IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| Comment resolutions for HT Control field (9.2.4.6.X and 10.1) – Block 2 | | | | |
| Date: 2017-02-24 | | | | |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D1.0 with the following CIDs (16 CIDs):

* 4732, 4733, 5052, 5053, 5124, 5125, 5440, 7379, 7716, 7717, 8178, 8248 9804 (13 CIDs)
* 5335, 5441, 7888, (3 CIDs)

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Some editorial suggestions incorporated. Removed 5851, and 9803, 7249 for further discussion, 9495 for further discussion. All 21 CIDs for Pars VI are removed for further discussion (changes in this color).

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

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

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

# PARS IV (9.2.4.6.4.3)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P** | **L** | **Comment** | **Proposed Change** | **Resolution** |
| 4732 | Alfred Asterjadhi | 24 | 63 | Similar observation here. Saying UL MU is misleading. The operation refers to the generation of TB PPDUs. Maybe call the field "TB UL MU Disable"? | As in comment. | Rejected –  To keep consistency throughout the draft it is more appropriate to keep this existing terminology. |
| 4733 | Alfred Asterjadhi | 24 | 55 | N\_ss is called twice in the same subclause to identify tx and rx ss. To avoid confusion specify the variables as N\_rx, ss, and N\_tx, ss. | As in comment. | Revised –  Proposed resolution is inline with suggested change of CID 9804 that suggests to call the Tx NSS as Tx NSTS, resolving this ambiguity.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 4733. |
| 5052 | David Kloper | 24 | 54 | Is this limiting SS that can be allocated to a User, or aggregate number of SS in an MU-MIMO transmission? | Please add clarification. | Revised –  It is already clear from the existing text that the limiting SS is with respect to the STA, quoting “that the STA can receive” as such that can be allocated to the STA. however the proposed resolution suggested by CID 7716 may provide additional clarity that could satisfy the comment. As such the proposed resolution is inline with that of CID 7716, quoting “that the STA supports in reception”.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 5052. |
| 5053 | David Kloper | 24 | 62 | This should only limit UL MU for sending of buffered data, and not prohibit UL MU allocation for immediate Block Acknowledments. Otherwise it would prohibit DL MU. | Please add clarification. | Revised –  The UL MU Disable bit is used for coexistence purposes, and when to use it depend on the non-AP STAs decision. A note regarding this aspect was added to subclause 27.8.2 as part of the comment resolutions provided in 11-17-0115-08-00ax-comment-resolution-to-clause-27-8 for CID 5198.  Quoting the added note:  “NOTE—A device may have multiple radios that can result to difficult in-device coexistence challenges. The device might set UL MU Disable subfield to 1 if it has trouble responding to Trigger frames because the timing or high transmit power would cause interference with another radio in the device.”  Also please note that DL MU OFDMA is still possible, and the acknowledgment can be the SIFS-burst procedure defined in 11ac.  We additionally propose to clarify that this signaling is sent by the STA to the AP only after associaction (where coex becomes actually an issue).  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 5053. |
| 5124 | Dorothy Stanley | 24 | 59 | What does a station that supports 160 MHz but not 80+80 MHz set Channel Width to? Please clarify. | As in comment | Rejected –  A STA uses the HE Capabilities element to differentiate between the two supported modes (OMI simply indicates the operating channel width). Please refer to B1-B7 encoding of the HE PHY Capabilities Information field, quoting:  **“-**B2 indicates support for a 160 MHz channel width in the 5 GHz band.  -B3 indicates support for a 160/80+80 MHz channel width in the 5 GHz band.” |
| 5125 | Dorothy Stanley | 24 | 63 | UL MU is a critical feature in order to achieve the goal of high efficiency. Why are we allowing devices to disable UL MU operation? If this is for power save, then perhaps only allow devices to not support UL MU if their uplink duty cycle is very, very low. | As in comment | Revised –  The UL MU Disable bit is used for coexistence purposes, and when to use it depend on the non-AP STAs decision. A note regarding this aspect was added to subclause 27.8.2 as part of the comment resolutions provided in 11-17-0115-08-00ax-comment-resolution-to-clause-27-8 for CID 5198.  Quoting the added note:  “NOTE—A device may have multiple radios that can result to difficult in-device coexistence challenges. The device might set UL MU Disable subfield to 1 if it has trouble responding to Trigger frames because the timing or high transmit power would cause interference with another radio in the device.”  We additionally propose to clarify that this signaling is sent by the STA to the AP only after associaction (where coex becomes actually an issue).  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 5125. |
