IEEE P802.11
Wireless LANs

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| Assorted CRs |
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Abstract

This document contains assorted comment resolutions for REVmd, addressing CIDs

1. 2099 2100 2111 2117 2248 2359 2394 2424 2425 2426
2. 2429 2430 2432 2433 2434 2474 2477 2478 2481 2520
3. 2521 2549 2610 2664 2666

The baseline for this document is Draft P802.11REVmd D2.0.

R5: Resolutions to CIDs 2474, 2477, 2478, 2481 agreed on 2019-08-21 TGmd ad-hoc session

R6: Resolutions to CIDs 2521, 2549, 2610, 2666 agreed on 2019-08-22 TGmd ad-hoc session

R11: Document limited to CIDs 2429, 2520, 2664

R12: Added back 2099, 2100 with revised resolution

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| **Identifiers** | **Comment** | **Proposed Change** | **Resolution** |
| 209910.3.31880.37 | (1) NOTE 2 is normative, and (2) Specified normative behavior does not apply to SP channel access in DMG case (de-assertion of CS does not apply). | Turn the NOTE into normative sentence. Also include the channel access schemes it applies to (or exclude those it doesn't apply to). |  Discussion: The cited note is "NOTE 2—After transmitting a PPDU containing an RDG, if the response is corrupted so that the state of the RDG/More PPDU subfield is unknown, the RD initiator of the RD exchange is not allowed to transmit after a SIFS. Transmission can occur a PIFS after deassertion of CS." NOTE 2 is indeed informative (not normative), as it’s an example of error recovery, but may give an impression of being normative. Further, we observe that there is no such thing as corrupted response (“… if the response is corrupted..”) as initiator wouldn’t even be able to tell who is sending the frame. We therefore propose to delete NOTE 2. Also agree that standard CS referred to in the text is not applicable to DMG SP channel access. ---- Resolution: Starting at 1904L9 in draft 2.4, revise the text as following b) Error recovery: For TXOPs, the RD initiator may transmit its next PPDU when the CS mechanism (see 10.3.2.1 (CS mechanism)) indicates that the medium is idle at the TxPIFS slot boundary (see Figure 10-26 (EDCA mechanism timing relationships)). For SPs, the RD initiator may transmit its next PPDU no sooner than PIFS following its last PPDU transmission. Transmission is a continuation of the current TXOP or SP.NOTE—Error recovery of the RDG mechanism is the responsibility of the RD initiator. |
| 210010.3.41882.1 | NOTE is normative. | Turn the NOTE into normative sentence. |  Discussion: The cited note is “NOTE—If the RD responder transmits a PPDU that expects a transmission by the RD initiator after SIFS and no such transmission is detected, the RD responder has to wait for either another RDG or its own TXOP or SP before it can retry the exchange.” NOTE is indeed informative (not normative), change “has to” to “needs to”. ---- Resolution: Starting at 1905L43 in draft 2.4, revise the text as following “NOTE—If the RD responder transmits a PPDU that expects a transmission by the RD initiator after SIFS and no such transmission is detected, the RD responder needs to wait for either another RDG or its own TXOP or SP before it can retry the exchange.”  |

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| **Identifiers** | **Comment** | **Proposed Change** | **Resolution** |
| 2429. | CID 1505 got rid of QLRC and QSRC, but did not touch QLDRC and QSDRC | Delete "QLDRC" and "QSDRC" throughout | Revised - agree with the comment. Make changes in 11-19-1195-04-000m-assorted-crs.docx under CID 2429, which delete the QLDRC and QSDRC, and which introduce an unsolicited frame retry count to govern discarding of DEI frames.The original QLDRC/QSDRC text appears to have blended together the frame retry counter and the STA retry counter. The proposed changes fix this.The proposed changes also add that the retry counters are reset when CW is reset.The proposed changes also remove the CW reset based on the QSDRC, as this reset will also impact non-DEI traffic, thereby causing unfairness to devices without DEI traffic. With this removal, the QSDRC counters were no longer needed, because the DEI frame discard is now governed by a frame retry counter.CID 2429, from Vienna minutes:3.5.5.2 The intent of the proposed change was acceptable, but the consequences of the changes needed to be addressed. The proposed resolution addresses those consequences.3.5.5.3 On Page 11, mark in yellow text that needs to be checked offline to ensure accuracy.3.5.5.4 Review the “dot11RobustAVStreamingIplemented is true” paragraph (page 12).3.5.5.5 Review changes proposed to 10.24.2.12.13.5.5.6 More review may be needed. |
| 2520. | "QoS STA retry counter" is odd since by definition it's for the STA | Change "QSRC" to "QRC" throughout and delete the "STA" in the expansion in 3.4 | Rejected - the referenced counter is a STA counter, as opposed to a frame counter. |
| 266410.24.2.12.11811.1 | The QLRC was eliminated for EDCA, but not yet the QLDRC. | Eliminate the QLDRC for dot11Robust AVStreamingImplemented equal to true. | Revised - agree with the comment. Make changes in 11-19-1195-11-000m-assorted-crs.docx under CID 2429. |

**CID 2429 (and 2520 and 2664)**

***<Note: The newly inserted text uses count instead of counter, to align with the resolution to CID 2431.>***

**3.4 Abbreviations and acronyms**

212.44 delete

 QLDRC QoS long drop-eligible retry counter(#1505)

212.50 delete

QSDRC QoS short drop-eligible retry counter

**10.24.2.2 EDCA backoff procedure**

1798.6

If the backoff procedure is invoked for reason a) above, CW[AC] and QSRC[AC] shall be left unchanged.

