IEEE P802.11  
Wireless LANs

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| Comment resolutions for miscellaneous CIDs for SA2 | | | | |
| Date: 2020-10-01 | | | | |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D7.0 with the following CIDs (15 CIDs):

* 25015, 25018, 25035, 25046, 25049, 25063, 25066, 25094, 25121, 25126,
* 25127, 25128, 25129, 25130, 25131.

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 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.***

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| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 25015 | Myles, Andrew | 484.48 | On behalf of Pooya Monajemi      Unsolicited broadcast Probe Response frame must be scheduled only when and if FILS Discovery frame is omitted. Sentence suggests that UPR must be scheduled whenever the dot11UnsolicitedProbeResponseOptionActivated is false. | Reword to : "If dot11UnsolicitedProbeResponseOptionActivated is false, then a FILS Discovery frame may be   omitted, in which case an unsolicited broadcast Probe Response frame shall be scheduled …" | Revised –  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25015. |
| 25018 | Myles, Andrew | 485.23 | On behalf of Pooya Monajemi      With knowledge of a probing STA's expected channel dwell duration, an AP can know if the STA is expected to be on channel until the next beacon or unsolicited probe response. | Mandate that 6GHz probe requests include MaxChannelTime (included in FILS parameter set) | Rejected –  Rejected. The comment is out of scope: i.e., it is not on changed text, text affected by changed text or text that is the target of an existing valid unsatisfied comment. |
| 25035 | Seok, Yongho | 486.15 | In 6 GHz, the STA can't transmit any Probe Request frame on a channel before the STA receives a frame from an AP operating on that channel. (See the below FCC rule)   "In the 5.925-7.125 GHz band, client devices must operate under the control of a standard power access point, indoor access point or subordinate access point; Subordinate access points must  operate under the control of an indoor access point. In all cases, an exception exists for transmitting brief messages to an access point when attempting to join its network after detecting a signal that confirms that  an access point is operating on a particular channel...." | Please update the 26.17.2.3.3 according to the regulation requirement. | Rejected –  The comment fails to identify a technical issue. IEEE802.11 standard applies world-wide and is not tied to specific local regulatory requirements when it comes to technical specification. However, it is worth noting that an 802.11 compliant device will obey not only IEEE802.11 requirements but also the local regulatory requirements (e.g., those of FCC in the U.S.). |
| 25046 | Seok, Yongho | 432.51 | The comment requested by a non-member of this TGax SA Ballot (Young-hoon Kwon).   What is a "TBTT scheduled STA"? Definition needed. | As shown in the comment. | Revised –  Agree in principle with the comment. Proposed resolution adds the definition for the TBTT scheduled STA and also for the TBTT scheduling AP in clause 3.2.  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25046. |
| 25049 | RISON, Mark | 382.27 | “— A UPH Control subfield is not included in any frame if the remaining space in the A-MPDU, after inclusion of solicited frames that cannot contain an HE variant HT Control field, is not sufficient to contain frame(s) that contain an HE variant HT Control field.” is not clear as to what “inclusion of solicited frames” means, specifically whether they have to frames that are required to be included in the response or merely frames that are allowed to be included in the response. Also, it would be clearer to say "… is not sufficient to contain a frame that contains…" to make it clear that if you can include a single frame with the HEvHTC you must do so, even if that means you then cannot squeeze in a second frame that could carry an HEvHTC | Change to "— A UPH Control subfield is not included in any frame if the remaining space in the A-MPDU, after inclusion of frames that can be in included in the A-MPDU but cannot contain an HE variant HT Control field, is not sufficient to contain a frame that can be included in the A-MPDU and can contain an HE variant HT Control field" | Revised –  Agree in principle with the changes. Proposed resolution is inline with the proposed changes, except for some editorial modifications/improvements.  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25049. |
