IEEE P802.11
Wireless LANs

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| A-PPDU Corrections |
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Abstract

This document proposes resolutions to A-PPDU CID: 9001 wrt Draft 8.0 of TGad.

Explicitly disallow zero-length PPDUs



Figure - Control PHY frame.

Figure 1 shows the Control PHY frame.

Table 21-13 and Table 21-24, mentions Length range for PSDU as 0 – 262143 octets. As there is no definition for a zero-length PSDU – i.e. a PSDU always contains an MPDU (MAC header and MSDU), there is no case the PSDU length be 0 octets. This implies if PSDU length is 0, two PLCP headers are transmitted adjacent to each other in an A-PPDU.

If following a PLCP Header any of the following can occur:

1. PSDU
2. PLCP Header (0 length PSDU with additional PPDU set to 1)
3. TRN-subfields

This adds complexity to the receiver as it needs to be able to do one of the following:

1. Decode the PLCP Hdr in zero time
2. Speculatively decode the symbols following the PLCP Header as a PSDU, PLCP Header and a TRN-subfield
3. Buffer the symbols following the PLCP Header until the PLCP Header is decoded and it knows how to process the symbols

#1 is extremely challenging to support; #2 and #3 are further complicated by the fact that during Beamforming the receiver may need to update its AWV during the reception, which it can’t do if its buffering the data or decoding PSDU data.

Further without an MPDU it may not be possible to include NAV protection (unless the NAV protection for the PPDU was established in a prior packet).

Finally, during the transmission of TRN-subfields a receiver may not be able to maintain timing lock to the data which would make it difficult to receive a subsequent A-PPDU, hence if Additional PPDU field is equal to 1, the Training Length field shall be set to 0.

***TGad Editor: modify P503 Table 21-13 as follows:***

|  |  |  |  |
| --- | --- | --- | --- |
| Length  | 18  | 12  | Number of data octets in the PSDU. Range 1-262143.  |

***TGad Editor: modify P543 Table 21-17 as follows:***

|  |  |  |  |
| --- | --- | --- | --- |
| Length  | 18  | 12  | Number of data octets in the PSDU. Range 1-262143.  |

Clarify that only a single guard interval is present between A-PPDUs



Figure - Block Transmission.

If additional PPDU field is equal to 1, two GI spaces are present between the adjacent A-PPDU sub frames in an A-PPDU.

To avoid this scenario, if additional PPDU is equal to 1, the final block transmitted of the A-PPDU sub frame that is the last one in an A-PPDU is followed by the same Golay sequence interval.

***TGad Editor: replace P550L8 as follows:***

If the Additional PPDU field within the PLCP header is equal to 0, the final block transmitted is followed by the same Golay sequence guard interval.

If the Additional PPDU field within the PLCP header is equal to 1, the final block transmitted of the last PPDU in an A-PPDU is followed by the same Golay sequence guard interval.