IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CIDs 2463 and 2060 – Annex O | | | | |
| Date: 2014-05-13 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Dorothy Stanley | Aruba Networks | 1322 Crossman Ave, Sunnyvale, CA | +1 408 227 4500 | [dstanley@arubanetworks.com](mailto:dstanley@arubanetworks.com) |
| Qi Wang | Broadcom Corporation |  |  |  |
| Mark Hamilton | SpectraLink |  |  |  |
| Mark Rison | Samsung Cambridge |  |  |  |

Abstract

Proposed resolutions to the CIDs in <https://mentor.ieee.org/802.11/dcn/13/11-13-1160-06-000m-lb199-gen-adhoc-comments.xls> are included in this document:

2463 and 2060

**CID 2463**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2463 | 3050.27 | O.2 |  |  | The Editor was right to be unsure about the resolution to CID 234, there is an error in Figure O-3. The AID 0 arrow should not be there to the second row. Also the O-5 changes are not complete. | Delete the second (lower) arrow for AID 0 in Figure O-3. On Figure O-5, add an indication of AID 0, with a split arrow to both the left cells (first and second row). Change the title of Figure O-7 to "Partial Virtual Bitmap example #5" (including lower-case 'e'). |

**Discussion:**

**Also see CID 2060, proposed resolution in 11-14-0207:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2060 | 3050.34 | O.2 |  |  | The changes indicated in the resolution of comment 234 on figure O-3 made no sense to me as editor. | Please review Figure O-3 versus the resolution of comment 234 and determine if any additional changes are necessary. |

**CID 2060 proposed resolution is:**

“Proposed resolution:

Revised. Remove the diagonal arrow in Figure 0-3.” This is the same resolution proposed by the commenter for Figure O-3 in CID 2463.

The resolution to CID 234 was:

*REVISED (GEN: 2013-09-18 09:24:31Z) - - In 8.4.2.7, after the para which starts "When dot11MgmtOptionMultiBSSIDActivated is false" add a "NOTE---The bit numbered 0 in the traffic indication virtual bitmap need not be included in the Partial Virtual Bitmap field even if that bit is set."- In the same para, and in the "Method A" and "Method B" paras below, change "in the bitmap" to "in the traffic indication virtual bitmap"- In the next para, and in the para which ends "Otherwise, an AP uses Method A." below, change "in the virtual bitmap" to "in the traffic indication virtual bitmap"- In Figures O-2 and O-3 show the AID 0 bit in the PVB as 1 and split the arrow from AID 0 to point at both the Bitmap Control b0 and the PVB b0. Similarly, on O-5, show the AID 0 bit in the PVB as 1.*

*- In Figures O-1 to O-7 change the captions to:*

*- say "Partial" first*

*- have "Bitmap" in caps*

*- not have "Example" in caps*

*- say "Bitmap" (for O-7)*

*- Ditto for the title of Annex O*

*- Change "bit map" (case-insensitively) to "Bitmap"*

*- Change "bitmap control" (case-insensitively) to "Bitmap Control"*

*- "Traffic Indicator bit" is used exactly once in the spec, despite the grandiose uppercase letters -- change to "traffic indication virtual bitmap bit"*

The cited text that describes Figure O-3 is:





CID 2463 commenter suggests to “Delete the second (lower) arrow for AID 0 in Figure O-3. “

Cited text that describes O-5 is:





CID 2463 commenter suggests: “On Figure O-5, add an indication of AID 0, with a split arrow to both the left cells (first and second row).”

The title of figure O-7 is:



CID 2463 Commenter suggests to change “Example” to “example”

**Proposed resolution: Revised**

Incorporate the text changes indicated below:

At 1378.58 and 1941.55, change from “bit map control field” to “Bitmap Control field”

At 1380.58, change from “Bit Map Control field” to “Bitmap Control field”

At 3049.7, change the title of Annex O and the introductory text as follows:

**Examples and sample code for encoding a TIM Partial Virtual Bitmap field**

**O.1 Introduction**

The purpose of this annex is to show examples of encoding a Partial Virtual Bitmap field of the TIM

element, as described in 8.4.2.6 (TIM element). Sample C code is provided in O.3 (Sample C code).

