### IEEE P802.11 Wireless 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

CID 3048, 3049, 5349, 5351, 3038, and 4472

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.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3038 | 95.48 | 9.4.2.223 | Instead of defining 3 separate elements for Quiet time setup/Req/Resp, combined to one element which carries a code to indicate the sub-type of the element and the operation involved | Rename 9.4.2.223 as HE Quiet Time and remove 9.4.2.224 & 9.4.2.225. Add 3 sub-sections to this section - each section representing the sub-type of the HE Quiet Time: 1. 9.4.2.223.1 Quiet Time Period Announcement - This section will carry the description in 9.4.2.223 - change the figure & description to include a 1 octet code field (value 1 for this operation) 2. 9.4.2.223.2 Quiet Time Period Request - This section will carry the description in 9.4.2.224 - change the figure & description to include a 1 octet code field (value 2 for this operation) 3. 9.4.2.223.2 Quiet Time Period Response - This section will carry the description in 9.4.2.225 - change the figure & description to include a 1 octet code field (value 3 for this operation) | Revised: The changes are made to clause 9.4.2.223, 224, and 225 as proposed. |
| 3048 | 104.20 | 9.6.29 | Don't need to define 3 separate action frames for Quiet Time Period - the 3 operations can be consolidated as one action frame with a code field separating each operation | See comment suggestion consolidating the 3 Quiet Time Period elements to one element with a code field value for each operation. | Duplicated: CID 3038 |
| 3049 | 104.14 | 9.6.29 | Instead of defining a new action frame, Quiet Time Period frames can be of type HE Action frame. | Add Quiet Time Period category under HE Action frames and create a section that describes frames related to Quiet Time Period | Revised: The resolution of the comment is addressed together with CID 3048 |
| 5349 | 104.01 | 9.6.28.3 | Table 9.47 does not contain a value for HE Action Category | Add the row with code <ANA>, meaning "HE" and reference to Clause 9.6.28 | Countered: an alternative resolution is provided for CID 3048, 3049 which is more suitable for Quiet Time Period operation. |
| 5351 | 104.01 | 9.6.28.3 | Table 9.47 does not contain a value for Quite Time Period Action Category | Add the row with code <ANA>, meaning "Quite Time Period" and reference to Clause 9.6.29 | Duplicated: Same as 5349 |
| 4472 | 97.16 | 9.4.2.225 | Element ID Extension subfield shown in Figure 9-589db (Quiet Time Period Response element) is not defined in the text following the figure. | Define subfields "Element ID Extension" | Revised: The comment is addressed in 3048, 3049 |

**Discussion:**

***[*CID 3048, 3049, 5349, 5351, 3038, and 4472*] : Accepted***

Accepted: The changes are made to clause 9.4.1.11, 9.4.2.223, 224, and 225 as proposed.

There are around 80 CIDs commenting on various aspect of Quiet time operation.

Disclaimer: The part 1 of the resolution of the quiet time period is to re-structure the clauses to better match the format of 802.11 specifications. Some text in the revised clauses will be revised further when other CIDs are addressed.

**Propose:**

Revised the following text per discussion and editing instructions in 11-17/0693r0.

***TGax Editor: Modify 9.4.1.11Table 9-47 as the following:***

**9.4.1.11 Action field *Change Table 9-47 as follows (insert a new row and updated reserved row):***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ~~...~~ | ~~...~~ | ~~....~~ | ***~~...~~*** | ***~~...~~*** |
| <ANA> | Protected HE(#4911) | 9.6.29 (Pro-tected HE Action frame details(#4911)) | Yes | No |
| ~~<ANA>~~ | ~~Quiet Time Period~~ | ~~9.6.30 (Quiet Time Period Action frame details)~~ | ***~~No~~*** | ***~~No~~*** |

***TGax Editor: Modify 9.4.1.11Table 9-421z as the following:***

**9.6.28.1 HE Action field**

.....

**Table 9-421z—HE Action field values**

|  |  |
| --- | --- |
| **Value**  1-255 Reserved | **Meaning** |
| 0 | HE Compressed Beamforming And CQI (#4911) |
| 1 | Quiet Time Period |
| 2-255 | Reserved |

***TGax Editor: Modify 9.6.30 as the following:***

**9.6.28.3 Quiet Time Period Action frame details**

The Quiet Time Period action frmae is an Action No Ack frame of category HE. The Action field of a Quiet Time Period contains the information shown in Table 9-xxxyy (Quiet Time Period Action field format).

|  |  |
| --- | --- |
| **Order** | **Information** |
| 1 | Category |
| 2 | HE Action |
| 3 | Quiet Time Period |

The Category field is defined in Table 9-47 (Category values).

The HE Action field is defined in Table 9-421z (HE Action field values).

The Quiet Time Period is always present in the frame. The presence and contents of the Quiet Time Setup field, Quiet Time Request field, and Quiet Time Response field are dependent on the values of the control field of Quiet Time Period field.

