IEEE P802.11
Wireless LANs

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| CR for P2P buffer report |
| Date: 2023-05-06 |
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Abstract

This submission proposes comment resolution(s) for the following 5 CID(s) received in LB266 on TGbe D3.2 related to 35.2.1.2 Triggered TXOP sharing procedure

CIDs: 15098, 17807, 18219, 18319, 15691

Revisions:

* Rev 0: Initial version of the document.
* Rev 1-2: editorial fix

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause**  | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 15098 | Pei Zhou | 35.2.1.2 | 473.63 | If AP doesn't know the uplink and/or P2P transmission time duration requirements of STAs in advance, the AP cannot determine how long the Allocation Duration and which TXOP sharing mode should be signalled in MU-RTS TXS TF. | Before MU-RTS TXS TF transmitted by AP, STA may need to transmit a frame (e.g., QoS Null frame) to AP to indicate its uplink and/or P2P transmission requirement to AP. | RevisedAgree with the commenter. A P2P buffer report mechanism is introduced to solve this issue.For a resource request for TXOP sharing, the following requested parameters are needed: medium time, BW, and TID. The medium time requested is the requested resource based on the BW. The BW gives the maximal bandwidth that the TXOP sharing will be used for. The AP can decide the priority to allocate its medium time based on the TID and other information.TGbe editor to make changes in 11-23/0764r2 under CID 15098 |
| 17807 | Yunbo Li | 35.2.1.2.2 | 474.42 | lack of a P2P buffer report mechanism in current spec, so AP will hard to determine when to send MU-RTS TXS TF with Triggered TXOP Sharing Mode subfield equal to 2 to an associated STA for P2P transmission. | add the P2P buffer report mechanism | RevisedAgree with the commenter. A P2P buffer report mechanism is introduced to solve this issue.For a resource request for TXOP sharing, the following requested parameters are needed: medium time, BW, and TID. The medium time requested is the requested resource based on the BW. The BW gives the maximal bandwidth that the TXOP sharing will be used for. The AP can decide the priority to allocate its medium time based on the TID and other information.TGbe editor to make changes in 11-23/0764r2 under CID 15098 |
| 18219 | Rubayet Shafin | 35.2.1.2 | 473.54 | Currently there is no mechanism in the spec that enables to request for TXOP from an AP by a non-AP STA. However, such capability would be essential for efficient operation, especially for P2P communication. | Please provide mechanisms and frameworks for requesting TXOP from the AP or AP MLD by an STA or non-AP MLD and describe AP MLD's behavior upon receiving such request. | RevisedAgree with the commenter. A P2P buffer report mechanism is introduced to solve this issue.For a resource request for TXOP sharing, the following requested parameters are needed: medium time, BW, and TID. The medium time requested is the requested resource based on the BW. The BW gives the maximal bandwidth that the TXOP sharing will be used for. The AP can decide the priority to allocate its medium time based on the TID and other information.TGbe editor to make changes in 11-23/0764r2 under CID 15098 |
| 18319 | Rubayet Shafin | 35.2.1.2 | 473.54 | For TXOP sharing, the STA should have a mechanism to indicate its need for TXOP and what kind of TXOP (mode 1 or 2) so that AP would know what to send. This is currently missing and need to be provided. | As in comment | RevisedA P2P buffer report mechanism is introduced in 11-23/0764r2.When a non-AP STA reports P2P buffer, a different A-Control type (control ID =10) from BSR report (control ID =3) will be used, so the associated AP can clearly know the reported buffer is for UL or P2P. Furtherly, the AP can decide a TXOP of TXS mode 1 or mode 2 should be allocate to the non-AP STA.TGbe editor to make changes in 11-23/0764r2 under CID 15098 |
| 15691 | Dibakar Das | 35 | 473.06 | The P2P operation in wifi-7 is somewhat missing a resource request mechanism similar to UL operations. In UL we have both semi-static (SCS) and dynamic (BSR) mechanisms for a STA to signal its requirements. Suggest to have a similar mechanism for P2P. | 1 Improve upon the QoS Characteristics element design to allow a STA to signal the BW, channel number information for the requested P2P link. 2. Add a dynamic mechanism that allows a STA to report its instantenous resource request and clarify how that will work with the SCS based mechanism, | RevisedAgree with the commenter. A P2P buffer report mechanism is introduced to provide instantenous P2P buffer status.For a resource request for TXOP sharing, the following requested parameters are needed: medium time, BW, and TID. The medium time requested is the requested resource based on the BW. The BW gives the maximal bandwidth that the TXOP sharing will be used for. The AP can decide the priority to allocate its medium time based on the TID and other information.TGbe editor to make changes in 11-23/0764r2 under CID 15098 |

1. **Proposed spec text**

9.2.4.6 HT Control field

9.2.4.6.4 HE variant

***TGbe editor: Please make the following changes in Table 9-25 (Control ID subfield values) : (#15098)***

Table 9-25—Control ID subfield values

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| Control ID value |

 |

|  |
| --- |
| Meaning |

 |

|  |
| --- |
| Length of the Control Information subfield (bits) |

 |

|  |
| --- |
| Content of the Control Information subfield |

 |
| … | … | … | … |
| 10 | P2P Buffer Status Report (P2P BSR) | 16 | See 9.2.4.7.12 (P2P BSR Control) |
| 11-14 | Reserved |  |  |
| 15 |

|  |
| --- |
| Ones need expansion surely (ONES) |

 | 26 |

|  |
| --- |
| Set to all 1s |

 |

***TGbe editor: add the following subclause in subcaluse 9.2.4.7 (Control subfield variants of an A-Control subfield) (#15098)***

9.2.4.7.12 P2P BSR Control

The Control Information subfield in a P2P BSR Control subfield contains information related to the required medium time for TXOP sharing for the STA transmitting the frames to its P2P peer STA (see 35.2.1.3 Triggered TXOP sharing procedure). The format of the subfield is shown in [Figure 9-x (Control Information subfield format in a P2P BSR Control subfield)](#bookmark2)

 B0 B3 B4 B6 B7 B13 B14 B15

|  |  |  |  |
| --- | --- | --- | --- |
| TID | Channel Width | Required Medium Time | Reserved |

 Bits: 4 3 7 2

 [Figure 9-x Control Information subfield format in a P2P BSR Control subfield](#bookmark2)

The TID subfield indicates the TID whose medium time is requested.

The Channel Width subfield as defined in Table 9-y (Channel Width subfield) indicates the maximal bandwidth of the P2P link that corresponds to the link on which the P2P BSR Control subfield is transmitted.

The Required Medium Time subfield indicates the required medium time in unit of 256 microseconds, requested for TXOP sharing on the link on which the P2P BSR Control subfield is transmitted based on the channel width specified in by the Channel Width subfield.

Table 9-y — Channel Width subfield

|  |  |
| --- | --- |
| Value | Meaning |
| 0 | 20 MHz |
| 1 | 40 MHz |
| 2 | 80 MHz |
| 3 | 160 MHz |
| 4 | 320 MHz |
| 5 to 7 | Reserved |

***TGbe editor: add the following paragraphs in 35.2.1.2.3 (Non-AP STA behaviour):*** ***(#15098)***

35.2.1.2.3 Non-AP STA behavior

If a non-AP STA with dot11EHTTXOPSharingTFOptionImplemented equal to true received the EHT Capabilities element with the Triggered TXOP Sharing Mode 2 Support subfield in the EHT Capabilities element equal to 1 from its associated AP, the non-AP STA may deliver a P2P BSR Control subfield to its associated AP to assist the AP in allocating resources for TXOP sharing operation.

After receiving the soliciting BSRP Trigger frame, a non-AP STA with dot11EHTTXOPSharingTFOptionImplemented equal to true may transmit a QoS Null frame with P2P BSR Control subfield as defined in 9.2.4.7.12 (P2P BSR Control).

When associated with an AP from which the EHT Capabilities element with the Triggered TXOP Sharing Mode 2 Support subfield in the EHT Capabilities element equal to 1 is received, a non-AP STA with dot11EHTTXOPSharingTFOptionImplemented equal to true, may deliver QoS Null/Data frame with P2P BSR Control subfield as defined in 9.2.4.7.12 (P2P BSR Control) that is not carried in EHT TB PPDU or HE TB PPDU.

The required time duration in a P2P BSR Control subfield applies on the link that the P2P BSR Control subfield is transmitted.

NOTE 3 — When a non-AP STA reports a P2P BSR Control subfield to its associated AP, if the value of TID subfiled in the P2P BSR Control subfield matches the TID of an established SCS stream, the report of P2P BSR Control subfield doesn’t changes the parameters of the SCS stream.