In figure O-3, delete the angled line and change from “0” to “1” in the second position from the left in the first (bitmap control) row. The existing figure at P3050L20-34 is shown first and the updated figure is shown below, second:





**Figure O-3—Partial Virtual Bitmap example #3**

In Figure O-5, at line 10 change the label from “Non-transmitted BSSID” to “Transmitted BSSID”

In the second row, change the leftmost bit from “0” to “1” and add an arrow from the “Transmitted BSSID..” label to the leftmost bit of the first row (similar to 2nd arrow in figure O-5). Change the arrow pointing to the second row to pont to the leftmost bit in the second row. Add additional description as shown. The existing figure at P3051L6-21 is shown first and the to-be-adopted-modified figure is second:





**Figure O-5—Partial Virtual Bitmap example #5, Method A or Method B**

Note:Editor to change the arrow in the second row to a box enclosing the referenced bits.

And introduce visual separation between 2 left text descriptions.

In Figure O-6, change the label to the first row from “Non-transmitted BSSID” to “Transmitted BSSID” and add an arrow from the “Transmitted BSSID..” label to the leftmost bit of the first row. Add AID 16 to indicate beginning of individually addressed frame indication. Add explanation for Bitmap offset. Add AID 0 indication. The existing figure at P3051L35-57 is shown first below, and the updated figure shown second:





**Figure O-6—Partial Virtual Bitmap example #6, Method A**

Note:Editor to change the arrow in the second and third rows to a box enclosing the referenced bits.

In Figure O-7, change the label from “Non-transmitted BSSID” to “Transmitted BSSID” in the first row, and add an arrow from the “Transmitted BSSID..” label to the leftmost bit of the first row. Additional explanation included as shown. The current figure at P3052L1-18 is shown first below, and the updated figure shown second:





**Figure O-7—Partial Virtual Bitmap example #6, Method B**

Note:Editor to change the arrow in the second and third rows to a box enclosing the referenced bits.

And modify the paragraph at 3051.23 as indicated below:

In the third example, there are sixteen BSSIDs and the lowest possible AID that can be assigned to any STA

is 16 (*n*=4, *k*=15, see 8.4.2.6 (TIM element). There are no group addressed frames buffered at the AP for the transmitted BSSID, and the DTIM Count field in the TIM element of the transmitted BSSID is 0. The nontransmitted BSSID Index 3 also has the DTIM Count field set to 0 and has group addressed frames buffered at the AP. All other nontransmitted BSSIDs have no buffered group addressed frames. In addition, the STA with AID 39 has individually addressed frames buffered at the AP. Figure O-6 (Partial Virtual Bitmap example #5, Method A) and Figure O-7 (Virtual Example #5, Method B) show the values of the Bitmap Control and Partial Virtual

Bitmap fields that would be part of the TIM element for this example when Method A (*N2*=4, see 8.4.2.6 (TIM element)) and Method B (*N0*=2, *N1*=4, *N2*=4, see 8.4.2.6 (TIM element)) are used, respectively.

W.r.t. D2.8-443 make the following changes:

O.2 p. 3542:

The three examples listed above describe the construction of the ~~TIM~~Partial Virtual Bitmap when the Multiple-BSSID capability is not supported. The following three examples demonstrate how to construct the ~~TIM~~Partial Virtual Bitmap, when Multiple-BSSID is supported.

O.3 p. 3667:

The following C source code illustrates how to construct the ~~TIM~~Partial Virtual Bitmap.

O.3 p. 3668:

/\* Find the first nonzero octet in the Partial V~~v~~irtual Bitmap \*/

/\* Find the last nonzero octet in the Partial V~~v~~irtual Bitmap \*/

/\* Copy the Partial V~~v~~irtual Bitmap octets that are nonzero \*/

O.3 p. 3670:

/\* Get aidAID position in the Partial Virtual Bitmap. \*/

Also, in the 6 instances of "traffic-indication virtual bitmap"

in D2.8-443, have the hyphen replaced by a space.

**References:**