IEEE P802.11  
Wireless LANs

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| UORA Misc | | | | |
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Abstract

Addressing several CIDs from TGax LB238 on D4.0 as follows:

20512 21131 21132 21129

**REVISION NOTES:**

**R0**:

Initial

**END OF REVISION NOTES**

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.***

**CIDs**

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| 20512 | Mark Rison | 26.5.5.5 | 347.15 | "An AP that receives an Authentication frame within an RA-RU should schedule for transmission at a time no less than 3 TUs and no greater than 5 TUs subsequent to the transmission of the Authentication frame that is a response to that reception, a Trigger frame that allocates one or more RA-RUs for unassociated STAs." is not clear | After the cited text at the referenced location insert a "NOTE---This Trigger frame allows the unassociated STA to transmit a further Authentication frame or an Association Request frame." | Revise - TGax editor to make changes as shown in 11-19/0917r0 that are marked with CID 20512 which generally agree with the commenter’s suggestion. |
| 21131 | Pascal VIGER | 26.5.5.5 | 347.15 | no less than 3 TUs and no greater than 5 TUs. What are these magics numbers ? Not providing any motivation makes thinking this is relying on implementation dependent issues. | Please provide an explanation note, or remove these magic numbers. | Reject – the numbers are intended to align with common industry accepted values for the timeout of an association request exchange that is perceived to ensure a latency that avoids excessive human anxiety during connection establishment and the cited values are only recommendations, exressed as such through the use of the verb “should”. |
| 21132 | Pascal VIGER | 26.5.5.5 | 347.21 | Why at least 2 RA-RUs for unassociated STAs, and not 3 RA-Rus, or 4 etc ? Remove this paragraph based on magic numbers. Moreover, this newly introduced sentence conflicts with text of line 50 same page ("Trigger frames with at least one RA-RU for unassociated non-AP STAs"). | Remove the text. The number of RA-RUs shall be kept implementation dependent at AP. AP must be able to select any convenient number of RA-RUs at the date of emission of the TF. | Reject - the text provides for a minimum which is above zero in order to ensure that at least some non-zero amount of RA-RU are available – the text cited as being contradictory is not actually contradictory, because each instance mentions a minimum of “at least” and it is possible that for a single TWT SP, there might be more than one Trigger that has RA-RU assignments, and only one of those triggers is required to include at least 2, and others may then include just one, and the cited text refers to behavior that is required for any Trigger that meets the at least one condition – i.e. there is not a blanket requirement that all triggers include at least 2, but a minimal requirement that at least one trigger includes at least 2 RA-RU |
| 21129 | Pascal VIGER | 26.5.5.2 | 344.01 | Why is there a difference between associated stations and unassociated stations, by setting a 'shall' or a 'may' ? Note that a STA is still allowed not to contend if it does not have pending frames for the AP. So the difference is useless. | Remove the difference. Either by removing the 'may' for unassociated STAs and set a 'shall'; or by using a common paragraph. | Reject – the distinction is necessary because an associated STA that does not use RA-RUs for associated STAs is making a choice to not use the slots when offered an opportunity and therefore, must make the accounting for the presence of those opportunities, whereas an unassociated STA might not have any interest in using the slots of some random BSS with which it has no current association, and therefore, it would be incorrect to allow the unassociated STA to decrement an RA backoff even though it had no interest in using the slots of various BSSs within earshot. One could craft language to describe the “desire” of an unassociated STA to communicate with a particular AP in order to determine eligble slots, but that type of anthropomorphic expression is considered unfashionable within the standard. |

**Discussion:**

**CID 21131, 21132**

**26.8.3 Broadcast TWT operation**

**26.8.3.1 General**

The TWT scheduling AP may include a broadcast TWT element in FILS Discovery frames and in broadcast Probe Response frames to indicate the TWT SPs during which the AP intends to schedule for transmission Trigger frames with at least one RU with the AID12 subfield set to 2045. The broadcast TWT element shall carry only a broadcast TWT parameter set with the Broadcast TWT Recommendation subfield set to 2, the Trigger subfield set to 1 and the Broadcast TWT ID subfield set to 0. The AP transmits broadcast Probe Response frames if it has dot11FILSOmitReplicateProbeResponses equal to true.

**CID 21129**

**26.5.5.2 Eligible RA-RUs**

A non-AP STA that is the intended receiver of a User Info field in a Trigger frame (i.e., the AID12 subfield equal to the 12 LSBs of the AID of the non-AP STA) shall not contend for an RA-RU that is indicated by a Trigger frame contained in the same PPDU and shall not decrement its OBO counter.

A non-AP STA shall consider an RU as an eligible RA-RU if it supports all the transmit parameters indicated in the Common Info field and in the User Info field allocating that RU (as described in 26.5.3.3 (Non- AP STA behavior for UL MU operation)), the non-AP STA is an associated STA, the TA field of the Trigger frame is set to the BSSID of the associated BSS and the RA-RU is allocated for associated STAs.

A non-AP STA may consider an RU as an eligible RA-RU if it supports all the transmit parameters indicated in the Common Info field and in the User Info field allocating that RU (as described in 26.5.3.3 (Non-AP STA behavior for UL MU operation)), the non-AP STA is not associated with the BSS and the RA-RU is allocated for unassociated STAs.

**Proposed Changes to TGax D4.1:**

***TGax editor: within subclause 26.5.4.5 Additional considerations for unassociated STAs, change the following text as shown:***

**26.5.4.5 Additional considerations for unassociated STAs**

An AP that receives an Authentication frame within an RA-RU should schedule for transmission at a time no less than 3 TUs and no greater than 5 TUs subsequent to the transmission of the Authentication frame that is a response to that reception, a Trigger frame that allocates one or more RA-RUs for unassociated STAs.

NOTE – This trigger frame allows unassociated STAs to transmit a further Authentication frame or a (Re)Association Request frame. **(#20512)**

An AP operating a BSS with a width of 80 MHz or greater and transmitting a Trigger frame that allocates one or more RA-RUs for unassociated STAs shall include at least 2 RA-RUs for unassociated STAs for at least one transmission of such a Trigger frame within a Broadcast TWT SP that meets the conditions described above.

An unassociated non-AP STA that supports the UORA and TWT procedure may begin listening for Trigger frames at the start of a particular broadcast TWT SP after receiving a Beacon frame, a broadcast Probe Response frame or a FILS Discovery frame containing a TWT element indicating that the particular TWT SP includes at least one Trigger frame with at least one RA-RU for unassociated non-AP STAs (see 26.8.3.1 (General)). **(#20512)**

**References:**