| 5440 | Graham Smith | 24 | 50 | Increase Reserved bit number to make length 30 bits | Figure 9-15d change Reserved bits from 3 to 21 | Rejected –  The comment fails to identify a technical issue. Increasing the number of reserved bits to 30 bits eliminates the possibility of aggregating more than one Control field and reduces the amount of useful information that can be carried by the HT Control field for different features, consequently reducing the flexibility and usefulness. It also causes to exceed the length of the HT Control field. |
| 7379 | Laurent Cariou | 24 | 34 | This section includes Rx and Tx operating mode indications. The spec also defines management frames to signal operating mode changes (OMN frames). For consistency, the OMN frames should be modified to include the same indications as in the Operating mode subfield of the A-control. | Define a new IE for the Tx Operating mode parameters. This IE can be added to the existing VHT Operating Mode Notification frame. The new element would be understood by an HE AP (i.e., if the OMN capability is set and the AP is HE it understands the new element). | Rejected –  Comment fails to identify a technical issue. OMN frames are used by legacy STAs as well. Modifying them would make the procedure backward incompatible. In addition adding yet another mechanism that serves the same purpose as OMI Control field increases complexity and does not provide any gain (actually increases overhead as adding a MGMT frame is more redundant than adding an HT Control field). |
| 7716 | Mark Hamilton | 24 | 54 | Can refers to normative permission, not appropriate here | Change "can receive" to "is capable of receiving" | Revised –  Agree in principle (although REVmc consistently uses “can receive”. Proposed resolution is to specify that the STA supports in reception.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 7716. |
| 7717 | Mark Hamilton | 25 | 1 | Can refers to normative permission, not appropriate here | Change "can transmit to "is capable of transmitting | Revised –  Agree in principle (although REVmc consistently uses “can transmit”. Proposed resolution is to specify that the STA supports in transmission.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 7717. |
| 8178 | Osama Aboulmagd | 24 | 59 | does the channel width field in the Operating Mode indicates an operating channel at less or equal the indicated BW? E.g. when the Channel Width is set to 1, does it indicate less or equal 40 MHz | CLARIFY | Rejected –  The field indicates the operating channel width that is well defined in the standard (please refer to P17L6 of REVmc D8.0). Quoting:  “operating channel width: The channel width in which the station (STA) is currently able to receive.” |
| 8248 | Pascal VIGER | 24 | 62 | The UL MU Disable subfield indicates whether UL MU operation is suspended or resumed by the non-AP STA. There is no information indicating the reason of such a suspending, and no procedure to enter or exit this suspending phase. | A procedure shall be defined. Otherwise, STAs may decide by themselves the usage of not of UL MU scheme, which may downgrade the efficiency of UL MU mode. | Revised –  The UL MU Disable bit is used for coexistence purposes, and when to use it depend on the non-AP STAs decision. A note regarding this aspect was added to subclause 27.8.2 as part of the comment resolutions provided in 11-17-0115-08-00ax-comment-resolution-to-clause-27-8 for CID 5198.  Quoting the added note:  “NOTE—A device may have multiple radios that can result to difficult in-device coexistence challenges. The device might set UL MU Disable subfield to 1 if it has trouble responding to Trigger frames because the timing or high transmit power would cause interference with another radio in the device.”  Note to TGax editor: These changes are already incorporated in D1.1 as such no further changes are required.  TGax editor to make the changes shown in 11-17/0115r8 under all headings that include CID 5198. |
| 9804 | Young Hoon Kwon | 25 | 1 | Main purpose of including Tx NSS in OMI is to use less number of Tx RF chains for power savings. However, different from Rx NSS, the number of Tx RF chains is more closely related with the number of space-time streams (N\_STS) compared to the number of spatial streams (N\_SS). For example, even in case a STA indicates Tx NSS to be 1, an serving AP can still allocate the STA single spatial stream with STBC, which requires at least two transmit RF chains to be turned on. Because this is still possible, even if a STA supporting STBC indicates Tx NSS = 1 to the serving AP, the STA shall have at least two Tx RF chains on, which defeats the original purpose of having Tx NSS subfield in OMI. For this issue, a simple remedy is to change Tx NSS subfield to indicate the maximum number of space-time streams (N\_STS) and modify the related operation accordingly. | As in the comment. | Revised –  Agree with the comment. Proposed resolution accounts for the suggested change.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 9804. |

