IEEE P802.11  
Wireless LANs

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| 802.11 REVmc Initial Sponsor ballot - Proposed resolutions for some SB0 power saving comments | | | | |
| Date: 2015-10-08 | | | | |
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|  |  |  |  |  |

**Abstract**

This document contains proposed resolutions for some of SB0 comments in the power saving group.

R0: CIDs: 5212, 5214, 5216, 5218

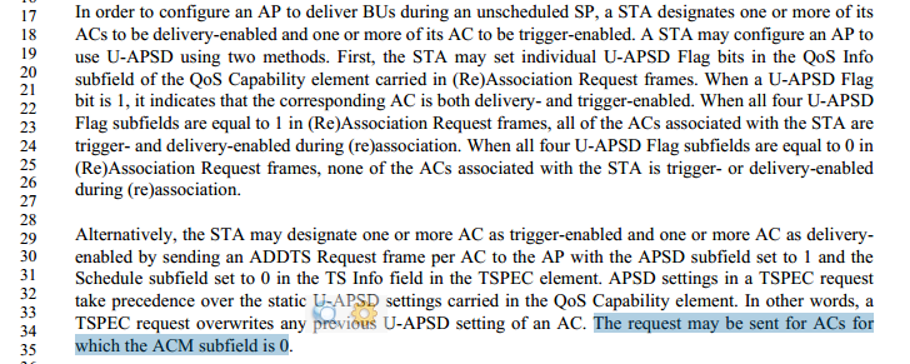
R1: corrected the format.

R2: adding CIDs: 5217, 5219, 5220, 5221 (?), 5501, 5211, 6246, 6816, 6427, 6462, 6468, 6473

| **CID** | **Page** | **Clause** | **Resn Status** | **Comment** | **Proposed Change** | **Resolution** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5212 | 1552.34 | 10.2.2.5.1 |  | "The request may be sent for ACs for  which the ACM subfield is 0." This statement is not really needed, but the converse one is. | Replace with: "The request may be sent for ACs for which the ACM subfield is 0; the request shall not be sent for ACs for which the ACM subfield is 1." |  | MAC |

**Discussion**

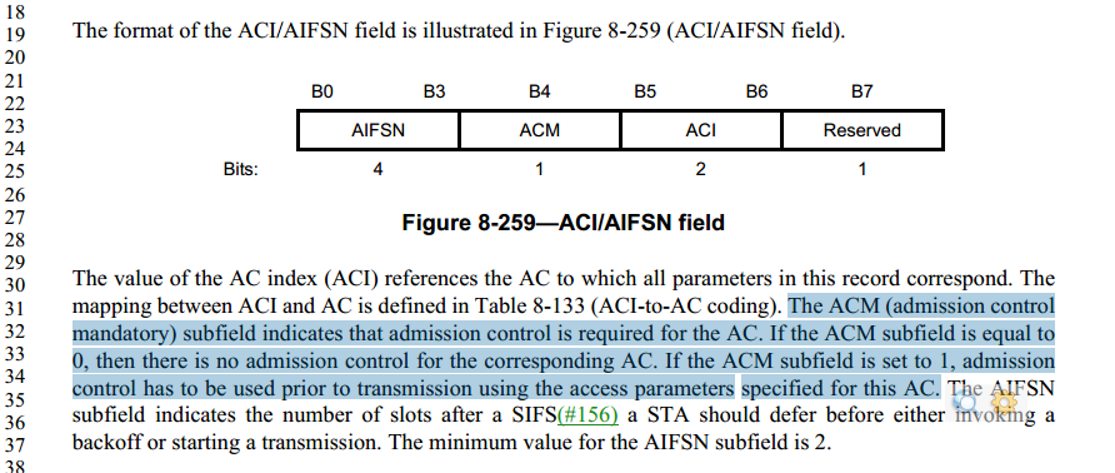
Context at 1552.34:



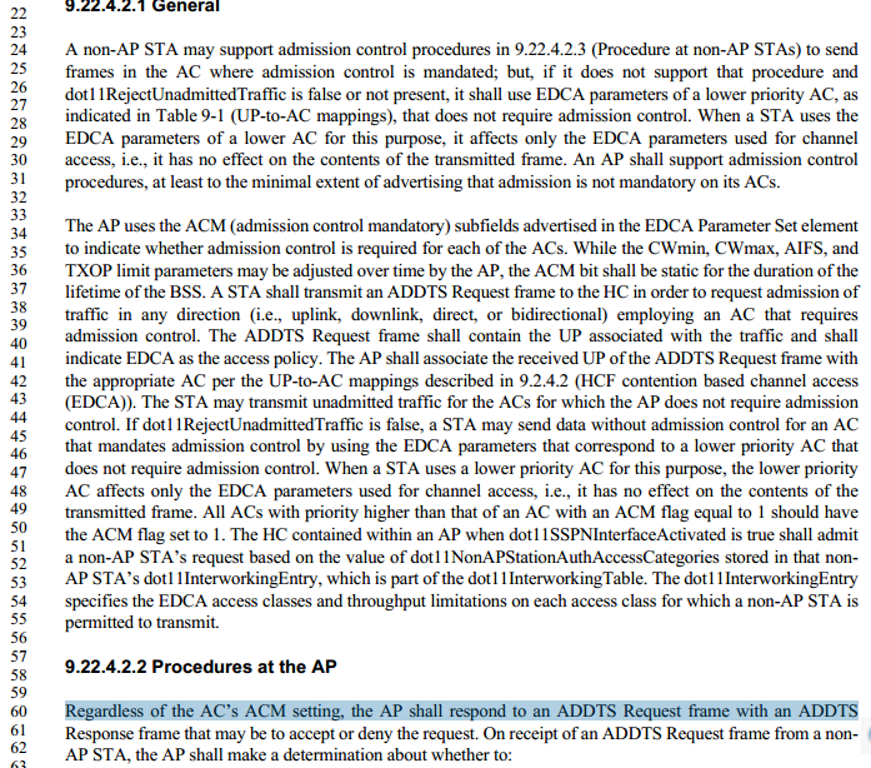
The cited sentence is nothing to do with the context. Agreed with the commenter that this statement is not really needed here.

However, the revised sentence suggested from the commenter is incorrect: **“…..** the request shall not be sent for ACs for which the ACM subfield is 1”.

How to send ADDTS request and relationship with ACM values are described in 8.4.2.28 EDCA Parameter Set element and 9.22.4 Admission Control at the HC. As an example, in 8.4.2.28 EDCA Parameter Set element



In 9.22.4.2.1 General



**Proposed resolution:**

Revised.

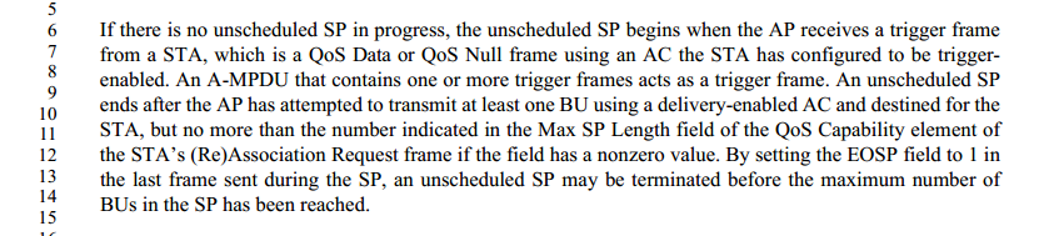
At 1552.34, remove the cited sentence “The request may be sent for ACs for which the ACM subfield is 0”.