| 25063 | RISON, Mark | 416.30 | "The TWT  responding STA should solicit buffer status reports from the TWT requesting STA at the start of the TWT  SP following the procedure described in 26.5.3 (MU cascading sequence) or as described in 26.5.7 (NDP  feedback report procedure)." -- the xrefs look bogus | As it says in the comment | Revised –  Agree in principle with the commnet. Something went wrong between D4.0 and D5.0. Proposed resolution is to fix the first reference, which should be referring to buffer status report operation.  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25063. |
| 25066 | RISON, Mark | 382.31 | "A UPH Control subfield is not included in a frame if the other Control subfields in the HE variant HT  Control field and the available space in the HE variant HT Control field, other than Control subfields  with a Control ID subfield equal to 15, are included in the HE variant HT Control field of the frame,  is not sufficient to contain an additional UPH Control subfield as well." is very confusing | Change to "A UPH Control subfield is not included in a frame if the frame contains Control subfields other than UPH and ONES Control subfields in the HE variant HT  Control field and the remaining space   is not sufficient to contain an UPH Control subfield as well." At 277.20 change "An HE STA that receives a Control subfield with Control ID subfield equal to 15" to "An HE STA that receives a Control subfield with Control ID subfield equal to 15 (an ONES Control subfield)". At 382.39 change "a Control subfield with a Control ID subfield set to 15" to "an ONES Control subfield" | Revised –  Agree in principle with the changes. Proposed resolution is inline with the proposed changes, except for some editorial modifications/improvements.  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25066. |
| 25094 | RISON, Mark | 380.62 | "A non-AP STA shall follow the rules in 26.5.4.5 (Additional considerations for unassociated STAs) to con-  struct an HE TB PPDU in response to a Trigger frame that is not an MU-RTS Trigger frame from an AP  with which it is not associated and that allocates RA-RUs for unassociated STAs." appears on the previous page | Delete the cited text on the referenced page | Accepted |
| 25121 | RISON, Mark | 466.47 | "If the OPS AP sets the bit corresponding to an OPS  non-AP STA in the traffic indication virtual bitmap field carried by the Partial Virtual Bitmap of the TIM  element of the OPS frame or FILS Discovery frame to 0, the AP should send neither individually addressed  frames to the STA nor Trigger frames with a User Info field that addresses the STA during the OPS period." -- a non-AP STA needs to be able to rely on the OPS AP not addressing the STA during the OPS period, else the STA is at risk of losing DL data. I have to keep resubmitting the comment because it is not being addressed, it is being evaded. As https://mentor.ieee.org/802.11/dcn/20/11-20-0227-04-000m-pifs-for-beacons.pptx says, "It seems this commented was "punted" without a proper consideration.  This is not allowed under IEEE-SA processes". | Change "should" to "shall" in the cited text | Rejected –  A substantially similar comment was rejected in the previous round with the following argument:  “the problem raised here is not an issue. The STA has sufficient confidence that it can go to doze state without the proposed change, without taking the risk of loosing DL data.”  The CRC had discussed the comment and concluded that the problem raised by the commenter was not an issue. Hence, it is not clear what is not being addressed or what is being “punted”. |
| 25126 | Kandala, Srinivas | 474.35 | RE: CID #24170. I understand the resolution to the comment. However, it brought a few more comments which I am covering in this comment and the next 3:  “Trigger frame or frame carrying a TRS Control field” is same as "triggering frame" | Replace the cited text with "Triggering frame" | Revised –  The CRC finds that the cited issue is located in P469L24 and L31.  Agree in principle with the changes (except that proposed change is to use triggering frame rather than Triggering frame).  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25126. |