## Discussion: *None.*

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 4740, 4733, 9804, 7716, 5052, 9803, 5851, 7717,):***

* Operating Mode

If the Control ID subfield is 1, the Control Information subfield contains information related to the operating mode change of the STA transmitting the frame containing this information (see 27.8 (Operating mode indication)). The format of the subfield is shown in Figure 9-15i (Control Information subfield format when the Control ID subfield is 1). *(#4740)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 B2 | B3 B4 | B5 | B6 B8 | B9 B11 |
|  | Rx NSS | Channel Width | UL MU Disable | Tx NSTS | Reserved |
| Bits: | 3 | 2 | 1 | 3 | 3 |
| * Control Information subfield format when Control ID subfield is 1*(#4733, 9804)* | | | | | |

The Rx NSS subfield indicates the maximum number of spatial streams, *NSS*, that the STA supports in reception*(#7716, 5052)* and is set to *NSS* – 1.

The Channel Width subfield indicates the operating channel width supported by the STA in reception *(#9803, 5851, 7249)*, and is set to 0 for 20 MHz, 1 for 40 MHz, 2 for 80 MHz, and 3 for 160 MHz and 80+80 MHz.

The UL MU Disable subfield indicates whether UL MU operation is suspended or resumed by the non-AP STA. The UL MU Disable subfield is set to 1 to indicate that UL MU operation is suspended; otherwise it is set to 0 to indicate that UL MU operation is resumed. An AP sets the UL MU Disable subfield to 0.

The Tx NSTS subfield indicates the maximum number of spacel time streams, *NSTS*, that the STA supports in transmission*(#7717)* and is set to *NSTS* – 1.*(#4733, 9804)*

* Operating mode indication
* General

An HE STA can change its operating mode setting either using the procedure described in 11.42 (Notification of operating mode changes), or the procedure described in this subclause.

Operating mode indication (OMI) is a procedure used between an OMI initiator and an OMI responder. An HE STA that transmits a frame including an OM Control subfield is defined as an OMI initiator. An HE STA that receives a frame including an OM Control subfield(#7507) is defined as an OMI responder.

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 5053, 5125):***

An HE STA may send to a STA that indicated value 1 in the OMI A-Control Support field in its HE Capabilities element an individually addressed(#7970) QoS Data, QoS Null, or Class 3 Management frame that contains the OM Control subfield(#7507), after association, to indicate a change in its receive and/or transmit operating parameters. If dot11OMIOptionImplemented is true, an HE STA implements the reception of an individually addressed QoS Data, QoS Null, or Class 3 Management frame that contains the OM Control subfield that indicates a change in receive and/or transmit operating parameters and the HE STA shall set the OMI A-Control Support subfield in the HE MAC Capabilities Information field to 1.*(#5053, 5125)*

An HE AP shall set dot11OMIOptionImplemented(#7890)(#4783) to true and the HE AP shall implement the reception of the OM Control subfield(#7507).

Operating Mode Indication and the Operation Mode Notification should not be transmitted in the same PPDU. When a STA transmits both Operating Mode Indication and Operating Mode Notification, the OMI responder shall use the channel width and the RX NSS of the latest received Operating Mode Indication or Operating Mode Notification from the OMI initiator.