At the end of 9.22.4.2.1, add a paragraph: “The ADDTS request may be sent for ACs for which the ACM subfield is 0.”

| **CID** | **Page** | **Clause** | **Resn Status** | **Comment** | **Proposed Change** | **Resolution** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5214 | 1552.10 | 10.2.2.5.1 |  | This paragraph does not acknowledge that the times at which the AP transmits during an unscheduled SP may be additionally constrained by the U-APSD coexistence mechanism. | Add a statement to this para somewhere: "The times at which an AP may transmit during an unscheduled SP might be constrained by the U-APSD Coexistence mechanism (see 10.2.2.5.2)." |  | MAC |

**Discussion**

Cited text:



Agree with commenter that adding a statement might be helpful.

**Proposed resolution:**

Revised.

At the end of cited paragraph, add "The times at which an AP may transmit during an unscheduled SP might be constrained by the U-APSD coexistence capability (see 10.2.2.5.2)."

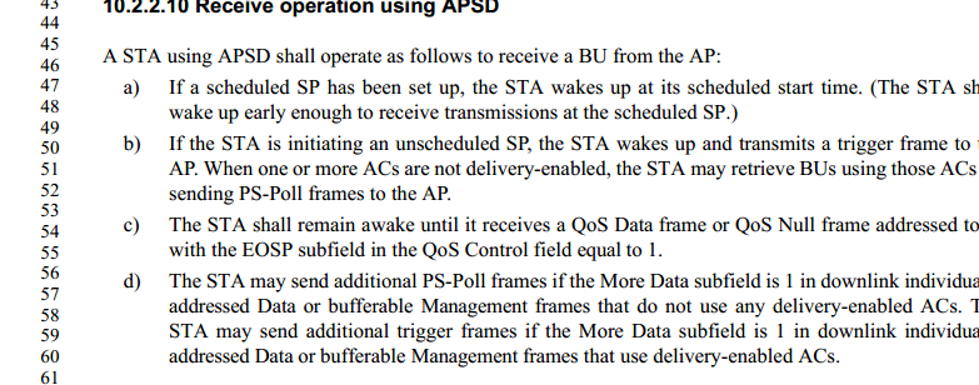
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| --- | --- | --- | --- | --- | --- | --- |
| 5218 | 1560.62 | 10.2.2.10 | This subclause doesn't acknowledge the U-APSD coexistence mechanism, which has a whole raft of rules about receive operation. | Add a sentence, "For receive operation using the U-APSD coexistence mechanism, also see 10.2.2.5.2." |  | MAC |

**Discussion**

Agree with commenter that adding a statement might be helpful.

However, I don’t think “also” is needed.

Cited clause:



**Proposed resolution:**

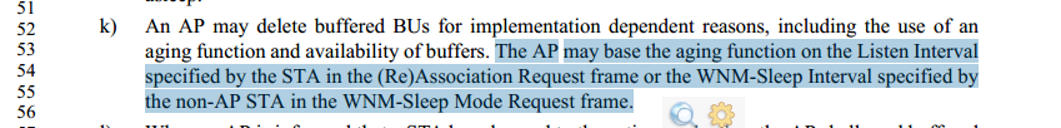
Revised.

At the end of cited clause 10.2.2.10, add a paragraph/sentence: "For receive operation using the U-APSD coexistence capability, see 10.2.2.5.2.”

| **CID** | **Page** | **Clause** | **Resn Status** | **Comment** | **Proposed Change** | **Resolution** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5216 | 1557.53 | 10.2.2.6 |  | "The APmay base the aging function on the Listen Interval  specified by the STA in the (Re)Association Request frame or the WNM-Sleep Interval specified by  the non-AP STA in the WNM-Sleep Mode Request frame." -- this statement is a subset of the previous may, and is therefore strictly unnecessary. | Reword: "The AP might base..." |  | MAC |

**Discussion**

Cited text:



Agree with commenter.

