IEEE P802.11
Wireless LANs

|  |
| --- |
| **CR for Critical Update** |
| **Date:** 2021-03-07 |

|  |
| --- |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jeongki Kim | LG Electronics | Yangae 11gil, Seocho-gu, Seoul, Republic of Korea |  | jeongki.kim@lge.com |
| Namyeong Kim | LG Electronics |  |  | namyeong.kim@lge.com |
| Insun Jang | LG Electronics |  |  | insun.jang@lge.com |
| Sunhee Baek | LG Electronics |  |  | sunhee.baek@lge.com |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |
| Gaurang Naik | Qualcomm Inc. |  |  | gnaik@qti.qualcomm.com |
| Ming Gan | Huawei |  |  | ming.gan@huawei.com |
| Alfred Asterjadhi | Qualcomm Inc. |  |  | aasterja@qti.qualcomm.com |
| Laurent Cariou | Intel |  |  | laurent.cariou@intel.com |

Abstract

This submission proposes resolution for comments related to TGbe D0.3 with the following CIDs (5 **CIDs**):

* 1892, 1893, 1899, 1974, and 2818

Revisions:

- Rev 0: Initial version of the document.

- Rev 1: Xiandong’s comment, check 🡺 parse

- Rev 2: Ming’s comments: added the text of the MLD not supporting the Critical Update Flag with some clarified text.

- Rev 3: Alfred’s comments: the texts are re-written by Alfred for more clarification.

- Rev 4: Laurent’s comments: In the 1st paragraph, shall-> may, in the 2nd and 3rd paragraphs, shall-> should

Rev 5: Added two options based on some comments

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbe Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGbe Editor” are instructions to the TGbe editor to modify existing material in the TGbe draft. As a result of adopting the changes, the TGbe editor will execute the instructions rather than copy them to the TGbe Draft.***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1893 | Jeongki Kim | 137.54 | 35.3.8 | For clarification, need to define the exact operation of STAs which can decode the critical update flag subfield. | Please add the following text to Tgbe draft."If the critical update flag is set to 0, Non-AP MLD that can decode the critical update flag can skip to parse the change sequence subfield of other APs in the RNR. Otherwise, the non-AP MLD should check the change sequence subfield of other APs in the RNR" | Revised Agree in principle with the commenter.The STA operation need to be described for the clarification as the proposed changes.TGbe editor to make the changes shown in 11-21/0399r5 under all headings that include CID 1893 |
| 1892 | Jeongki Kim | 137.49 | 35.3.8 | When the critical update for other AP(s) happens (i.e., the critical update flag = 1), if the non-AP MLD that can decode the critical update flag is not required to awaken for every DTIM Beacon frame (i.e., ReceiveDTIMs =false), the MLD may miss the Beacon/DTIM Beacon frames containing the critical update flag set to 1 so that the MLD cannot check the critical update of other APs in RNR. So, it might be dangerous if the AP shall provide this indication in the Beacon frame(s) until (and including) the next DTIM Beacon frame on the link that the AP is operating on without any clarification of the STA operation. Option 1: 2 or 3 bits critical update flag, option 2: the STA always receives DTIMs, option 3: the STA always check the change sequence subfield regardless of the value of critical update flag. See the 11-20/0036 . | Please add the following text to Tgbe draft."A STA that is not required to awaken for every DTIM Beacon frame and is able to decode the critical update flag should always check the RNR element regardless of the value of critical update flag" | Revised Agree in principle with the commenter.If the power saving STA is not required to awaken for every DTIM, the STA may not receive the critical update flag which indicates the critical update. So, those STAs need to check RNR regardless of the value of critical update flag.TGbe editor to make the changes shown in 11-21/0399r5under all headings that include CID 1892 |
| 1974 | Jinjing Jiang | 139.52 | 35.3.8 | critical update flag will be refreshed per DTIM beacon frame. What happens to the STAs that miss the DTIM beacon or that are in WNM sleep mode which do not track every DTIM beacon? | Clarify the usage of this field for STA. If a STA has the risk or the desire to skip DTIM beacons, this field with value 0 is not useful at all. | Revised Agree in principle with the commenter.If the power saving STA is not required to awaken for every DTIM, the STA may not receive the critical update flag which indicates the critical update. So, those STAs need to check RNR regardless of the value of critical update flag.TGbe editor to make the changes shown in 11-21/0399r5under all headings that include CID 1892 |
| 2818 | Srinivas Kandala | 60.36 | 9.4.1.4 | Only one bit has been assigned for Critical Updae Flag. While I understand the need to preserve the number of bits, a one bit flag is not nearly enough as two changes can flip the bit back to the previous state. This means that the receiving STAs will have to decode the rest of the frame/IE contents regardless of the value in this field. | Consider to increase it by at least one bit. There are at least two bits available in the Capability Information field | Revised Agree in principle with the commenter.The critical update flag is just the complementary bit for non-AP STA in MLD to skip the RNR for other APs. Increasing the size of critical update flag is not useful for this purpose. Generally, it might be desirable for non-AP MLD to read RNR for check the CSNs of other APs in some situation regardless of the value of critical update flag. Instead of it, we can have the following approach.If the power saving STA is not required to awaken for every DTIM, the STA may not receive the critical update flag which indicates the critical update. So, those STAs need to check RNR regardless of the value of critical update flag.TGbe editor to make the changes shown in 11-21/0399r5under all headings that include CID 1892 |
| 1899 | Jeongki Kim | 60.59 | 9.4.1.4 | The Critical Update Flag subfield can be reserved. Therefore, the Critical Update Flag subfield should be set to either 1 or 0 only if it's not reserved. For clarification, add the related condition. | add a condition to the related text | RejectedThe related text is already described in TGbe D0.3 as follows:*The Critical Update Flag subfield is reserved except when the Capability Information field is carried in a Beacon or a Probe Response frame transmitted by an AP of an AP MLD.*Therefore, we don’t need the additional text for it any more. |

