IEEE P802.11
Wireless LANs

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| REVmc – Proposed Fixes to Retry Count Rules |
| Date: 2013-06-26 |
| Author(s): |
| Name | Affiliation | Address | Phone | E-mail |
| Daniel Cohn | Intel Corporation |  |  | daniel.cohn@intel.com |
| Adrian Stephens | Intel Corporation |  |  | adrian.p.stephens@intel.com |

Abstract

Fixes two problems in retry count rules in 802.11REVmc D1.0

# Problem Statement #1

The DCF section defines rules for updating the retry counters upon RTS transmission, as follows:

In 9.3.4.4:

*If the RTS transmission fails, the SRC for the MSDU or MMPDU and the SSRC are incremented.*

In 9.3.3:

*The SSRC shall be reset to 0 when a CTS frame is received in response to an RTS frame, <snip>*

As a result of this, an RTS/CTS protected MSDU/A-MSDU/MMPDU is discarded after dot11ShortRetryLimit unsuccessful RTS transmissions.

However clause 9.19.2.6, which defines retransmission procedures in EDCA, does not specify retry counter updates upon RTS transmission. As a result of this, a STA does not discard an RTS/CTS protected data or management frame even after endless unsuccessful RTS transmissions. This is clearly an undesirable behavior.

# Proposed Resolution #1

*Add the following new paragraph in clause 9.19.2.6 after the first paragraph.*

After an RTS frame is transmitted to protect an MSDU or MMPDU, a QoS STA performs the CTS procedure, as defined in 9.3.2.6. If a valid CTS frame is not received, the short retry counter for the MSDU or MMPDU and the QSRC[AC] for the corresponding AC shall be incremented. If a valid CTS frame is received, the QSRC[AC] for the corresponding AC shall be reset to 0.

# Problem Statement #2

Clause 9.3.3 states:

“The SSRC shall be reset to 0 when a CTS frame is received in response to an RTS frame, when a BlockAck frame is received in response to a BlockAckReq frame, when an ACK frame is received in response to the transmission of a frame of length greater than dot11RTSThreshold containing all or part of an MSDU or MMPDU, or when a frame with a group address in the Address1 field is transmitted. The SLRC shall be reset to 0 when an ACK frame is received in response to transmission of a frame containing all or part of an MSDU or MMPDU of , or when a frame with a group address in the Address1 field is transmitted.”

This paragraph contains an obvious typo in the way of an unfinished sentence (“containing all or part of an MSDU or MMPDU of”) and a technical error where it states that the station short retry counter is reset upon a successful transmission of a frame of length greater than dot11RTSThreshold.

# Proposed Solution #2

*Modify the third paragraph of clause 9.3.3, as follows:*

The SSRC shall be reset to 0 when a CTS frame is received in response to an RTS frame, when a BlockAck frame is received in response to a BlockAckReq frame, when an ACK frame is received in response to the transmission of a frame of length ~~greater~~ ~~than~~ less than or equal to dot11RTSThreshold containing all or part of an MSDU or MMPDU, or when a frame with a group address in the Address1 field is transmitted. The SLRC shall be reset to 0 when an ACK frame is received in response to transmission of a frame containing all or part of an MSDU or MMPDU of length greater than dot11RTSThreshold, or when a frame with a group address in the Address1 field is transmitted.