IEEE P802.11
Wireless LANs

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| Resolutions to CIDs in clause 27.5.3.x |
| Date: March 6, 2018 |
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Abstract

This submission proposes resolutions for following CID received for TGax LB230 (10):

11096, 14109, 13281, 13970, 12608, 13972, 12499, 11313, 12504, 11315

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** | **Pg / Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 11096 | Adrian Stephens | 244.07 | 27.5.3.1 | " Non-AP HE STAs shall attempt to transmit" - how does "shall attempt" differ from "shall"? | Remove the word "attempt", or define what comprises an attempt. | **Revised**Agree with the comment that ‘attempt’ sounds vague. There are occasions when a STA can make an attempt to respond to a Trigger frame but abort for a variety of reasons (such as CS Required was 1 and the medium was sensed to be busy). Revised the sentence to clarify that the STA shall follow the rules to transmit an HE TB PPDU.TGax editor, please make changes as shown in document 11-18/0546r0 |
| 14109 | Yuichi Morioka | 244.31 | 27.5.3.1 | Trigger frame and UMRS Control field; why define two mechanism that does the same thing? | Remove mention of UMRS Control field as it achieves the same goal as a trigger frame. | **Reject**Each mechanism has its own purpose and are needed. UMRS mechanism enables an AP to solicit immediate response to the frame carrying the field. Further, it permits an AP to schedule multiple STAs simultaneously when the frames are carried in a DL MU PPDU. Trigger frame on the other hand allows an AP to schedule one or more STAs to simultaneously (MU) UL in response to the TF. |
| 13281 | Robert Stacey | 244.46 | 27.5.3.1 | This statement is inadequate; a STA can't arbitrarily meet class A or class B requirements (per transmission for example). If a STA indicates that it is class A then it shall meet the class A requirements. Otherwise it meets the class B requirements. | Change to read "If an HE STA indicates Class A in the Device Class subfield of the HE PHY Capabilities Information field of the HE Capabilities element then the HE TB PPDU transmitted by the STA shall meet the class A requirements in 28.3.14. Otherwise, the HE TB PPDU transmitted by the STA shall meet the class B requirements in 28.3.14." | **Accept**Agree with the comment.TGax editor, please make changes as shown in document 11-18/0546r0 |
| 13970 | Youhan Kim | 245.59 | 27.5.3.2.1 | If the AP has not seen an OBSS which cannot tolerate 26-tone RU within certain amount of time, then the AP should be allowed to use 26-tone RU again. | Change "if the AP has received at least one Beacon frame or Probe Response frame in which" to "if the AP has received at least one Beacon frame or Probe Response frame within the past dot11ObssNbRuToleranceTime minutes in which". Also add MIB to define dot11ObssNbRuToleranceTime. | **Revised**Agree with the comment that a time value needs to be specified. Added a new MIB variable to indicate the time period within which the AP/STA should have received a beacon from an OBSS AP indicating its tolerance to transmissions in a narrow band RU.TGax editor, please make changes as shown in document 11-18/0546r0 |
| 12608 | Mark RISON | 245.59 | 27.5.3.2.1 | "if the AP has received at least one Beacon frame or Probe Response frame in which any of the following are true" -- there needs to be some kind of time limit, otherwise a Beacon frame received three years ago would count | Add "within 32 beacon intervals, as indicated in the frame" before "in which any" in the cited text | **Revised**Agree with the comment.Please see resolution to CID 13970TGax editor, please make changes as shown in document 11-18/0546r0 |
| 13972 | Youhan Kim | 248.38 | 27.5.3.3 | If the non-AP STA has not seen an OBSS which cannot tolerate 26-tone RU within certain amount of time, then the STA should be allowed to use 26-tone RU again. | Change "received at least one Beacon frame or Probe Response frame in which" to "received at least one Beacon frame or Probe Response frame within the past dot11ObssNbRuToleranceTime minutes in which". Also add MIB to define dot11ObssNbRuToleranceTime. | **Revised**Agree with the comment.Please see resolution to CID 13970TGax editor, please make changes as shown in document 11-18/0546r0 |
| 12499 | Liwen Chu | 246.24 | 27.5.3.2 | MinTrigProcTime is not defined. | Fix the issue mentioned in comment. | **Revised**Agree with the comment that the reference to definition was not clearly specified in this section. Doc 11-18/369 has fixed this as a resolution to CID 11010.TGax editor, no further changes are needed |
| 11313 | Alfred Asterjadhi | 247.00 | 27.5.3.2.2 | A user info field is addressed to one STA. Replace STAs with STA. Also it is obvious the UMRS Control is carried in HE variant etc. So remove "in an HE variant HT Control field" | as in comment. | **Accept**Agree with the comment.TGax editor, please make changes as shown in document 11-18/0546r0 |
| 12504 | Liwen Chu | 247.27 | 27.5.3.2 | the Use Info fields with 2046 in AID12 shall appear after the User Info fields with AID12 values other than 2046 and before User Info fields with 4095 if User Info fields with AID12 4095 exist. | Fix the issue mentioned in comment. | **Revised**Agree with the comment. The proposed change was added as a resolution to CIDs 12226 and 13716 and appears in D2.2TGax editor, no further changes are needed |
| 11315 | Alfred Asterjadhi | 248.01 | 27.5.3.2.3 | This paragraph is not related to the settings of the fields of the Trigger frame but rather of what can carry the TF. As such it belongs to the general section. | Move the paragraph to 27.5.3.2.1. | **Accept**Agree with the commentTGax editor, please make changes as shown in document 11-18/0546r0 |