**Proposed text**

**Option 1:**

**TGbe Editor: *Insert the following texts before the last second paragraph in the subclause 35.3.8***

[1893] A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to true and that supports the Critical Update Flag should ignore the Change Sequence subfield(s) of other reported AP(s) in the Reduced Neighbor Report element contained in a Beacon frame that has the Critical Update Flag equal to 0.

A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to true and that supports the Critical Update Flag shall parse the Change Sequence subfield(s) of other reported AP(s) with which the STA has enabled links in the Reduced Neighbor Report element contained in a Beacon frame that has the Critical Update Flag equal to 1.

A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to false or with no support for the Critical Update Flag shall parse the Change Sequence subfield(s) of all reported AP(s) with which the STA has enabled links in the Reduced Neighbor Report element contained in a Beacon frame independently of the value of the Critical Update Flag subfield. [1892, 1974, 2818]

**Option 2:**

**TGbe Editor: *Insert the following texts before the last second paragraph in the subclause 35.3.8***

[1893] A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to true and that supports the Critical Update Flag may ignore the Change Sequence subfield(s) of other reported AP(s) in the Reduced Neighbor Report element contained in a Beacon frame that has the Critical Update Flag equal to 0.

A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to true and that supports the Critical Update Flag should parse the Change Sequence subfield(s) of other reported AP(s) in the Reduced Neighbor Report element contained in a Beacon frame that has the Critical Update Flag equal to 1.

A non-AP STA, affiliated with a non-AP MLD, with ReceiveDTIMs equal to false or with no support for the Critical Update Flag should parse the Change Sequence subfield(s) of all reported AP(s) in the Reduced Neighbor Report element contained in a Beacon frame independently of the value of the Critical Update Flag subfield. [1892, 1974, 2818]