| 25127 | Kandala, Srinivas | 474.35 | Wording for the condition when HE ER SU PPDU should be used for control frame in responding to other frames is unclear. In the following content "A Control frame sent by an HE STA as a response to an HE SU PPDU or a non-HT PPDU that does not contain a Trigger frame or frame carrying a TRS Control field should be carried in a non-HT PPDU unless the most recently received PPDU sent by a recipient of the HE SU PPDU to the HE STA after association was an HE ER SU PPDU in which case the Control frame should be carried in an HE ER SU PPDU.", it is not clear what the following reference "the most recently received PPDU", " a recipient of the HE SU PPDU" and " the HE STA" are referring to. | Change the cited sentence to, "A Control frame sent by an HE STA as a response to an HE SU PPDU or a non-HT PPDU that does not contain a Trigger frame or frame carrying a TRS Control field should be carried in a non-HT  PPDU unless the most recent PPDU sent by the HE STA to the recipient(s) of the control frame after association was an HE ER SU PPDU in which case the Control frame should be carried in an HE ER SU PPDU." | Revised –  The CRC finds that the cited sentence is located in P469L30.  Agree in principle with the changes. Proposed resolution accounts for all the proposed changes, except for some minor editorial changes (e.g., capital C rather than c for control frame).  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25127. |
| 25128 | Kandala, Srinivas | 474.35 | wording for the condition when HE ER SU PPDU should not be used for control frame in responding to HE ER SU frame is unclear. In the following content " A Control frame sent by an HE STA as a response to an HE ER SU PPDU that does not contain a Trigger frame or frame carrying a TRS Control field should be carried in an HE ER SU PPDU unless the most recently received PPDU sent by a recipient of the HE ER SU PPDU to the HE STA after association was not an HE ER SU PPDU in which case the Control frame should be carried in non-HT PPDU.", it is not clear what the following reference "the most recently received PPDU", " a recipient of the HE ER SU PPDU" and " the HE STA" are referring to. | " A Control frame sent by an HE STA as a response to an HE ER SU PPDU that does not contain a Trigger frame or frame carrying a TRS Control field should be carried in an HE ER SU PPDU unless the most recent PPDU sent this HE STA to the recipient(s) of the control frame after association was not an HE ER SU PPDU in which case the Control frame should be carried in non-HT PPDU " | Revised –  The CRC finds that the cited sentence is located in P469L24.  Agree in principle with the changes. Proposed resolution accounts for all the proposed changes, except for some minor editorial changes (e.g., capital C rather than c for control frame).  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25128. |
| 25129 | Kandala, Srinivas | 474.35 | : the term “after association” in this two paragraphs make the format selection prior to association has unbalanced link. Please see contribution 802.11-20/1503 for detailed discussion. | two options: Opt 1: Remove the term “after association” in the restrictions. Opt 2: Add the following :  “Prior to association, a control frame sent by an HE STA should be carried in an HE ER SU PPDU in any of these two scenarios: 1. it is a response to an HE ER SU PPDU that does not contain a triggering frame, unless the most recent PPDU sent by this HE STA to the recipient(s) of this control frame was not an HE ER SU PPDU 2. the most recent PPDU sent by this HE STA was an HE ER SU PPDU.” | Ruchen has a contribution. Pending the discussion of that contribution. |
| 25130 | Hamilton, Mark | 478.42 | Follow-up to CID 24543. The potential for adding complexity to list the features that are not applicable is much smaller than the complexity for an implementer of the ax amendment to have to check all of clauses 26 and 27 for any exceptions, especially if those are not always indicated as exceptions but are just a statement of new behavior. As an alternative to listing here what the exceptions are, it would be very helpful to the reader to at least have a NOTE in the earlier clauses where a feature that is (or might be?) impacted by clause 26 or 27 "overrides". | For the major feature (sub)clauses that have a known or potential change (or are "not applicable") for 6 GHz operation, add a NOTE in the main body text (earlier clauses) that indicates "This feature [has | may have] changes when operating in 6 GHz, see clause [26 | 27]. | 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. |
| 25131 | Hamilton, Mark | 483.63 | Follow-up to CID 24546. The added sentence helps considerably. However, normative verbs are missing or misused. | Change to "A 6 GHz STA \_shall\_ perform \_the\_ subset of the operations defined for a FILS STA \_\_ described in 26.17.2.3 (Scanning  in the 6 GHz band) and \_may\_ perform all the other operations defined for a FILS STA." | Revised –  Agree in principle with the changes. Proposed resolution accounts for all the proposed changes with the additional clarification that this subset of operations is the one that is described in 27.17.2.3 (editorial).  TGax editor to make the changes shown in <https://mentor.ieee.org/802.11/dcn/20/11-20-1541-00-00ax-mac-cr-miscellaneous-cids-for-sa2.docx>  under all headings that include CID 25131. |