* UL MU operation
* General

***TGax Editor: Please modify the 1st paragraph of this section as follows (11ax D2.2, P255L23):***

UL MU operation allows an AP to solicit simultaneous immediate response frames from one or more non-AP HE STAs. Non-AP HE STAs shall [11096]follow the rules specified in this subclause to transmit their response frames using the HE TB PPDU format except when the Trigger frame is of type MU-RTS, in which case the response (CTS) is sent in a non-HT PPDU format (see 27.2.5 (MU-RTS/CTS procedure)).

***TGax Editor: Please modify the 8th paragraph of this section as follows (11ax D2.2, P255L64):***

[13281]If an HE STA indicates Class A in the Device Class subfield of the HE PHY Capabilities Information field of the HE Capabilities element then the HE TB PPDU transmitted by the STA shall meet the class A requirements in 28.3.14. Otherwise, the HE TB PPDU transmitted by the STA shall meet the class B requirements in 28.3.14.

* Rules for soliciting UL MU frames
* General

***TGax Editor: Please modify the 7th paragraph of this section as follows (11ax D2.2, P257L8):***

An AP operating in an operating class for which the behavior limits set listed in Annex E includes the DFS\_50\_100\_Behavior shall not transmit a Trigger frame that contains at least one User Info field whose RU Allocation subfield indicates a 26-tone RU or a frame with a UMRS Control subfield whose RU Allocation subfield indicates a 26-tone RU if the AP has received at least one Beacon frame [13970, 12608, 13972]within the past dot11ObssNbRuToleranceTime in which any of the following are true:

* The Extended Capabilities element is not present.
* The OBSS Narrow Bandwidth RU in UL OFDMA Tolerance Support bit in the Extended Capabilities element is not present.
* The OBSS Narrow Bandwidth RU in UL OFDMA Tolerance Support bit in the Extended Capabilities element is 0.
* **STA behavior for UL MU operation**

***TGax Editor: Please modify the 3rd paragraph of this section as follows:***

***Please note, this paragraph was modified in doc 11-18/367r1 – please apply the changes to modified text***

A STA shall not transmit an HE TB PPDU when all the following conditions are satisfied:

* The STA is operating in an operating class for which the behavior limits set listed in Annex E includes the DFS\_50\_100\_Behavior (see Table E-1)
* The HE TB PPDU would be in response to one of the following:
	+ a Trigger frame containing a User Info field with AID12 subfield carrying the 12 LSBs of the AID of the STA
	+ a frame with a UMRS Control subfield that is addressed to the STA
	+ a Trigger frame allocating at least one RA-RU
* the RU is a 26-tone RU
* when the STA has received at least one Beacon frame [13970, 12608, 13972]within the past dot11ObssNbRuToleranceTime, from an AP with whom the STA is not associated with, in which any of the following are true:
	+ The Extended Capabilities element is not present.
	+ The OBSS Narrow Bandwidth RU in UL OFDMA Tolerance Support bit in the Extended Capabilities element is not present.
	+ The value of the OBSS Narrow Bandwidth RU in UL OFDMA Tolerance Support bit in the Extended Capabilities element is 0.
* General

***TGax Editor: Please add the following paragraph (moved from 27.5.3.2.3) at the end of this section:***

[11315]

* Allowed settings of the Trigger frame fields and UMRS Control subfield

***TGax Editor: Please modify the 7th paragraph of this section as follows (11ax D2.2, P258L60):***

[11313]An AP shall not set any subfields of the User Info field of a Trigger frame to a value that is not supported by the recipient STA of the User Info field. An AP shall not set any subfields of a UMRS Control subfield to a value that is not supported by the recipient STAs of the UMRS Control subfield. When an RU is allocated to only one STA the Starting Spatial Stream subfield for that STA shall be set to 0.

***TGax Editor: Please delete (and move) the 14th paragraph of this section as follows:***

***Please note, this paragraph is moved to section 27.5.3.2.1***

[11315]

* MIB Detail

[13970, 12608, 13972]

***TGax Editor: Please make the following entry to this section:***

Dot11HEStationConfigEntry ::=

 SEQUENCE {

 dot11HEULMUResponseSchedulingOptionImplemented TruthValue,

 dot11ULMUMIMOOptionImplemented TruthValue,

 dot11OFDMARandomAccessOptionImplemented TruthValue,

 dot11HEControlFieldOptionImplemented TruthValue,

 dot11OMIOptionImplemented TruthValue,

 dot11HEMCSFeedbackOptionImplemented INTEGER,

 dot11HEDynamicFragmentationLevel INTEGER,

 dot11AMPDUwithMultipleTIDOptionImplemented TruthValue,

 dot11MPDUAskedforAckInMultiTIDAMPDU TruthValue,

 dot11TXOPDurationRTSThreshold Unsigned32,

 dot11PPEThresholdsRequired TruthValue,

 dot11IntraPPDUPowerSaveOptionActivated TruthValue,

 dot11AMSDUFragmentationOptionImplemented TruthValue,

 dot11BSSColorCollisionAPPeriod Unsigned32,

 dot11BSSColorCollisionSTAPeriod Unsigned32,

 dot11AutonomousBSSColorCollisionReportingImplemented TruthValue,

 dot11HESRPOptionImplemented TruthValue,

 dot11HEBSRControlImplemented TruthValue,

 dot11HEUPHControlActivated TruthValue,

 dot11HEBQRControlImplemented TruthValue,

 dot11HECASControlImplemented TruthValue,

 dot11PartialBSSColorImplemented TruthValue,

 dot11ObssNbRuToleranceTime Unsigned32

 }

***TGax Editor: Please add a new entry in this section as follows:***

dot11ObssNbRuToleranceTime OBJECT-TYPE

 SYNTAX Unsigned32 (300..3600)

 UNITS "seconds"

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The attribute indicates the time in seconds when the last Beacon frame carrying Narrow Band Tolerance indication from an OBSS AP is received. The default value of this variable is 30mins and the maximum is 1 hr."

 DEFVAL { 1800 }

 ::= { dot11HEStationConfigEntry 23}