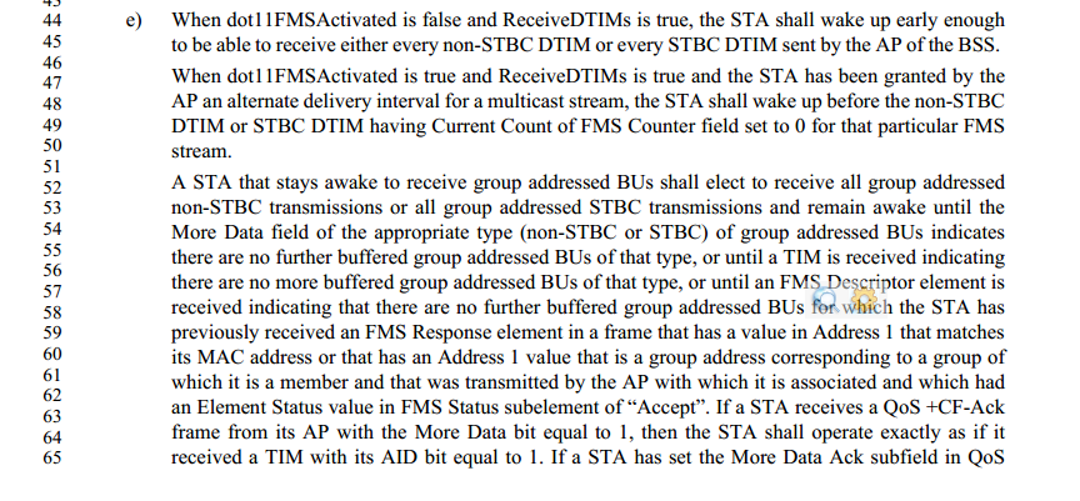
**Proposed resolution:**

Accept. At the cited location, replace “The AP may base …” with “The AP might base …”

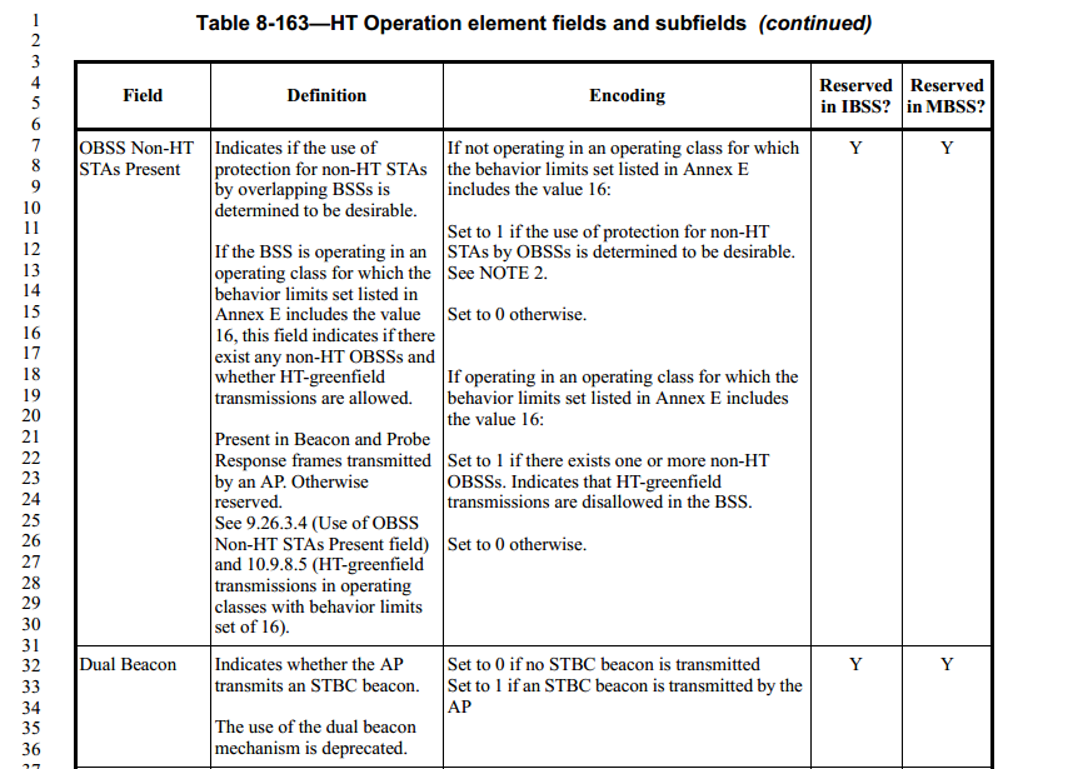
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| --- | --- | --- | --- | --- | --- | --- | --- |
| 5217 | 1559.52 | 10.2.2.8 |  | Dual beacon is deprecated. This para should acknowledge this. | Add to this para "The use of the dual beacon (i.e., transmission of both non-STBC and STBC Beacon frames) mechanism is deprecated." |  | MAC |