**Discussion: *None.***

* AP behavior for fast passive scanning

**…**

**TGax Editor: *Change the paragraphs below of this subclause as follows (#CID 25015):***

* If dot11UnsolicitedProbeResponseOptionActivated is true, all FILS Discovery frames shall be omitted and an unsolicited broadcast Probe Response frame shall be scheduled for transmission at the target transmit time instead of each omitted*(#25015)* FILS Discovery frame.
* If dot11UnsolicitedProbeResponseOptionActivated is false, then any FILS Discovery frame may be omitted and an unsolicited broadcast Probe Response frame shall be scheduled for transmission at the target transmit time instead of each omitted*(#25015)* FILS Discovery frame.

…

(#24209)

**26.8.2 Individual TWT agreements**

**…**

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25063):***

The TWT responding STA of a trigger-enabled TWT agreement shall schedule for transmission a Trigger frame for the TWT requesting STA, as described in 26.5.2 (UL MU operation), within each TWT SP for that TWT agreement except that the Trigger frame may be replaced by a frame carrying a TRS Control subfield provided that the frame is carried in a DL MU PPDU and the AP allocates enough resources in the HE TB PPDU for the STA to at least deliver its BSRs in response to the soliciting DL MU PPDU. The TWT responding STA should solicit buffer status reports from the TWT requesting STA at the start of the TWT SP following the procedure described in 26.5.5 (Buffer status report operation)*(#25063)* or as described in 26.5.7 (NDP feedback report procedure). The TWT responding STA that intends to schedule for transmission additional Trigger frames during a trigger-enabled TWT SP shall set the More TF subfield in the Common Info field of the Trigger frame to 1 to indicate that it will schedule for transmission another Trigger frame within the same TWT SP. The TWT responding STA shall set the More TF subfield to 0 when the Trigger frame is the last scheduled Trigger frame of the TWT SP or when the Trigger frame is scheduled for transmission outside of a TWT SP.

…

**3.2 Definitions specific to IEEE 802.11**

**TGax Editor: *Insert the definition below in the appropriate location (maintaining alphabetical order) (#CID 25046):***

**target beacon transmit time (TBTT) scheduled station (STA):** A non-access point (AP) STA that negotiates the wake TBTT of the first Beacon frame and the wake interval between subsequent Beacon frames that it intends to receive. *(#25046)*

**target beacon transmit time (TBTT) scheduling access point (AP):** An AP that has accepted the request from a non-AP station (STA) to negotiate the wake TBTT of the first Beacon frame and the wake interval between subsequent Beacon frames that the non-AP STA intends to receive. *(#25046)*

**26.5.2.4 A-MPDU contents in an HE TB PPDU**

…

A non-AP STA shall include an HE variant HT Control field containing the UPH Control subfield in the frames carried in the A-MPDU of the HE TB PPDU with the following exceptions:

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25049):***

— A UPH Control subfield is not included in any frame if the remaining space in the A-MPDU, after inclusion of frames that are solicited to be included in the A-MPDU but cannot contain an HE variant HT Control field, is not sufficient to contain a frame that can be included in the A-MPDU and can contain an HE variant HT Control field.*(#25049)*

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25066):***

— A UPH Control subfield is not included in a frame if the frame contains Control subfields other than UPH Control and ONES Control subfield and the remaining space in the HE variant HT Control field of the frameis not sufficient to contain an UPH Control subfield as well.*(#25066)*

— A UPH Control subfield is not included in a frame that is a Control frame.

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25066):***

A non-AP STA shall not include an ONES Control subfield in the HE variant HT Control field of the frames carried in an HE TB PPDU. *(#25066)*

…

**10.8 HT Control field operation**

…

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25066):***

An HE STA that receives a Control subfield with Control ID subfield equal to 15 (i.e., an ONES Control subfield)*(#25066)* shall ignore the remainder of the A-Control subfield.

…

* PPDU format selection

…

An HE STA shall send Control frames following the rules defined in 10.6.6 (Rate selection for Control frames) with the following exceptions:

* …

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25126, 25128):***

* A Control frame sent by an HE STA as a response to an HE ER SU PPDU that does not contain a triggering frame*(#25126)* should be carried in an HE ER SU PPDU unless the most recent PPDU sent by the HE STA to the recipient of the Control frame, *(#25128)* after association, was not an HE ER SU PPDU in which case the Control frame should be carried in non-HT PPDU.

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25126, 25127):***

* A Control frame sent by an HE STA as a response to an HE SU PPDU or a non-HT PPDU that does not contain a triggering frame *(#25126)* should be carried in a non-HT PPDU unless the most recent PPDU sent by the HE STA to the recipient of the Control frame, *(#25127)* after association, was an HE ER SU PPDU in which case the Control frame should be carried in an HE ER SU PPDU.
* …
* Scanning in the 6 GHz band
* General

…

**TGax Editor: *Change the paragraph below of this subclause as follows (#CID 25131):***

A 6 GHz STA shall perform the subset of the operations defined for a FILS STA that is described in 26.17.2.3 (Scanning in the 6 GHz band) and may perform all the other operations defined for a FILS STA.*(#25131)* (#24546)

…