The OMI initiator shall indicate a change in its receive operating mode by including the OM Control subfield(#7507) in a QoS Data, QoS Null, or Class 3 Management frame that solicits an immediate acknowledgement and is addressed to the OMI responder.*(#5053, 5125)*

NOTE—Frames that solicit an immediate acknowledgement are, for example, QoS Null frames and QoS Data frames with Normal Ack or Implicit BAR ack policy and Action frames.(#7024)(#7025)(#7026)(#7027)(#Ed)

The OMI initiator supports receiving PPDUs with a bandwidth up to the value indicated by the Channel Width subfield(#7198) and with a number of spatial streams up to the value indicated by the Rx NSS subfield of the OM Control subfield(#7617) as defined in 27.8.2 (Receive operating mode (ROM) indication).

The OMI initiator shall indicate a change in its transmit operating mode by including the OM Control subfield(#7507) in a QoS Data, QoS Null, or Class 3 Management frame that solicits an immediate(#7182) acknowledgement frame and is addressed to the OMI responder as defined in 27.8.3 (Rules for transmit operating mode (TOM) indication(#7115)).*(#5053, 5125)*

**27.8.3 Rules for transmit operating mode (TOM) indication**

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 9804):***

The TOM indication allows the OMI initiator to suspend responding to any variant of the Trigger frame or to adapt the maximum operating channel width and/or the maximum number of space time streams*(#9804)* it can transmit as a response to a Trigger frame from the OMI responder.

An OMI initiator that is a non-AP STA may indicate changes in its transmit parameters by sending a frame that contains the OM Control subfield to the OMI responder. The OMI initiator shall set:

* The UL MU Disable subfield to 1 to indicate suspension of the UL MU operation (see 27.5.2 (UL MU operation); otherwise it shall set the UL MU Disable subfield to 0 to indicate resumption or continuation of participation in UL MU operation.
* An AP that is an OMI initiator shall set the UL MU Disable subfield to 0.
* The Tx NSTS*(#9804)* subfield to the maximum number of Nsts*(#9804)* that the STA may use in response to Trigger frames.
* The Channel Width subfield indicates the maximum channel width that the STA will use in response to Trigger frames.

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 9804):***

The OMI responder shall consider the OMI initiator as participating in UL MU operation for subsequent TXOPs when the UL MU Disable subfield is 0 in the received OM Control subfield with the following restrictions:

* The maximum number of space time*(#9804)* streams that the OMI initiator can transmit in response to Trigger frames is indicated in the Tx NSTS*(#9804)* subfield of the OM Control subfield
* The maximum channel width over which the OMI initiator can transmit in response to Trigger frames is indicated in the Channel Width subfield of the OM Control subfield

The OMI responder shall indicate a number of spatial streams in the Per User Info field of a Trigger frame, which contains the AID of the OMI initiator, that is less than or equal to the number of space time streams*(#9804)* that is calculated from the Tx NSTS*(#9804)* subfield of the OM Control subfield received from the OMI initiator.

# PARS V (9.2.4.6.4.4)

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P** | **L** | **Comment** | **Proposed Change** | **Resolution** |
| 5335 | EVGENY KHOROV | 25 | 5 | Clause 9.2.4.6.4.4 does not exist | It seems that the correct clause is 10.31.4 (Link adaptation using the HE variant HT Control field). It does not exist too but there are references to this clause in the text. | Revised –  Agree with comment. Proposed resolution fixes the reference, in this subclause and in 10.9 (HT Control operation), and in other places where the inconsistency occurs.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 5335. |
| 5441 | Graham Smith | 25 | 19 | Increase Reserved bit number to make length 30 bits | Figure 9-15e change Reserved bits from 9 to 23 | Rejected –  The comment fails to identify a technical issue. Increasing the number of reserved bits to 30 bits eliminates the possibility of aggregating more than one Control field and reduces the amount of useful information that can be carried by the HT Control field for different features, consequently reducing the flexibility and usefulness. It also causes to exceed the length of the HT Control field. |
| 7888 | Mark RISON | 25 | 5 | There is no behavioural MAC specification of HE link adaptation Control subfields | Change 27.13 to refer to the HE link adaptation Control subfield | Revised –  Agree with comment. Proposed resolution fixes the reference, in this subclause and in 10.9 (HT Control operation), and in other places where the inconsistency occurs.  TGax editor to make the changes shown in 11-17/0239r1 under all headings that include CID 7888. |

