IEEE P802.11
Wireless LANs

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| LB 200 cluase 9.20.5.5 comment resolution |
| Date: 2014-02-26 |
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Abstract

This submission proposes comment resolutions of the clause 9.20.5.5 from TGah Draft 1.0.

* CIDs: 1351, 1352, 1353, 2149, 2263, 2264, 2265, 2266, 2910

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 TGah Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGah Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGah Editor: Editing instructions preceded by “TGah Editor” are instructions to the TGah editor to modify existing material in the TGah draft. As a result of adopting the changes, the TGah editor will execute the instructions rather than copy them to the TGah Draft.***

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1351 | 174.54 | 9.20.5.5 | It is mentioned that the first backoff is restored when RAW finishes. But what happens to the second backoff state when the the RAW finishes; Is it going to be restored in the next allowed RAW? | Clarify what happens to the second backoff when RAW ends. It seems it'd be fair to keep the second backoff value and restore it in the next occurance of the assigned RAW. | Revised- See the discussion shown in 11-14-0235r1 under the heading for CID 1351, 1353.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 1351, 1353. |
| 1352 | 174.54 | 9.20.5.5 | The first and second backoff are used with upper/lower case letters in this and subsequent paragraphs (e.g. L54 with captalized letters). | Use either First/Second Backoff or first/second backoff throught the spec. | Revised- Agree in principle. Change the First/Second Backoff to the first/second backoff (lower case). |
| 1353 | 174.54 | 9.20.5.5 | What happens if a STA is assigned to multiple RAWs; is a unique second backoff is used for all the RAWs, or depending on the group of STAs a separate second backoff is used? | If there is a use case for a STA to belong to multiple groups of STA (where each get a RAW, perhaps with varying period) make it clear whether a separate second backoff is used for each RAW or not. | Revised- See the discussion shown in 11-14-0235r1 under the heading for CID 1351, 1353.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 1351, 1353. |
| 2149 | 175.60 | 9.20.5.5 | The description "If a STA is participating in the RAW, STA invokes a new backoff function using the RAW backoff parameters. "seems to indicate there is another set of backoff parameter--RAW backoff parameter.But the "RAW backoff paramter" is never defined all over the spec. | Clarify "RAW backoff parameter" in the spec. | Revised- See the discussion shown in 11-14-0235r1 under the heading for CID 2149, 2264.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 2149, 2264. |
| 2263 | 175.57 | 9.20.5.5 | The sentence in line 57 page 175 is incorrect, as it could be the case that the STA does not need to access the channel when the previously stored backoff function state is empty. In this case, why does the STA need to invoke the backoff procedure at the end of the RAW? | Delete the sentence in line 57 page 175, i.e.,If the previously stored backoff function state is empty, the STA invokes a backoff procedure. | Rejected- See the discussion shown in 11-14-0235r1 under the heading for CID 2263. |
| 2264 | 175.60 | 9.20.5.5 | What're the RAW backoff parameters? Searched entire 11ah/D1.0 spec, the only occurrence, i.e., in line 60 page 175. | Please clarify what're the RAW backoff parameters. | Revised- See the discussion shown in 11-14-0235r1 under the heading for CID 2149, 2264.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 2149, 2264. |
| 2265 | 175.64 | 9.20.5.5 | The two "may"s in the paragraph in line 64 page 175 are problematic, as they make the RAW backoff procedure ambiguity. | Change the two occurrences of "may" to "shall" in the paragraph in line 64 page 175. | Revised – Agree with the comment.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 2265. |
| 2266 | 175.60 | 9.20.5.5 | How does a STA with RAW slot assignment access the channel at its assigned RAW slot? Starting with a backoff procedure due to the RAW slot with possible mutiple assigned STAs? Or just wait for DIFS with CCA? | Please clarify. | Rejected- The title of this subclause is “EDCA backoff procedure in RAW”. It is clear that the backoff procedure is used for accessing the channel. |
| 2910 | 175.64 | 9.20.5.5 | In case Cross Slot Boundary is allowed, it is not clear if the STA can invoke new backoff procedure after its slot. It needs further explanation on this. | As mentioned in the Comment. | Revised- See the discussion shown in 11-14-0235r1 under the heading for CID 2910.TGah editor to make changes shown in 11-14-0235r1 under the heading for CID 2910. |

**Discussion:**

**CID 1351, 1353**

The second backoff function state is disregarded according the Cross Slot Boundary subfield.

