IEEE P802.11
Wireless LANs

|  |
| --- |
| CC36 Comment Resolution CID 7888  |
| Date: 2021-9-3 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Minyoung Park | Intel Corporation |  |  | Minyoung.park@intel.com |
| Gaurang Naik | Qualcomm |  |  |  |
| Yongho Seok | Mediatek |  |  |  |

Abstract

This submission proposes comment resolution(s) for the following CID(s) received in CC36 related to EMLSR operation for group address frames:

* 7888

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Updated based on comments during the MAC call and offline discussion.
* Rev 2: Updated based on offline discussions.
* Rev 3: Updated based on the discussion in the MAC call on Jan. 27, 2022. Clarified that frame exchanges that starts with the initial Control frame applies to individual addressed frame exchanges (based on Yongho Seok’s comment during the call). Updated based on TGbe D1.4.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause Number** | **Page.****Line** | **Comment** | **Proposed Change** | **Resolution** |
| 7888 | Yongho Seok | 35.3.15 | 281.47 | "The AP MLD shall initiate a frame exchange sequence with the non-AP MLD on one of the enabled links by transmitting an initial Control frame to the non-AP MLD with the limitations specified above."This should be limited to an individually addressed frame exchange sequence. And, clarify the reception of the group addressed frame in the EMLSR mode. | As in the comment. | Revised.Agree with the commenter. A procedure for a group addressed frame for a non-AP MLD operating in the EMLSR mode has been added.TGbe editor to make the changes with the CID tag (#7888) in doc.: IEEE 802.11-21/1483r4[https://mentor.ieee.org/802.11/dcn/21/11-21-1483-04-00be-cc36-cr-cid 7888.docx] |

**Discussion:**

r0:

When a non-AP MLD is operating in EMLSR mode, an AP affiliated with an AP MLD initiates frame exchange sequences by transmitting a MU-RTS or BSRP frame addressed to one of the STAs affiliated with the non-AP MLD. However, this is not applicable for a group address frame because the group address frame is for all associated non-AP MLDs.

A simple solution to this problem is to transmit group addressed frames immediately following a Beacon frame containing DTIM transmission. A non-AP MLD in the EMLSR mode knows when DTIM beacon will be transmitted so can receive group addressed frames following the DTIM beacon.

r1:

One of the feedbacks on r0 was that the original text in r0 was too concise and may need more details. Here are the changes highlighted in yellow. I borrowed the same structure that is used in 11.2.3 (Power management in a non-DMG infra) below for the EMLSR case:

*“If any non-GLK STA in its BSS is in PS mode, the AP shall buffer all non-GCR-SP group addressed BUs that*

*arrive via the DS and deliver them to all non-GLK STAs immediately following the next Beacon frame*

*containing a DTIM transmission.”*

And added the broadcast TWT SP case as Gaurang suggested.

r2: Added reference to 35.3.14 (multi-link group addressed frame delivery and reception) and clarified a non-AP MLD follows the same rules defined in 11.2.3.7 (receive operation for STAs in PS mode) to determine when to end the reception of group addressed frames.

**TGbe Editor to make the following changes in Subclause 35.3.17 in TGbe D1.4 :**

**35.3.17 Enhanced multi-link single radio operation**

…

When a non-AP MLD is operating in the EMLSR mode with an AP MLD supporting the EMLSR mode(#8047), the following applies:

…

— (#4759)(#5766)(#6342)(#6350)(#7888)An AP affiliated with the AP MLD that initiates individual addressed frame exchanges with the non-AP MLD on one of the EMLSR links shall begin the frame exchanges by transmitting the initial Control frame to the non-AP MLD with the limitations specified above.

— (#7888) If any non-AP MLD with dot11EHTEMLSROptionImplemented equal to true that is associated with an AP MLD with dot11EHTEMLSROptionImplemented equal to true is operating in EMLSR mode, the AP MLD shall buffer all non-GCR-SP group addressed BUs that arrive via the DS and deliver the non-GCR-SP group addressed BUs following the rules defined in 35.3.15 (Multi-link group addressed frame delivery and reception). A non-AP MLD that is operating in EMLSR mode that switched to a link to receive non-GCR-SP group addressed BUs shall return to the listening operation after receiving an indication from the AP MLD that there is no more buffered non-GCR-SP group addressed BUs following the rules defined in 11.2.3.7 (Receive operation for STAs in PS mode).