**Discussion**

Cited text:



The dual beacon deprecation is acknowledged in 8.4.2.56 HT Operation element, see:



There is no need to acknowledge the deprecation in every location in the spec.

**Proposed resolution:**

Reject. The deprecation is already acknowleged in 8.4.2.56

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 5219 | 1548.00 | 10.2 | I congratulate the WG on inventing the following unique power-saving mechanisms:  1. IBSS  2. Infrastructure PS-Poll  3. U-APSD  4. U-APSD with coexistence mechanism  5. S-APSD  6. TDLS  7. Mesh  8. PCP  9. FMS power save  10. WNM Sleep mode  11. VHT TXOP power save  12. Spatial multiplexing power save  I encourage the WG to create additional power-saving mechanisms. | Add several new power-saving mechanisms.  For example, during one beacon interval, a STA might save power by transmitting only bits containing zero, and transmit the one bits in the next beacon interval.  Those cleverer than I can see this is a fruitful field of endeavor. Be creative ... you know you want to. | MAC |

**Discussion**

**Proposed resolution:**

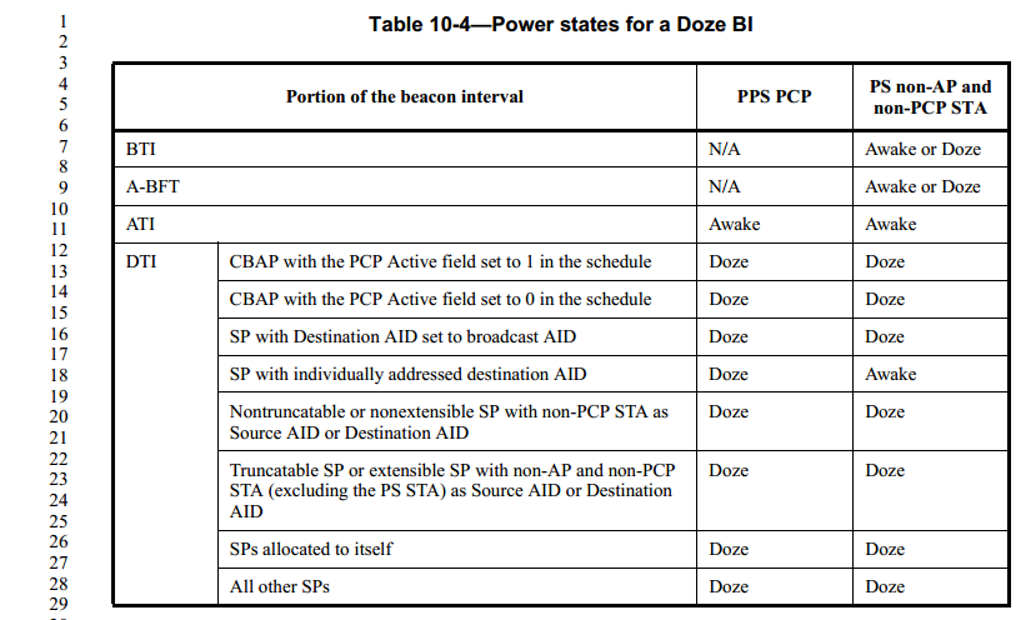
Reject.

