IEEE P802.11
Wireless LANs

|  |
| --- |
| LB 200 Comment Resolution for 8.4.2.6.1.4 |
| Date: 2014-04-03 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Shoukang Zheng | I2R | 1 Fusionopolis Way, #21-01 Connexis, Singapore | (65) 6408 2000 | skzheng@i2r.a-star.edu.sg |
| Zander Lei | I2R |  |  | leizd@i2r.a-star.edu.sg |
| Yuan Zhou | I2R |  |  | yzhou@i2r.a-star.edu.sg |

Abstract

This document provides resolutions for CID 1637.

The changes are in the following clause: Annex O.

Table of Contents

[0 Revision Notes 2](#_Toc350888716)

# 0 Revision Notes

R0: First draft

R1: Second draft. Add some text and change Figure O-9 according to the feedback from the group

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 1637 | 8.4.2.6.1.4 | 73 | 24 | These new forms of TIM construction probably require examples in Annex O. | Add examples of the new forms of TIM construction to Annex O. | Revised. Agreed in principle.Please see the comment resolution document 11-14/0486. |

**CID 1637**

***Proposed changes:***

 **Instruction to Editor: *Please make the following changes for L21P3070 in Annex O (802.11REVmc 2.2):***

The following examples help clarify the use of TIM values, both with and without the Multiple BSSID

Capability for non-S1G STAs, with multiple BSSID Capability for S1G STAs as well as the use of the encoding modes of Block Bitmap, Single AID, OLB, ADE, Inverse Bitmap + Block Bitmap, Inverse Bitmap + Single AID, Inverse Bitmap + OLB and Inverse Bitmap + ADE of TIM element for S1G STAs.

**Instruction to Editor: *Please insert the following text for L18P3073 in Annex O (802.11REVmc 2.2):***

The examples listed above describe the construction of the TIM Virtual Bitmap for non-S1G STAs. The following eight examples demonstrate how to construct the TIM element for S1G STAs.

The first example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses the encoding mode of Block Bitmap. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. STAs with AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-8 (Partial Virtual Bitmap example #6, Block Bitmap mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 0 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of Block Bitmap field with the value of 3 and two Subblock fields with the value of 66 and 160 respectively.



Figure O-8 (Partial Virtual Bitmap example #6 for S1G STAs, Block Bitmap mode)

The second example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses Single AID mode. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. Only STA with AID 31 has data buffered in the AP. Figure O-9 (Partial Virtual Bitmap example #7, Single AID mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 1 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of one Single AID field with the value of 31.



Figure O-9 (Partial Virtual Bitmap example #7 for S1G STAs, Single AID mode)

The third example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses OLB mode. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. STAs with AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-10 (Partial Virtual Bitmap example #6, OLB mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 2 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of one Length field with the value of 2 and two Subblock fields with the value of 66 and 160 respectively.



Figure O-10 (Partial Virtual Bitmap example #6 for S1G STAs, OLB mode)

The fourth example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses ADE mode. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. STAs with AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-11 (Partial Virtual Bitmap example #6, ADE mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field value is 3 and the Block Offset field value is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of only one ADE Block in which the EWL field is 4 and the Length field is 2. Four differential AID values (ΔAID), i.e. 1,5,15 and 2 are encoded in the Encoded Information Block that has zero padding bits.



Figure O-11 (Partial Virtual Bitmap example #6 for S1G STAs, ADE mode)

The fifth example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses the encoding mode of Inverse Bitmap + Block Bitmap. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. All the STAs with the AID value smaller than 24 except AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-12 (Partial Virtual Bitmap example #8, Inverse Bitmap + Block Bitmap mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 4 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of Block Bitmap field with the value of 3 and two Subblock fields with the value of 66 and 160 respectively.



Figure O-12 (Partial Virtual Bitmap example #8 for S1G STAs, Inverse Bitmap + Block Bitmap mode)

The sixth example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses the encoding mode of Inverse Bitmap + Single AID. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. All the STA with the AID value smaller than 32 except AID 31 have data buffered in the AP. Figure O-13 (Partial Virtual Bitmap example #9, Inverse Bitmap + Single AID mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 5 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of one Single AID field with the value of 31.



Figure O-13 (Partial Virtual Bitmap example #9 for S1G STAs, Inverse Bitmap + Single AID mode)

The seventh example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses the encoding mode of Inverse Bitmap + OLB. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. All the STAs with the AID value smaller than 24 except AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-10 (Partial Virtual Bitmap example #8, Inverse Bitmap + OLB mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field is 6 and the Block Offset field is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of one Length field with the value of 2 and two Subblock fields with the value of 66 and 160 respectively.



Figure O-14 (Partial Virtual Bitmap example #8 for S1G STAs, Inverse Bitmap + OLB mode)

The eighth example is one in which group addressed MSDUs are buffered in the AP as well as traffic for

S1G STAs. The TIM element uses the encoding mode of Inverse Bitmap + ADE. The DTIM Count field in the TIM element equals 0. The Group Addressed Traffic Indicator field is 1, the Page Slice Number field in the TIM element is 0 and the Page Index field is 0. All the STAs with the AID value smaller than 24 except AID 1, AID 6, AID 21 and AID 23 have data buffered in the AP. Figure O-15 (Partial Virtual Bitmap example #8, Inverse Bitmap + ADE mode) shows the values of the Bitmap Control and Partial Virtual Bitmap fields. The Partial Virtual Bitmap field consists of only one Encoded Block in which the Block Control field value is 7 and the Block Offset field value is 0. The Encoded Information Block field in the Partial Virtual Bitmap field consists of only one ADE Block in which the EWL field is 4 and the Length field is 2. Four differential AID values (ΔAID), i.e. 1,5,15 and 2 are encoded in the Encoded Information Block that has zero padding bits.



Figure O-15 (Partial Virtual Bitmap example #8 for S1G STAs, Inverse Bitmap + ADE mode)