | Add the missing description (normatively it is described in 9.3.2.7). | Revised –  Insert “The Bandwidth Indication field is described in 8.2.4.1.11 (Bandwidth Indication and Dynamic Indication fields).” as the last paragraph of the subclause. |
| 8492 | Levy, Joseph | 5.5 | Why is this definition necessary. All NDPs do not have a Data field, by definition. The definition of NDP\_2M and NDP\_1M seem adequate, this definition seems to add nothing as all NDP CMAC frames defined are either NDP\_2M or NDP\_1M. Suggest removing this definition | Delete the definition for null data packet (NDP) carrying medium access control information (CMAC) frame. Also suggest removing all references to NDP CMAC in the specification as it seems to add nothing. Also it would be much simpler to add the NDP CMAC Frame Type value into the frame format description instead of having a table. As all of the frames are defined independently anyway. (section 8.9) | Rejected –  The definition is necessary since the term NDP CMAC frame is extensively used throughout the subclause amendment. Also please note that these frames are not simpy NDPs, but rather NDPs that carry medium access control information. |
| 8493 | Levy, Joseph | 5.29 | The definitions of the protocol version 0 and 1, simply state that it is defined as being protocol version 0 or 1, this is not a useful definition. The definition should define what the PV0 and PV1 are, and possibly the intended use of these protocols, and where they apply. | Please provide a meaningful definition | Revised –  The comment and proposed change are ambiguous. A definition is a statement of the exact meaning of a word, and the provided definitions state exaclty the meaning. To make it consistent with the majority of the other definitions in REVmc D4.0 proposed resolution is to replace “with” with “ that has”.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8493. |
| 8502 | Levy, Joseph | 28 | Changing the general frame format so that the specific protocol version are represented at this point of the specification should not be done. All non-S1G STAs and APs use this section and common protocol, making this section more complicated to add features for S1G seems to burden non-S1G implementation. All MAC frames should meet the basic general format independent on the protocol version. | Minimize the changes to this subclause, and provide the addition of the protocol version if it is necessary as a subclause or in a different subclause, that is specific to S1G, as the PV1 frame format only applies to S1G devices. | Rejected –  The comment fails to idenfify a technical issue. Please note that subclause 8.2.3 provides the general frame format for MAC frames (and PV1 frames are such). Moreover, the addition of the protocol version 1 as a subclause is already provided in 8.8 (MAC frame format for PV1 frames). |
| 8079 | Stephens, Adrian | 106  .46 | "In frames transmitted by an S1G STA, " -- this creates a conflict with unqualified statements in the baseline.  This issue occurs multiple times in this subclause. | Either: 1) show the baseline and qualify it "non-S1G" 2) insert before the baseline para, and insert "otherwise". Consider structuring the alternatives as a list. | Revised –  Agree in principle with the comment and proposed change. Proposed resolution accounts for the proposed changes.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8079. |
| 8081 | Stephens, Adrian | 108.26 | "with the following exceptions".  This is unnecessary, and makes it hard to interpret. | In 8.4.1.41 cite specified table or subclause for S1G-specific parts and add non-S1G to exclude the VHT specific parts (i.e., Table 8-65) ". Add "in a VHT PPDU" to caption of table 8-65. | Revised –  Agree in principle with the comment and proposed change. Proposed resolution accounts for the proposed changes.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8081. |
| 8448 | Wang, Xiaofei | 257  .44 | Non-S1G STAs should not be mandated to send S1G PPDUs even if it is not performing asymmetric Block Ack | Change "When the STA is not performing asymmetric Block Ack" into "When an S1G STA is not performing asymmetric Block Ack" | Revised –  Agree in principle with the commenter. Proposed resolution clarifies as suggested. In addition the proposed resolution contains some changes that remove certain redundancies and contain editorial changes to the paragraph.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8448. |
| 8429 | Hunter, David | 352  .12 | "without being required": what does this mean in an implementation? Is some other entity responsible for this requiring proccess that is applied to the STA? |  | Revised –  No proposed changes have been provided by the commenter. In order to solve the ambiguity, the proposed resolution is to replace “without being required” with doesnot need to listen”. In addition, since the content of this Table is not inline with that of Table 10.2 of REVmc the proposed resolution is to make the table consistent with the baseline.  TGah editor to make the changes shown in 11-15/0082r0 under all headings that include CID 8429. |