The comment fails to identify a specific issue to be addressed. It fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 5220 | 1580.18 | 10.2.6.1 | To be consistent with the DTI components, add "BHI" in the leftmost column covering the first three non-header rows.    Ditto at 1581.07 | As in the comment. | MAC |

**Discussion**

**Cited text:**



Agree with comenter. BHI comprises BTI, A-BFI, and ATI.

**Proposed resolution:**

Accepted.

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 5221 | 1582.13 | 10.2.6.2.2 | There is a layer of meaning in this state machine that is obscure.    The leftmost top bubble "expands" to the state machine below it. But the rightmost bubble expands to one of the two state machines below it with transitions that are not shown. | Redraw the state machine so that all states are shown and all transitions identified clearly.  Make matching changes at 1585.02. | MAC |

**Discussion**

It is not clear how to redraw it. A submission is required for review.

Suggest assigning to the commenter.

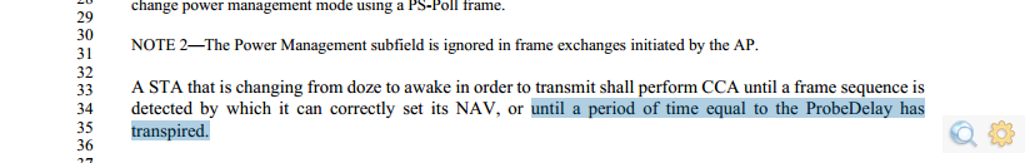
**Proposed resolution:** none**.**

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 5501 | 1550.34 | 10.2.2.2 | "Wait until the ProbeDelay time has expired": but there is no such variable in the MLME. The only value of ProbeDelay available is that from the most recent invocation by the SME of one of the three primitives: MLME-SCAN.request, MLME-JOIN.request, or MLME-START.request. In the current context (after the MLME-POWERMGT.request primitive has run) the appropriate primitive appears to be either the MLME-JOIN.request or the MLME-START.request, so the text needs to specify either of those as the source of the value of the ProbeDelay parameter. | Replace "Waiit until the ProbeDelay time has expired" with "Wait until the time indicated by the ProbeDelay parameter (from the most recent SME invocation of either the MLME-JOIN.request or the MLME-START.request) has expired" | MAC |

**Discussion**

I couldn’t find the quoted text at cited location 1550.34.

I guest the commenter may comment on “until a period of time equal to the ProbeDelay has transpired.”:



The commenter mentioned two primitives: MLME-JOIN and MLME-START. However, in the current context (after the MLME-POWERMGT.request primitive has run), I think the appropriate primitive appears to be the MLME-JOIN.request only, not MLME-Start.request. The MLME-Start.request is for “the MAC entity start a new BSS or become a member of an MBSS.”.

Therefore, only MLME-JOIN.request need to be cited.

**Proposed resolution:**

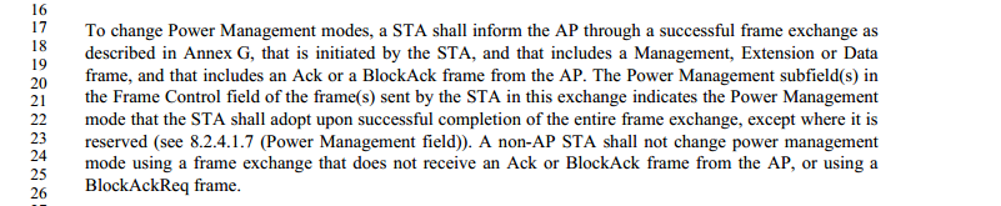
Revised.

At the cited location, change “until a period of time equal to the ProbeDelay has transpired " to “until a period of time equal to the ProbeDelay parameter (from the MLME-JOIN.request) has transpired.”