***TGax Editor: Modify 9.4.2. 223 as the following:***

**9.4.2.223 Quiet Time Period Element**

Quiet Time Period Action frame formats are defined to support Quiet Time Period functionality for STA-to-STA operation. A Quiet Time Control field, in the octet immediately after the Quiet Time Period field, specify the type of actions of the Quiet Time Period action frame. The first two-bits defines the value and referred to as Quiet Time Period Subtype field. The remaining 6 bits are reseved.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element ID | Length | Element ID Extension | Control |  |

The values of the Quiet Time Period Control field in each frame format within the Quiet Time Period Action frame are defined in Table 9-xxx (Quiet Time Period Control field).

**Table 9-421ab—values of** the Quiet Time Period Subtype f**ield**

|  |  |
| --- | --- |
| **Value** | **Meaning** |
| 0 | Quiet Time Period Setup |
| 1 | Quiet Time Period Request |
| 2 | Quiet Time Period Response |
| 3-255 | Reserved |

**9.4.2.223.1 Quiet Time Period Setup Element**

The Quiet Time Period Setup element defines a period for an STA-to-STA operation (see 11.47 (Quieting HE STAs in an HE BSS)). This quiet time period may be used to improve the probability of channel access for HE STAs participating in the STA-2-STA operation.

The Quiet Time Period Setup element is shown Figure 9-589cz (Quiet Time Period Setup element).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element ID | Length | Element ID Extension | Quiet Time  subtype | Quiet Period Duration | Vendor Specific Service Identifier |

**Figure 9-589cz—Quiet Time Period Setup element**

The Element ID and Length fields are defined in 9.4.2.1 (General).

The Quiet Time Period Subtype field values is 0 for Quiet Time period Setup frame.

The Quiet Duration field is set to duration, expressed in TUs, no larger than the value indicated in the Quiet Period Duration field of the Quiet Time Period Request element sent by the requester HE STA.

The Vendor Specific Service ID field indicates a specified operation, and the HE STA supporting it can transmit frames. The Vendor Specific Service ID field contains a public unique identifier assigned by the IEEE.

**9.4.2.223.2 Quiet Time Period Request element**

The Quiet Time Period Request element defines a periodic sequence of quiet periods that the requester HE STA requests the responder AP to schedule. The format of the Quiet Time Period Request element is shown in Figure 9-589da (Quiet Time Period Request element).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element ID | Length | Element ID Extension | Quiet Time Period Subtype | Dialog Token | Quiet Period Offset | Quiet Period Duration | Quiet Period Interval Repetition Count | Vender Specific Service Identifier |

**Figure 9-589da—Quiet Time Period Request element**

The Element ID and Length fields are defined in 9.4.2.1 (General).

The Quiet Time Period sutype field values is 1 for Quiet Time period Request frame.

The Dialog Token field is used to identify the Quiet Time Period request and response dialog.

The Quiet Period Offset field is set to the offset of the start of the first quiet period from the Quiet Time Period Request frame that contains this element, expressed in TUs. The reference time is the start of the pre-amble of the PPDU that contains this element.

The Quiet Period Interval field is set to the spacing between the start of two consecutive quiet time periods, expressed in TUs.

The Quiet Duration field is set to duration of the Quiet Period, expressed in TUs.

The Repetition Count field is set to the number of requested quiet periods.

The Vendor Specific Service Identifier field indicates a specified operation, and the HE STA supporting it can transmit frames. The Vendor Specific Service Identifier field contains a public unique identifier assigned by the IEEE.

**9.4.2.223.3 Quiet Time Period Response element**

The Quiet Period Response element defines the feedback information from the AP that received the Quiet Period Request element. The format of the Quiet Period Response element is shown in Figure 9-589db (Quiet Time Period Response element).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element ID | Length | Element ID Extension | Quiet Time Period Subtype | Dialog Token | Quiet Period Offset | Quiet Period Duration | Quiet Period Interval | Repetition Count | Vender Specific Service Identifier | Status Code |

**Figure 9-589db—Quiet Time Period Response element**

The Element ID and Length fields are defined in 9.4.2.1 (General).

The Quiet Time Period sutype field values is 2 for Quiet Time period Response frame.

The Dialog Token field is used to identify the Quiet Time Period request and response dialog.

The Quiet Period Offset field is set to the offset of the start of the first quiet period from the Quiet Time Period Request frame that contains this element, expressed in TUs. The reference time is the start of the preamble of the PPDU that contains this element.

The Quiet Period Interval field is set to the spacing between the start of two consecutive quiet time periods, expressed in TUs.

The Quiet Duration field is set to duration of the Quiet Period, expressed in TUs.

The Repetition Count field is set to the number of requested quiet periods.

The Vendor Specific Service ID field indicates a specified operation, and the HE STA supporting it can transmit frames. The Vendor Specific Service ID field contains a public unique identifier assigned by the IEEE.

The Status Code field is used in a response Management frame to indicate the success or failure of a requested operation.