**10.48 Dynamic AID assignment operation**

**TGah Editor: *Change the paragraphs below as follows (#8284, 8285):***

**10.2.2.2 Non-AP STA Power Management modes**

**TGah Editor: *Change the paragraph below as follows (#8284, 8285):***

An S1G AP that includes an AID Response element in a (Re)Association Response frame shall set the AID/Multicast AID field to the AID assigned to the (re)associating STA, the AID Switch Count field to 0, and the AID Response Interval field to the value of the listen interval.

NOTE – The AP can specify a listen interval that is different from the listen interval requested by the non-AP STA in the (Re)Association Request frame if the AP cannot buffer the STA’s BUs for the requested listen interval.

9.2.4.2 HCF contention-based channel access (EDCA)

**TGah Editor: *Change the paragraphs below as follows (#8325):***

The S1G AP shall set the STA Type subfield of EDCA Parameter Set elements it transmits to:

—1 if it indicates support for sensor STAs but no support for non-sensor STAs

—2 if it indicates support for non-sensor STAs but no support for sensor STAs

The S1G AP may set the STA Type subfield of EDCA Parameter Set elements to any value that is less than 3 if it indicates support for both sensor STAs and non-sensor STAs as described in 10.50.7 (S1G BSS type and STA type).

**3.2 Definitions specific to IEEE 802.11**

**TGah Editor: *Change the paragraphs below as follows (#8493):***

**protocol version 0 (PV0) medium access control (MAC) protocol data unit (MPDU):** An MPDU that has the Protocol Version field of the Frame Control field of the MPDU header equal to 0.

**protocol version 1 (PV1) medium access control (MAC) protocol data unit (MPDU):** An MPDU that has the Protocol Version field of the Frame Control field of the MPDU header equal to 1.

**8.4.1.32 Rate Identification field**

**TGah Editor: *Change the 3rd paragraph as follows (#8079):***

The MCS Selector field value 0 indicates that the MCS Index field is reserved. The MCS Selector field value 1 indicates the MCS Index field specifies an index value that is taken from Table 20-27 (MCS parameters for mandatory 20 MHz, NSS = 1, NES = 1) to Table 20-30 (MCS parameters for optional 20 MHz, NSS = 4, NES = 1, EQM) and Table 20-36 (MCS parameters for optional 20 MHz, NSS = 2, NES = 1, UEQM) to Table 20-38 (MCS parameters for optional 20 MHz, NSS = 4, NES = 1, UEQM) in 20.5 (Parameters for HT MCSs).

The MCS Selector field value 2 indicates that the MCS Index field specifies:

* Value that are taken from Table 20-31 (MCS parameters for optional 40 MHz, NSS = 1, NES = 1) to Table 20-35 (MCS parameters for optional 40 MHz MCS 32 format, NSS = 1, NES = 1) and Table 20-40 (MCS parameters for optional 40 MHz, NSS = 3, UEQM) to Table 20-41 (MCS parameters for optional 40 MHz, NSS = 4, UEQM) in 20.5 (Parameters for HT MCSs), when carried in frames transmitted by a non-S1G STA.
* Values that are taken from Table 24-38 (S1G MCSs for 1 MHz, Nss = 1) to Table 24-41 (S1G MCSs for 1 MHz, Nss = 4), indicating an S1G MCS for a 1 MHz channel width, when carried in frames transmitted by an S1G STA.

**TGah Editor: *Change the 4rd paragraph as follows (#8079):***

The MCS Selector field value 3 indicates that the MCS Index field specifies:

* Values that are taken from Table 22-30 (VHT-MCSs for mandatory 20 MHz, NSS = 1) to Table 22-37 (VHT-MCSs for optional 20 MHz, NSS = 8), indicating a VHT-MCS for a 20 MHz channel width, when carried in frames transmitted by a non-S1G STA.
* Values that are taken from Table 24-42 (S1G MCSs for 2 MHz, Nss = 1) to Table 24-45 (S1G MCSs for 2 MHz, Nss = 4), indicating an S1G MCS for a 2 MHz channel width, when carried in frames transmitted by an S1G STA.