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 5211 | 1550.17 | 10.2.2.2 | "a STA shall inform the AP through a successful frame exchange" -- in an unlicensed band "shall do something successfully" is not a valid requirement for compliance | Reword in terms of what the STA shall do "transmit" and how it responds to both successful and unsuccessful outcomes of the attempted transmission. | MAC |

**Discussion**

Cited text:



The first sentence can be improved or simplified.

**Proposed resolution:**

Revised.

Change:

“To change Power Management modes, a STA shall inform the AP through a successful frame exchange as described in Annex G, that is initiated by the STA, and that includes a Management, Extension or Data frame, and that includes an Ack or a BlockAck frame from the AP.”

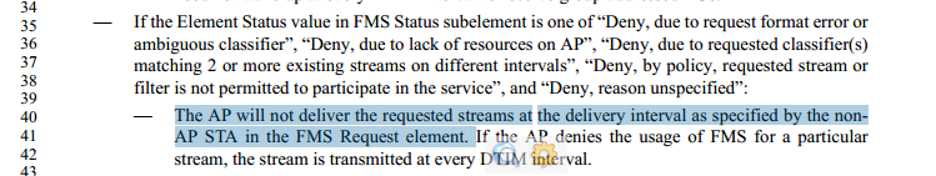
To :

“To change Power Management modes, a STA shall transmit a Management, Extension or Data frame to the AP and have received an Ack or a BlockAck frame from the AP.”

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 6246 | 1568.40 | 10.2.2.16.4 | It says "The AP will not deliver the requested streams at the delivery interval as specified by the non-AP STA in the FMS Request element" -- it will deliver them at a different delivery interval? Or not at all? | Clarify the subsequent AP behaviour | MAC |

**Discussion**

Cited text:



The subsequent AP behaviour is described in the second sentence: “If the AP denies the usage of FMS for a particular stream, the stream is transmitted at every DTIM interval.”.

Perhaps the second sentence can be improved.

**Proposed resolution:**

Revised.

Change “If the AP denies the usage of FMS for a particular stream, the stream is transmitted at every DTIM interval.” To “The AP will deliver the requested stream at every DTIM interval.”

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 6816 | 1548.00 | 10.2 | "10.2.2 Power management in a non-DMG infrastructure network" contains vast amounts of detail. "10.2.6 Power management in a PBSS and DMG infrastructure BSS" is much thinner. Is it really the case that the latter is complete for DMG infrastructure BSSes (e.g. it doesn't include any APSD stuff)? | Add any missing stuff for PBSSes and DMG ABSSes | MAC |

**Discussion**

**Proposed resolution:**

Reject.

The comment fails to identify a specific issue to be addressed. It fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 6427 | 1548.15 | 10.2.1 | Are FTM frames bufferable? This subclause suggests they are | Either state that a non-AP STA doing FTM needs to be in active mode during burst instances, or state that FTM frames are not bufferable | MAC |

**Discussion**

Have talked to some FTM folks, here is the feedback:

Non-AP STA doing FTM needs to be in Active mode. This, though not explicitly stated, is implicit in the protocol specification and is clear if you read the entire protocol specification. I am not sure what value it adds by stating it explicitly.

**Proposed resolution:**

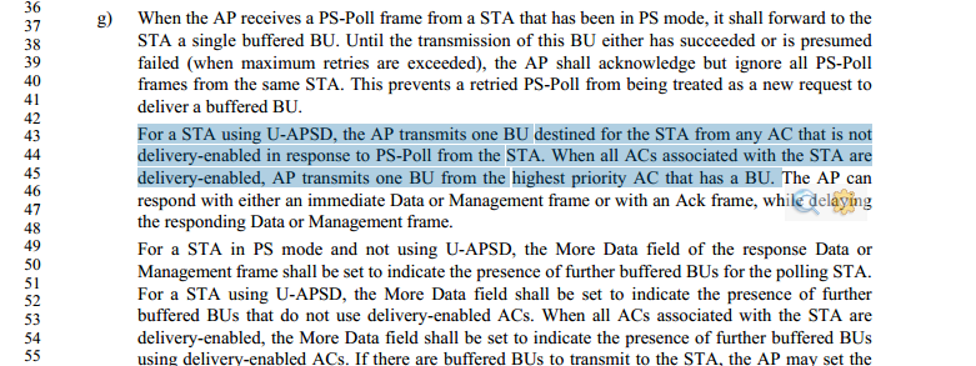
Rejected.

