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### IEEE P802.11Wireless LANs

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| 11ax D1.0 MAC Comment Resolution for  |
| Date: 2017-05-01 |
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Abstract

This submission proposes resolutions for comments of TGax Draft 1.2 with the following CIDs 5344 , 5339, 6466 , 6794 ,7183 ,5744 ,6793 ,10302 ,6797, 6799, 6801, 6802 ,6803, 6806 ,9107 ,6809 ,6810 and 6813

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 D1.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax D1.0 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** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 5344 | 104.20 | 9.6.29.1 | STA-to-STA operation is not defined\ | Replace with direct links | Revised: Agreed with the comments and change the terminology to Peer-to-Peer link  |
| 5339 | 95.54 | 9.4.2.223 | STA-2-STA operation is not defined | Replace with direct links | Duplicate: CID 5344 |
| 6466 | 95.55 | 9.4.2.223 | Variant terms used for the same feature: "STA-2-STA operation". A matter of a few sentences earlier we have "STA-to-STA". Which is it? | Change "STA-2-STA" to "STA-to-STA". | Duplicate: CID 5344 |
| 6794 | 207.06 | 27.3.16.1 | Incorrect (or at least unclear) use of definite article: "the STA-to-STA operation". Is there only one such STA-to-STA operation? | Clarify. | Revised: The text is revised to improve the clarity |
| 7183 | 207.06 | 27.16.3 | Does "STA-to-STA" here has the same meaning with what is defined in 802.11-2016 "A peer-to-peer link is defined to be either a Direct Link within a QoS BSS, a TDLS, or a STA-to-STA communication in an IBSS." | Please clarify it | Duplicated: 5344  |
| 5744 | 207.07 | 27.16.3.1 | "Can" is not a normative text, change to "should" | Can-->Should | Counter: Change “can” to “may”. |
| 6793 | 207.06 | 27.3.16.1 | Incorrect (or at least unclear) use of definite article: "the HE STA which". Is there only one such HE STA? | Clarify. | Revised: The test is revised to improve the clarity |
| 10302 | 207.07 | 27.16.3.1 | "should" is ambiguous expression. | Use "shall" or remove this sentence. | Rejected: Since it is not a mandatory behaviour, it can’t be a “shall” behaviour. |
| 6797 | 207.19 | 27.3.16.2 | Mismatched terms: "Quiet Time Period Operation (Figure 27-8 (Quieting time period operation)". Is is Quiet or Quieting? | Pick one term and stick to it. | Revised: |
| 6799 | 207.52 | 27.3.16.2 | Awkward phrasing: "with the matching dialog token and response token". | Change to "with dialog toekn matching the response token" or some other less awkward wording. | Accepted: |
| 6801 | 207.57 | 27.3.16.2 | Use of undefined term: "the Quite Time Period". Quite what? | Change "Quite" to "Quiet". | Accepted: |
| 6802 | 207.57 | 27.16.3.2 | Unclear and possibly garbled text: "the requested HE STA". What does this mean? Elsewhere in the same section we have "requester" HE STA so perhaps this is a misprint. | Change "requested" to "requester". | Accepted: |
| 6803 | 207.57 | 27.16.3.2 | Descriptive language used where it seems normative language must have been intended: the HE STA "can" transmit frames. The ability of the HE STA to transmit frames is not in question; presumably what is meant is that in the circumstances described, the HE STA is permitted to transmit frames. | Change "can" to "may". | Duplicated: 5744 |
| 6806 | 207.58 | 27.16.3.2 | Normative text tied entirely to vendor specific elements: "the requested [requester?] HE STA can [may?] transmit frame belongs [?] to the requested type of STA-to-STA operation indicated by the vendor specific service identifier". Normally vendor specific behavior is outside the scope of the standard, but here we have an elaborate new protocol whose behavior is defined entirely in terms of vendor specific behavior. Are we allowed to mix normative text and vendor specific definitions in this way? And even if we are allowed to, should we? What is gained? | Change "frame" to "frames" and delete the text from "belongs to" to the end of the sentence. | Counter: Agree with the commentator that that vendor specific behaviour is out of scope. But, to clarify the operation of the feature, the text is move to the footnote as informational text . |
| 9107 | 207.62 | 27.3.16.2 | The following sentence "NOTE--The GAS protocol can be used by an HE STA to inform an AP the type of STA-to-STA operations" does not read correctly and the grammar requires some correction. | Change the cited setence to "NOTE--The HE STA can use the GAS protocol to transport an element that informs an AP about the type(s) of STA-to-STA operations that the HE STA supports." | Accepted |
| 6809 | 208.05 | 27.16.3.3 | Mandatory requirements embedded in optional mode: earlier it's stated that an AP "may" operate this way, but here we have a "shall". If this is just an illustrative example, it is confusing and inappropriate to have mandatory language included. | Reword to eliminate the "shall". If the idea is to describe some sort of conditionally mandatory behavior, then reword the introductory language to make it clear that this is an optional mode rather than simly an illustrative example. | Revised. Text is added to clause 27.16.4.1 to clarify the conditional mandatory behaviour. |
| 6810 | 208.11 | 27.16.3.3 | Mandatory requirements embedded in optional mode: earlier it's stated that an AP "may" operate this way, but here we have a "shall". If this is just an illustrative example, it is confusing and inappropriate to have mandatory language included. | Reword to eliminate the "shall". If the idea is to describe some sort of conditionally mandatory behavior, then reword the introductory language to make it clear that this is an optional mode rather than simly an illustrative example. | Duplicate. [6809] |
| 6813 | 208.23 | 27.16.3.3 | Incorrect use of definite article: "to the value no larger". Is there just one? | Change to "to a value no larger". | Accepted. |

**Discussion:**

[CID 5344, 5339, 6466, 7183] : Revised

All “STA-to-STA” is replaced by the terminology define in 802.11-2016.