**TGah Editor: *Change the 5th and 6th paragraphs as follows (#8079):***

The MCS Selector field value 4 indicates that the MCS Index field specifies:

* Values that are taken from Table 22-38 (VHT-MCSs for mandatory 40 MHz, NSS = 1) to Table 22-45 (VHT-MCSs for optional 40 MHz, NSS = 8), indicating a VHT-MCS for a 40 MHz channel width, when carried in frames transmitted by a non-TVHT and non-S1G STA.
* Values that are taken from Table 23-26 (TVHT MCSs for TVHT\_MODE\_1, NSS = 1) to Table 23-29 (TVHT MCSs for TVHT\_MODE\_1, NSS = 4), indicating a TVHT MCS for a TVHT\_W channel width, when carried in frames transmitted by a TVHT STA.
* Values that are taken from Table 24-46 (S1G MCSs for 4 MHz, Nss = 1) to Table 24-49 (S1G MCSs for 4 MHz, Nss = 4), indicating an S1G MCS for a 4 MHz channel width, when carried in frames transmitted by an S1G STA.

**TGah Editor: *Change the 7th and 8th paragraphs as follows (#8079):***

The MCS Selector field value 5 indicates that the MCS Index field specifies:

* Values that are taken from Table 22-46 (VHT-MCSs for mandatory 80 MHz, NSS = 1) to Table 22-53 (VHT-MCSs for optional 80 MHz, NSS = 8), indicating a VHT-MCS for an 80 MHz channel width, when carried in frames transmitted by a non-TVHT and non-S1G STA.
* Values that are taken from Table 23-30 (TVHT MCSs for TVHT\_MODE\_2C and TVHT\_- MODE\_2N, NSS = 1) to Table 23-33 (TVHT MCSs for TVHT\_MODE\_2C and TVHT\_MODE\_2N, NSS = 4), indicating a TVHT MCS for a TVHT\_2W or TVHT\_W+W channel width, when carried in frames transmitted by a TVHT STA.
* Values that are taken from Table 24-50 (S1G MCSs for 8 MHz, Nss = 1) to Table 24-53 (S1G MCSs for 8 MHz, Nss = 4), indicating an S1G MCS for an 8 MHz channel width, when carried in frames transmitted by an S1G STA.

**TGah Editor: *Change the 9th and 10th paragraph as follows (#8079):***

The MCS Selector field value 6 indicates that the MCS Index field specifies:

* Values that are taken from Table 22-54 (VHT-MCSs for optional 160 MHz and 80+80 MHz, NSS = 1) to Table 22-61 (VHT-MCSs for optional 160 MHz and 80+80 MHz, NSS = 8), indicating a VHT-MCS for a 160 MHz or 80+80 MHz channel width, when carried in frames transmitted by a non-TVHT and non-S1G STA.
* Values that are taken from Table 23-34 (TVHT MCSs for TVHT\_MODE\_4C and TVHT\_-MODE\_4N, NSS = 1) to Table 23-37 (TVHT MCSs for TVHT\_MODE\_4C and TVHT\_MODE\_4N, NSS = 4), indicating a TVHT MCS for a TVHT\_4W or TVHT\_2W+2W channel width, when carried in frames transmitted by a TVHT STA.
* Values that are taken from Table 24-54 (S1G MCSs for 16 MHz, Nss = 1) to Table 24-57 (S1G MCSs for 16 MHz, Nss = 4), indicating an S1G MCS for a 16 MHz channel width, when carried in frames transmitted by an S1G STA.