Non-AP STA doing FTM needs to be in Active mode. This, though not explicitly stated, is implicit in the protocol specification and is clear if you read the entire protocol specification.

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 6462 | 1556.43 | 10.2.2.6 | "For a STA using U-APSD, the AP transmits one BU destined for the STA from any AC that is not delivery-enabled in response to PS-Poll from the STA. When all ACs associated with the STA are delivery-enabled, AP transmits one BU from the highest priority AC that has a BU." -- in the first case it would be advisable if high-priority traffic were, like, prioritised | After the first sentence cited add "The AP should transmit the BU from the highest priority AC that is not delivery-enabled and that has a BU." | MAC |

**Discussion**

Cited text:



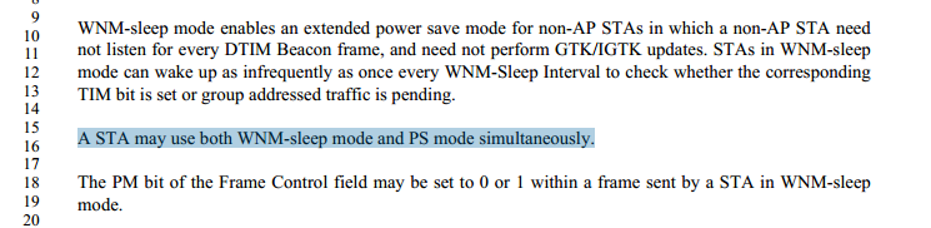
**Proposed resolution:**

Accepted.

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
| --- | --- | --- | --- | --- | --- |
| 6468 | 1549.15 | 10.2.2.1 | What does "A STA may use both WNM-sleep mode and PS mode simultaneously." mean? | Clarify, or demote to a NOTE | MAC |

**Discussion**

Cited text:



Don’t think we need additional clarification. Okay to change it to a note.

**Proposed resolution:**

Revised.

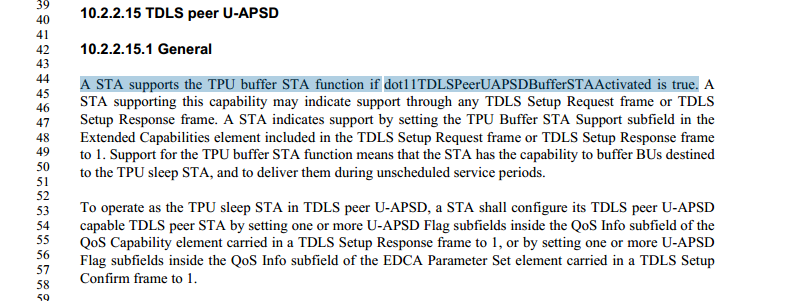
Change “A STA may use both WNM-sleep mode and PS mode simultaneously.” To “NOTE-- A STA may use both WNM-sleep mode and PS mode simultaneously.”

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Owning Ad-hoc** |
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| 6473 | 1564.42 | 10.2.2.15.1 | When TDLS is used without QoS, TPU cannot be used. | Add a sentence to that effect in 10.2.2.15.1 | MAC |

**Discussion**

If TDLS is used without QoS, the dot11TDLSPeerUAPSDBufferSTAActivated CANNOT be set to true.

I think the first sentence of the cited clause is sufficient.



**Proposed resolution:**

Rejected.