[6794]: Revised: Text is updated according to the comment.

[5477] : Accepted

[6973] : Revised: Text is updated according to the comment.

[10302] : Rejected: Since it is not a mandatory behavior, it can’t be a “shall” behavior.

[6797]: Revised: Text is updated according to the comment.

[6799]: Accepted: Text is updated according to the comment.

[6801] : Accepted

[6802] : Accepted

[6803]: Duplicated. [5744]

[6806] : Counter: Agree with the commentator that that vendor specific behavior is out of scope. But, to clarify the operation of the feature, the text is moved to the footnote as informational text.

[9107] : Accepted.

[6809, 6810] : Revised: Text is updated according to the comment.

[6813] : Accepted

**Propose:**

Revised the following text per discussion and editing instructions in 11-17/0700r0.

***TGax Editor: Modify 27.16.4 as the following: (Clause 26.16.3 was revised to 27.16.4 in Draft D1.2)***

**27.16.4 Quiet [6797] HE STAs in an HE BSS**

**27.16.4.1 General**

The QTP (Quiet time period) is an optional feature which [6809] defines a period for Peer-to-peer (CID 5344, ..) operation during which only HE STA (CID 6793) which supports Peer-to-peer (CID 5344, ..) operation may [5744] transmit frames. During the period an HE STA should not transmit frames unless it participates in (CID 6794)Peer-to-peer (CID 5344, ..) operation. All HE STAs in the HE BSS not partici-pating (CID 6794) Peer-to-peer (CID 5344, ..) operation should stay quiet in the period. An AP that supports QTP shall set the QTP Support field in the AP's HE Capabilities element to 1 and shall set the QTP Capability field to 0 otherwise.

**27.16.4.2 Procedure at the requester HE STA**

Upon the reception of an MLME-QTP.request primitive, an HE STA shall perform the following procedure to start the Quiet Time Period Operation (Figure 27-13 (Quiet **[6797]**Time Period operation)):



a) If responder AP and requester HE STA are QTP capable as indicated by the QTP Support field in the HE Capabilities element, the requester HE STA sends a Quiet Time Period Request frame indi-cating the duration, interval, and type of operation (indicated by vendor specific service type). The requester HE STA may include multiple Quiet Time Period Request elements in one frame for mul-tiple types of Peer-to-peer (CID 5344, ..) operations.

b) If a Quiet Time Period Response frame is received with the dialog token matching the [6799] request token with a status code set to a value of SUCCESS, the AP has confirmed the reception of the Quiet Time Period Request element, and the MLME shall issue an MLME-QTP.confirm primitive indicating the success of the procedure.

c) When a Quiet [6801] Time Period Setup frame is received, the requester [6802] HE STA may [5744] transmit frames[6806]\*. The transmission of a frame by HE STA (CID 6793) in this period shall follow the CCA rules.

NOTE—The HE STA can use the GAS protocol to transport an element that informs an AP about the type(s) of STA-to-STA operations that the HE STA supports [9107] .

\*[6806] NOTE – The frames belong to the requested type of Peer-to-peer (CID 5344, ..) operation indicated by the vendor specific service identifier of the Quiet Time Period Response

**27.16.4.3 Procedure at the responder AP**

A responder AP may operate as follows (Figure 27-13 (Quiet **[6797]**Time Period operation)):

a) When a QTP Request frame is received from an HE STA, the MLME shall issue an MLME-QTP.indication primitive.

b) Upon receipt of the MLME-QTP.response primitive, the AP may respond by sending Quiet Time Period Response frame.

1) If the result code is SUCCESS, the request is accepted. The responder AP shall schedule the quiet period(s) according to the accepted request. Contained in the transmitted Quiet Time Period Response frame is the copy of the request token from the requester HE STA. The QTP procedure shall be terminated if the number of quiet periods exceeds the value of the Repetition Count field specified.

2) If the result code is REJECTED, the request has not been fulfilled.

c) When the scheduled quiet time periods arrive, the responder AP may transmit a Quiet Time Period Setup frame including Quiet Time Period Setup element. Only HE STA (CID 6793) which supports the oper-ation indicated by the Vendor Specific Service Identifier field of the Quiet Time Period Setup ele-ment may [5744] transmit frames in the quiet time period. The responder AP shall set the Quiet Period Duration field of Quiet Time Period Setup frame to a [6813] value no larger than indicated in Quiet Period Duration field of the Quiet Time Period Request element sent by the requester HE STA