**8.4.1.48 VHT Compressed Beamforming Report field**

***Insert the following subclause heading at the beginning of sub-clause 8.4.1.48:***

**8.4.1.48.1 VHT Compressed Beamforming Report field in non-S1G Band**

**TGah Editor: *Change the paragraph below as follows (#8081):***

The VHT Compressed Beamforming Report information contains the channel matrix elements indexed, first, by matrix angles in the order shown in Table 8-65 (Order of angles in the Compressed Beamforming Feedback Matrix subfield) for a VHT PPDU and, second, by data subcarrier index from lowest frequency to highest frequency. For an S1G PPDU, the matrix angles order and the subcarrier indexes are defined in 8.4.1.48.2. The explanation on how these angles are generated from the beamforming feedback matrix *V* is given in 20.3.12.3.6 (Compressed beamforming feedback matrix). In Table 8-65 (Order of angles in the Compressed Beamforming Feedback Matrix subfield),

**TGah Editor: *Change caption of Table 8-65 as follows (#8081):***

**Table 8-65—Order of angles in the Compressed Beamforming Feedback Matrix subfield in a VHT PPDU**

***Insert the following subclause at the end of sub-clause 8.4.1.48:***

**8.4.1.48.2 VHT Compressed Beamforming Report field in S1G Band**

**TGah Editor: *Change the paragraph as follows (#8081):***

For S1G band, the same VHT Compressed Beamforming Report field is applied in the sounding feedback frame except that:

—The matrix angles order is shown in Table 8-69a (Order of angles in the Compressed Beamforming Feedback Matrix subfield if the Feedback Type field is SU in an S1G PPDU) and in Table 8-69b (Order of angles in the Compressed Beamforming Feedback Matrix subfield if the Feedback Type field is MU in an S1G PPDU), where the Feedback Type is indicated in the STA Info field of the NDP Announcement frame with format shown in Figure 8-50a (STA Info field when used in S1G band).

**9.7.6.5.2 Selection of a rate or MCS**

**TGah Editor: *Change the paragraphs below as follows (#8448):***

—If a BlockAck frame is sent as an immediate response to either an implicit BlockAck request or to a BlockAckReq frame that was carried in an S1G PPDU, the primary rate is defined to be the highest rate in the BSSBasicS1GMCS\_NSSSet parameter that is less than or equal to the rate of the previous frame. If no rate in the BSSBasicS1GMCS\_NSSSet parameter meets these conditions, the primary rate is defined to be the highest mandatory rate of the attached PHY that is less than or equal to the rate of the previous frame. The STA may select an alternate rate according to the rules in 9.7.6.5.4 (Selection of an alternate rate or MCS for a control response frame). The STA shall transmit the BlockAck control response frame at either the primary rate or the alternate rate, if one exists.

—When in asymmetric block ack operation, the S1G STA shall transmit the BlockAckframe at the MCS according to the rules in 9.7.6.5.4a (MCS for asymmetric Block Ack operation).

—When the S1G STA is not following asymmetric block ack operation then:

—If the STA receives an Accept in the Control Response MCS Negotiation Response frame from a responding STA then it shall transmit the BlockAck frame to the responding STA with the rate described in 9.7.6.5.3 (Control response frame MCS computation)

—Otherwise, the STA shall transmit the BlockAck frame at either the primary rate or the alternate rate (according the rules in 9.7.6.5.4 (Selection of an alternate rate or MCS for a control response frame)), if one exists.

**10.2.2.2 Non-AP STA Power Management modes**

**TGah Editor: *Remove Table 10-2 from the 11ah draft (#8429):***

**TGah Editor: *Insert the following paragraphs at the end of subclause 10.2.2.2 (#8429):***

An S1G non-AP STA with dot11NonTIMModeActivated equal to false is a TIM STA. A TIM STA listens to selected Beacon frames (based upon the ListenInterval parameter of the MLME-ASSOCIATE.request or MLME-REASSOCIATE.request primitive) and sends PS-Poll frames to the AP if the TIM element in the most recent Beacon frame indicates an individually addressed BU is buffered for that STA.

An S1G non-AP STA with dot11NonTIMModeActivated equal to true is a non-TIM STA. A non-TIM STA shall transmit at least one PS-Poll or trigger frame that is individually addressed to the associated AP every listen interval and does not need to listen to selected S1G Beacon frames (based upon the ListenInterval parameter of the MLME-ASSOCIATE.request or MLME-REASSOCIATE.request primitive) unless it follows the TWT or NDP Paging procedure. A non-TIM STA may send (NDP) PS-Poll frames to an S1G AP regardless of whether individually addressed buffered BUs have been indicated by the S1G AP.