**Discussion: *…***

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 5335, 4740, 7888):***

* HE link adaptation

If the Control ID subfield is 2, the Control Information subfield contains information related to the HE link adaptation procedure (see 27.13 (Link adaptation using the HE variant HT Control field))*(#5335, 7888)*. The format of the subfield is shown in Figure 9-15i (Control Information subfield format when the Control ID subfield is 2). *(#4740)*

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B2 | B3 B6 | B7 B15 |
|  | NSS | HE-MCS | Reserved |
| Bits: | 3 | 4 | 9 |
| * Control Information subfield format when Control ID subfield is 2 | | | |

The NSS subfield indicates the recommended number of spatial streams, *NSS*, and is set to *NSS* – 1.

The HE-MCS subfield indicates the recommended HE-MCS, and is set to the HE-MCS Index value (defined in 28.5 (Parameters for HE-MCSs)).

**10.9 HT Control field operation**

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 5335, 7888):***

An HE variant HT Control field shall not be present in a frame addressed to a STA unless that STA declares support for +HTC-HE in the HE Capabilities Information field of its HE Capabilities element. The HE vari-ant HT Control field carried in the frame may contain a Control subfield supported by the intended receiver that has:

* A value of 0 in the Control ID subfield when the transmitting STA expects an HE trigger-based PPDU that carries an immediate acknowledgement, as described in 27.5.2 (UL MU operation).
* A value of 1 in the Control ID subfield when the transmitting STA changes its operating mode*(#Ed)*, as described in 27.8 (Operating mode indication).
* A value of 2 in the Control ID subfield when the transmitting STA follows the HE link adaptation procedure, as described in 27.13 (Link adaptation using the HE variant HT Control field).*(#5335, 7888)*

…

**TGax Editor: *Replace 25.14 (Link adaptation using the HE variant HT Control field) with 25.17 (Link adaptation using the HE variant HT Control field) (#CID 5335, 7888).***

# PARS VI (9.2.4.6.4.5) (POSTPONED)

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P** | **L** | **Comment** | **Proposed Change** | **Resolution** |

## Discussion: *None.*

* Buffer Status Report (BSR)

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 4740):***

The Control Information subfield, when the Control ID subfield is 3, contains buffer status information used for UL MU operation (see 27.5.2.5 (HE buffer status feedback operation for UL MU)). The format of the subfield is shown in Figure 9-15i (Control Information subfield format when the Control ID subfield is 3).*(#4740)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | B0            B3 | B4        B5 | B6        B7 | B8        B9 | B10    B17 | B18    B25 |
|  | ACI Bitmap | Delta TID | ACI High | Scaling Factor | Queue Size High | Queue Size All |
| Bits: | 4 | 2 | 2 | 2 | 8 | 8 |
| * Control Information subfield format when Control ID subfield is 3 | | | | | | |

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 9806, 7865):***

The ACI Bitmap subfield indicates the access categories for which the buffer status is reported and its encoding is shown in Table 9-18b (ACI Bitmap subfield encoding). Each bit of the bitmap is set to 1 to indicate that the buffer status of the AC, which ACI is identified by the location of the bit in the ACI Bitmap subfield, is reported in the ACI Bitmap subfield and set to 0 otherwise. *(#7865)* When the ACI Bitmap subfield is 0 and the Delta TID subfield is 3 it indicates that there is buffered traffic for all 8 TIDs (see Table 9-18c (Delta TID subfield encoding))*(#9806)*.

|  |  |  |  |
| --- | --- | --- | --- |
| * ACI Bitmap subfield encoding | | | |
| B0 | B1 | B2 | B3 |
| AC\_BE | AC\_BK | AC\_VI | AC\_VO |

**TGax Editor: *Change the paragraph and table below of this subclause as follows (#CID 8133, 7302, 7303):***

The Delta TID subfield, together with the values of the ACI*(#8133, 7302)* Bitmap subfield, indicate the number of TIDs for which the STA is reporting the buffer status. The encoding of the Delta TID subfield is defined in Table 9-18c (Delta TID subfield encoding).

