IEEE P802.11
Wireless LANs

|  |
| --- |
| Proposed Draft TextMAC MLO Power Save: Traffic Indication |
| Date: 2020-8-24 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Minyoung Park | Intel Corporation |  |  | Minyoung.park@intel.com |
| Young Hoon Kwon | NXP |  |  | younghoon.kwon@nxp.com |

Abstract

This submission proposes draft text to be included in 802.11be Draft 0.1 for the following topic:

* MAC MLO power save – traffic indication
	+ Includes draft text for [Motion 115, #SP61], [ Motion 115, #SP62], and [ Motion 122, #SP157]
	+ Deferring Motion 52 and Motion 106 (cross-link power-save signalling related)

Revisions:

* Rev 0: Initial version of the document.

**TGbe editor: Modify the following subclause as follows**

* TIM element
* General

Change the last paragraph in page 998 as follows (based on the paragraph from P802.11REVmd D4.0):

When the TIM is carried in a non-S1G PPDU(11ah), the traffic indication virtual bitmap, maintained by the AP or the mesh STA that generates a TIM, consists of 2008 bits, and it is organized into 251 octets such that bit number *N* (0 £ *N* £ 2007) in the bitmap corresponds to bit number (*N* mod 8) in octet number ë*N* / 8û where the low order(M101) bit of each octet is bit number 0, and the high order bit is bit number 7. (#4507)When the TIM is carried in an S1G PPDU, the traffic-indication virtual bitmap has the hierarchical structure shown in Figure 9-152 (Hierarchical structure of traffic-indication virtual bitmap carried in an S1G PPDU(#2001)(11ah)). (#2001)Each bit in the traffic indication virtual bitmap corresponds to traffic buffered for a specific neighbor peer mesh STA within the MBSS that the mesh STA is prepared to deliver26, or for a STA that is not affiliated with an MLD within the BSS that the AP is prepared to deliver at the time the Beacon frame is transmitted, or for a non-AP MLD that the AP MLD with which the AP is affiliated is prepared to deliver at the time the Beacon frame is transmitted. Bit number *N* indicates the status of buffered, individually addressed MSDUs/MMPDUs for the STA or the non-AP MLD whose AID is *N*, or group addressed MSDUs/MMPDUs for the STAs whose group AID is *N*.(11ah) It is set as(#4678) follows:

* Power management with APSD
* Power management with APSD procedures

Add the following paragraph after the third paragraph in page 2175 (based on the paragraph from P802.11REVmd D4.0):

A STA may set an AC to be trigger- or delivery-enabled for its own use by setting up TSPECs with the APSD subfield set to 1 and the Schedule subfield set to 0 in the uplink or downlink direction, respectively. An uplink TSPEC plus a downlink TSPEC, or a bidirectional TSPEC with the APSD subfield equal to 1 and the Schedule subfield equal to 0, makes an AC both trigger- and delivery-enabled. An uplink TSPEC plus a downlink TSPEC, or a bidirectional TSPEC with the APSD and the Schedule subfields both equal to 0, makes an AC neither trigger- nor delivery-enabled.

If a STA is affiliated with a non-AP MLD, the non-AP MLD shall have the same U-APSD Flag value for each AC across all links that multi-link is setup.

***TGbe editor: Insert the new subclause 33.3.6 Power save as follows:***

**33.3.6 Power save**

**33.3.6.1 Traffic indication**

The TIM shall identify the STAs or the non-AP MLDs for which traffic is pending and buffered in the AP or the AP MLD with which the AP is affiliated. This information is coded in a *partial virtual bitmap*, as described in 9.4.2.5 (TIM element). The AP shall identify those STAs that are not affiliated with MLDs for which it is prepared to deliver buffered BUs by setting bits in the TIM’s partial virtual bitmap that correspond to the appropriate AIDs. The AP shall identify those non-AP MLDs for which the AP MLD that the AP is affiliated with is prepared to deliver buffered BUs by setting bits in the TIM’s partial virtual bitmap that correspond to the appropriate AIDs.

When a non-AP MLD made a multi-link setup with an AP MLD, one AID is assigned to the non-AP MLD across all links.