IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | SRP Comments | | | | | | Date: 2019-04-01 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Matthew Fischer | Broadcom |  |  | [Matthew.fischer@broadcom.com](mailto:Matthew.fischer@broadcom.com) | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

Proposed language to address comments on SRP from LB238 of TGax D4.0.

Changes are referenced to TGax D4.2.

**REVISION NOTES:**

**R0**:

Initial

**R1**:

Updated to TGax D4.2

Remove CID 20615 – already addressed elsewhere

**END OF REVISION NOTES**

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

**CIDs**

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| 20342 | Kaiying Lv | 26.10.3.1 | 401.43 | Change to "SRP opportunities are identified from the value of the RXVECTOR parameter SPATIAL\_REUSE of an HE TB PPDU and/or the contents of a Trigger frame." | As in comment. | Revise - TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20342 which generally agree with the commenter’s suggestion. |
| 20343 | Kaiying Lv | 26.10.3.1 | 401.51 | change " the SR field in the Common Info field of the Trigger frame" to " the UL spatial reuse field in the Common Info field of the Trigger frame" in whole text | As in comment. | Revise - TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20343 which generally agree with the commenter’s suggestion. |
| 20559 | