IEEE P802.11
Wireless LANs

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| Comment resolutions for capabilities for protected WUR frames |
| Date: 2019-08-12 |
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Abstract

This submission proposes resolutions for multiple comments related to TGba D3.0 with the following CIDs (4 CIDs):

* 3264, 3359, 3037, 3404

Revisions:

* Rev 0: Initial version of the document.

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 TGba Draft. This introduction is not part of the adopted material.

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

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

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| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 3264 | Rojan Chitrakar | 59.56 | It would be good if the WUR protection capability of a WUR STA is verified during Message 2 and 3 of the 4-way handshake used to negotiate WUR TK (as is done for management frame protection - 802.11-2016-P1193 last paragraph). The "Protected WUR Frame Support" bit then is better shifted/copied to the RSN capabilities field of the RSNE. Otherwise, the WUR capabilities element may need to be carried in Message 2 and 3 of the 4-way handshake just for this one bit. In the last round of LB the comment was rejected with following comment:TGba agree that the cited bit should be verified in the context of security procedures during 4-way handshake, and agree to use the new RSN Extension element adopted by TGm for the purposes of advertising and verifying the Protected WUR Frame Support bit. For the time being, the comment is rejected due to a lack of proper REVmd draft that TGba can use to add such solution on. | Either move or create a copy of the "Protected WUR Frame Support" bit in the RSN capabilities field of the RSNE or to the new RSN Extension element. | Revised –Agree in principle with the comment. Proposed resolution accounts for the suggested changes, and additionally removes the Protected WUR frame Support bit from the WUR Capabilities element, since it would be a duplicate.TGba editor to make the changes shown in 11-19/1430r0 under all headings that include CID 3264. |
| 3359 | Xiaofei Wang | 61.45 | The interpretation of Protected WUR Frame Support bit is effectively the same for AP and STA. Writing different statements for AP and STA is unnecessary and can cause confusion. | change the description to "1" indicating support of protected WUR frames, otherwise this bit is set to 0. | Rejected –The separation is because APs can only transmit these frames, while STAs can only receive these frames. Hence the current description is correct and unambiguous. If we rephrase as suggested by the comment then it would be ambiguous as to which device supports what functionality (TX or RX). |
| 3037 | Gaurav Patwardhan | 56.55 | WTK should have its own column in Table 9-150 for future extensibility | As in comment | Revised –Agree in principle with the comment. Proposed resolution adds the PTK with WTK as a separate column.TGba editor to make the changes shown in 11-19/1430r0 under all headings that include CID 3037. |
| 3404 | Yunsong Yang | 91.26 | Protected WUR Frame Support subfield value should be verified in the security context during 4-way handshake or Re(Association) procedure. Therefore, it is more important for both the WUR AP and WUR non-AP STA to indicate its capability of protected WUR frame support by including the Protected WUR Frame Support subfield in the RSN Extension element (RSNXE) that is newly created in the REVmd. | Add the Protected WUR Frame Support subfield to the Extended RSN Capabilities field in the RSN Extension element that is newly created in the REVmd. Change "the WUR Capabilities element" on P91L26 to "the RSNXE". And Change "a WUR Capabilities element" on P91L36 to "an RSNXE". | Revised –Agree in principle with the comment. Proposed resolution accounts for the suggested changes, and additionally removes the Protected WUR frame Support bit from the WUR Capabilities element, since it would be a duplicate.TGba editor to make the changes shown in 11-19/1430r0 under all headings that include CID 3404. |

**Discussion: *None.***

* RSN Extension element (RSNXE)

**TGba Editor: *Change the table below of this subclause as follows (#CID 3264, 3404):***

|  |
| --- |
| * Extended RSN Capabilities field
 |
| Bit | Information | Notes |
| 0–3 | Field length | The length of the Extended RSN Capabilities field, in octets, minus 1, i.e., *n* – 1. |
| 4 | Protected TWT Operations Support | The STA sets the Protected TWT Operations Support field to 1 when dot11ProtectedTWTOperationsImplemented is true, and sets it to 0 otherwise. See 10.48.1 (TWT overview). |
| 5 | Protected WUR Frame Support | For a WUR non-AP STA:* Set to 1 to indicate support for the reception of protected WUR frames. Set to 0 otherwise.

For a WUR AP:* Set to 1 to indicate support for the transmission of protected WUR frames. Set to 0 otherwise.*(#3264, 3404)*
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| 6 – (8*n* – 1) | Reserved |  |

**12.6.2 RSNA selection**

**TGba Editor: *Change the paragraph below of this subclause as follows (#CID 3264, 3404):***

A STA prepared to establish RSNAs shall advertise its capabilities by including the RSNE in Beacon, Infor­mation Response, and Probe Response frames and may also include the RSNE in DMG Beacon and Announce frames. The included RSNE shall specify all of the authentication and cipher suites enabled by the STA's policy. A STA shall not advertise any authentication or cipher suite that is not enabled. If WUR frame protection is enabled, a WUR AP shall advertise such capability by setting to 1 the Protected WUR Frame Support subfield in the RSNXE in its Beacon and Probe Response frames.*(#3264, 3404)*

**12.6.3 RSNA policy selection in an infrastructure BSS**

**TGba Editor: *Change the paragraph below of this subclause as follows (#CID 3264, 3404):***

RSNA policy selection in an infrastructure BSS utilizes the normal IEEE 802.11 association procedure. RSNA policy selection is performed by the associating STA. The STA does this by including an RSNE, and if WUR frame protection is enabled, an RSNXE with the Protected WUR Frame Support subfield set to 1 in its (Re)Association Requests.*(#3264, 3404)*

29.10 Protected WUR frames

WUR frame protection cannot be applied until the PTKSA (see 12.6.1.1.6 PTKSA) and WIGTKSA (12.6.1.1.11 (WIGTKSA)) have been established.

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 3264, 3404):***

WUR frame protection is enabled when dot11RSNAWURFrameProtectionActivated is true, and is disabled otherwise. When WUR frame protection is enabled at a WUR AP, the WUR AP shall advertise such capa­bility by setting to 1 the Protected WUR Frame Support subfield of the WUR Capabilities element in its Beacon and Probe Response frames. When WUR frame protection is enabled at a WUR non-AP STA, the WUR non-AP STA shall indicate such capability by setting to 1 the Protected WUR Frame Support subfield of the RSNXE in its (Re)Association Request frames. *(#3264, 3404)*

WUR frame protection is negotiated between the WUR AP and the WUR non-AP STA when management frame protection is negotiated, both parties set the Protected WUR Frame Support subfield to 1 in their respective RSNXEs in the (re)association procedure.*(#3264, 3404)*

* WUR Capabilities element

**TGba Editor: *Change the figure below of this subclause as follows (#CID 3264, 3404):***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0      B7 | B8 | B9      B10 | B11 | B12 | B13 | B14 | B15 |
|  | Transition Delay | VL WUR Frame Support | WUR Group IDs Support | Reserved*(#3264, 3404)* | 20 MHz WUR Basic PPDU with HDR Support | WUR FDMA Support | WUR Short Wake-up Frame Support | Reserved |
| BBits:  | 8 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| * WUR Capabilities Information field format
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**TGba Editor: *Change the table below of this subclause as follows (#CID 3264, 3404):***

|  |
| --- |
| * Subfields of the WUR Capabilities Information field
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| Subfield | Definition | Encoding |
| … |  |  |
|  |  |  |
| *(#3264, 3404)*… |  |  |

* RSNE
* Cipher suites

**TGba Editor: *Change the table below of this subclause as follows (#CID 3037):***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cipher suite selector | GTK | PTK without WTK | IGTK or BIGTK | PTK with WTK | WIGTK |
| Use group cipher suite | No | Yes | No | No | No |
| WEP-40 | Yes | No | No | No | No |
| WEP-104 | Yes | No | No | No | No |
| TKIP | Yes | Yes | No | No | No |
| CCMP-128 | Yes | Yes | No | No | No |
| BIP-CMAC-128 | No | No | Yes | Yes | Yes |
| GCMP-128 | Yes | Yes | No | No | No |
| GCMP-256 | Yes | Yes | No | No | No |
| CCMP-256 | Yes | Yes | No | No | No |
| BIP-GMAC-128 | No | No | Yes | No | No |
| BIP-GMAC-256 | No | No | Yes | No | No |
| BIP-CMAC-256 | No | No | Yes | No*(#3037)* | No |