If the backoff procedure is invoked for reason b) above, CW[AC] shall be set to CWmin[AC], and QSRC[AC] shall be set to 0.

(#1505)If the backoff procedure is invoked for reason c), d), e), or f) above, CW[AC] and QSRC[AC] shall be updated as follows:

— If QSRC[AC] is less than dot11ShortRetryLimit,

— QSRC[AC] shall be incremented by 1

— CW[AC] shall be set to the lesser of CWmax[AC] and 2QSRC[AC] × (CWmin[AC] + 1) – 1

— Else

— QSRC[AC] shall be set to 0

— CW[AC] shall be set to CWmin[AC]

***<Editor please also include the new whitelines.>***

**10.24.2.12 Retransmit procedures**

**10.24.2.12.1 General**

A QoS STA shall maintain a frame retry counter for each MSDU, A-MSDU, or MMPDU that belongs to a TC that requires acknowledgment. The initial value for the frame retry counter shall be 0.

QoS STAs shall also maintain a QoS STA retry counter for each AC, QSRC[AC]. The initial value for the QSRC[AC] counters shall be 0.

When dot11RobustAVStreamingImplemented is true, a QoS STA shall maintain a drop-eligible frame retry counter for each QoS Data frame with an HT variant HT Control field with the DEI field equal to 1. The initial value for the drop-eligible frame retry count shall be 0.

APs with dot11RobustAVStreamingImplemented equal to true and mesh STAs with dot11MeshGCRImplemented equal to true, shall maintain an unsolicited frame retry counter. The initial value for the unsolicited frame retry count shall be 0.

After transmitting a frame that requires an immediate acknowledgment, the STA shall perform either of the acknowledgment procedures, as appropriate, that are defined in 10.3.2.11 (Acknowledgment procedure). The frame retry counter for an MSDU or A-MSDU that is not part of a block ack agreement or for an MMPDU shall be incremented every time transmission fails for that MSDU, A-MSDU, or MMPDU, including of an associated RTS.

For APs with dot11RobustAVStreamingImplemented equal to true and mesh STAs with dot11MeshGCRImplemented equal to true, the unsolicited frame retry counter shall be incremented after the transmission of every A-MSDU that is transmitted using the GCR unsolicited retry retransmission policy.

All retransmission attempts by a non-DMG STA for an MPDU with the Type subfield equal to Data or Management that is not sent under a block ack agreement and that has failed the acknowledgment procedure one or more times shall be made with the Retry subfield set to 1.

All retransmission attempts by a DMG STA for an MPDU with the Type subfield equal to Data or Management that has failed the acknowledgment procedure one or more times shall be made with the Retry subfield set to 1.

Retries for failed transmission attempts shall continue until one or more of the following conditions

occur:

— The frame retry count for the MSDU, A-MSDU, or MMPDU is equal to dot11ShortRetryLimit.

— The drop-eligible frame retry count for the MSDU, A-MSDU, or MMPDU is equal to dot11ShortDEIRetryLimit.

— The unsolicited frame retry count for the A-MSDU is equal to dot11UnsolicitedRetryLimit.

When any of these limits is reached, retry attempts shall cease, and the associated MSDU, A-MSDU, or MMPDU shall be discarded.

For internal collisions, the frame retry counters associated with the MSDUs, A-MSDUs, or MMPDUs involved in the internal collision shall be incremented.

With the exception of a frame belonging to a TID for which a block ack agreement is set up, a QoS STA shall not initiate the transmission of any Management or Data frame to a specific RA while the transmission of another Management or Data frame with the same RA and having been assigned its sequence number from the same sequence counter has not yet completed to the point of success, retry fail, or other MAC discard (e.g., lifetime expiration).

A QoS STA shall maintain a transmit MSDU timer for each MSDU passed to the MAC. dot11EDCATableMSDULifetime at a non-AP STA and dot11QAPEDCATableMSDULifetime at an AP specifies the maximum amount of time allowed to transmit an MSDU for a given AC. The transmit MSDU timer shall be started when the MSDU is passed to the MAC. If the value of this timer exceeds the appropriate entry in dot11EDCATableMSDULifetime at a non-AP STA and dot11QAPEDCATableMSDULifetime at an AP, then the MSDU, or any remaining, undelivered fragments of that MSDU, shall be discarded by the source STA without any further attempt to complete delivery of that MSDU.

When A-MSDU aggregation is used, the HT STA maintains a single timer for the whole A-MSDU. The timer is restarted each time an MSDU is added to the A-MSDU. The result of this procedure is that no MSDU in the A-MSDU is discarded before a period of dot11EDCATableMSDULifetime at a non-AP STA and dot11QAPEDCATableMSDULifetime at an AP has elapsed.

***<Editor please deprecate MIB variable dot11LongDEIRetryLimit per the standard procedure, citing as the reason for deprecation "The long retry counter (QLDRC) associated with this MIB variable has been deleted.".>***