|  |  |
| --- | --- |
| * Delta TID subfield encoding | |
| Number of bits in the ACI Bitmap subfield that are set to 1 | Mapping of Delta TID subfield value and number of TIDs, *NTID* |
| 0 | Values 0 to 2 are not applicable;  Value 3 indicates 8 TIDs (i.e., all ACs have traffic) |
| 1 | Value 0 indicates 1 TID; Value 1 indicates 2 TIDs;  Values 2 to 3 are not applicable; |
| 2 | Value 0 indicates 2 TID; Value 1 indicates 3 TIDs;  Value 2 indicates 4 TIDs; Value 3 is not applicable; |
| 3 | Value 0 indicates 3 TID; Value 1 indicates 4 TIDs;  Value 2 indicates 5 TIDs; Value 3 indicates 6 TIDs; |
| 4 | Value 0 indicates 4 TID; Value 1 indicates 5 TIDs;  Value 2 indicates 6 TIDs; Value 3 indicates 7 TIDs; |
| NOTE—The number of TIDs can be obtained as *NTID* = *Nones* + *DVal*, where *Nones* is the number of bits set to one in the AC Bitmap subfield, and *DVal* *(#7303)*is the value of the Delta TID subfield except when *Nones* is equal to 0 for which there is the *NTID* = 8 case. | |

**TGax Editor: *Change the paragraph below, by adding a note, of this subclause as follows (#CID 9620, 9621):***

The ACI High subfield indicates the ACI of the AC for which the BSR is indicated in the Queue Size High subfield.

NOTE—It is up to the non-AP STA that reports the buffer status to determine which queue deserves higher priority with respect to the other queues. The determination might be based on the time the traffic has been outstanding, QoS delay requirements, amount of buffered traffic, etc., and is out of scope for this standard.*(#9620, 9621)*

The Scaling Factor subfield indicates the unit *SF*, in octets, of the Queue Size subfields. *SF* is equal to:

* 16 if the Scaling Factor subfield is 0
* 128 if the Scaling Factor subfield is 1
* 2 048 if the Scaling Factor subfield is 2
* 16 384 if the Scaling Factor subfield is 3

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 8249):***

The Queue Size High subfield indicates the amount of buffered traffic, in units of *SF* octets, for the AC identified by the ACI High subfield that is intended for the STA identified by the receive address of the frame containing the BSR Control field.*(#8249)*

The Queue Size All subfield indicates the amount of buffered traffic, in units of *SF* octets, for all the ACs identified by the ACI Bitmap subfield that is intended for the STA identified by the receive address of the frame containing the BSR Control field.*(#8249)*

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 7867, 7719):***

The queue size values in the Queue Size High and Queue Size All subfields are the total sizes, rounded up to the nearest multiple of SF octets, of all MSDUs and A-MSDUs buffered at the STA (including the MSDUs or A-MSDUs contained in (A-)MPDU containing the BSR)*(#7867)* in the delivery queues used for MSDUs and A-MSDUs with AC(s) that are specified in the ACI High and ACI Bitmap subfields, respectively. A queue size value of 254 is used for all sizes greater than 254*SF* octets. A queue size value of 255 is used to indicate an unspecified or unknown size. If a QoS Data frame is fragmented and is not carried in an A-MPDU, the queue size value might*(#7719)* remain constant in all fragments even if the amount of queued traffic changes as successive fragments are transmitted. If a QoS Data frame is fragmented and is carried in an A-MPDU, the queue size values are set according to the rules in 10.9 (HT operation).

**9.2.4.5.6 Queue Size subfield**

**TGax Editor: *Change the sentence below of this subclause as follows (#CID 7719):***

If a QoS Data frame is fragmented and is not carried in an A-MPDU, the queue size value might*(#7719)* remain constant in all fragments even if the amount of queued traffic changes as successive fragments are transmitted. If a QoS Data frame is fragmented and is carried in an A-MPDU, the queue size value is set as defined in 10.13.1 (A-MPDU contents).

**3.4 Abbreviations and acronyms**

**TGax Editor: *Insert the following acronym (#CID 8181):***

SF Scaling factor*(#8181)*