If the Cross Slot Boundary subfield is set to 0, a STA disregards the second backoff function state after its assigned slots. If the Cross Slot Boundary subfield is set to 1, a STA disregard s the second backoff function state after the RAW.

**CID 2149, 2264**

The RAW backoff parameter is not defined in the draft. A simple solution is that the EDCA parameter set element in the Beacon frame transmitted by the AP indicates the access category information for accessing the WM in the RAW.

**CID 2263**

In 9.3.4.3,

“A backoff procedure shall be performed immediately after the end of every transmission with the More Fragments bit equal to 0 of an MPDU of type Data, Management, or Control with subtype PS-Poll, even if no additional transmissions are currently queued.”

In the same logic, after the end of every transmission in the RAW, the STA invokes a backoff procedure.

**CID 2910**

Cross Slot Boundary should be changed to a related signaling name, i.e., Cross Slot Boundary subfield. And, the backoff procedures according to Cross Slot Boundary subfield should be explicitly described.

**Propose:**

Revised for CID 1351, 1352, 1353, 2149, 2264, 2265, 2910, per discussion and editing instructions in 11-14/0235r1.

***TGah editor: Modify the sub-clause 9.20.5.5 as the following:***

* EDCA backoff procedure in RAW

An illustration of EDCA backoff procedure in RAW is shown in Figure 9-24d (Backoff procedure for restricted channel access control).

For supporting the restricted channel access control based on EDCA, a STA maintains two backoff function states. First backoff function state is used in outside RAW and second backoff function state is used in inside RAW.

Each STA performing EDCA access suspends an operation of its EDCAF ~~its backoff~~ at the start of each RAW and stores the values of the backoff counter, CW[AC], QSRC[AC] and QLRC[AC] ~~the backoff state~~ as the first backoff function state. ~~First Backoff State(#367) and stores the backoff function state.~~ At the end of the RAW, the stored first backoff function state ~~First Backoff State~~ is restored and an operation of the EDCAF is resumed.~~the backoff function resumes(#367).~~ If the previously stored first backoff function state is empty, the EDCAF of STA shall invoke ~~invokes~~ a backoff procedure~~.~~, even if no additional transmissions are currently queued.

If a STA is participating in the RAW and has a pending MPDU, the EDCAF of STA shall invoke ~~invokes~~ a new backoff procedure for accessing the WM in the RAW ~~function~~ using the access category indicated by the RAW AC subfield in an EDCA Parameter Set element. ~~the RAW backoff parameters.~~ The values of the backoff and CW[AC] used in the RAW is callsed the second backoff function state.

If the Cross Slot Boundary subfield in RAW Assignment field of the RPS element is set to 0, a STA shall ~~may~~ count down backoff only in its assigned slots within the RAW and disregard the second backoff function state after its assigned slots. ~~unless Cross Slot Boundary is allowed,~~ If the Cross Slot Boundary subfield in RAW Assignment field of the RPS element is set to 1, ~~in which case~~ the STA shall ~~may~~ continue to count down backoff after its assigned slots and disregard the second backoff function state after the RAW.

***TGah editor: Modify the sub-clause 8.4.2.28 as the following:***

* EDCA Parameter Set elem

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 | B1 B2 | B3 B4 | B5 ~~B3~~ B7 |
|  | Override | PS-Poll AC | RAW AC | Reserved |
| Bits:  | 1 | 2 | 2 |  3 ~~5~~ |
|  | * Control field
 |

The Override field is used by S1G APs to indicate to S1G STAs that this element overrides previously stored EDCA parameters as described in 9.2.4.2.

The PS-Poll AC field is used by S1G APs to inform the S1G STAs of the access category for sending a PS-Poll frame.

The RAW AC field is used by S1G APs to inform the S1G STAs of the access category for accessing the WM in the RAW as described in 9.20.5.5 (EDCA backoff procedure in RAW).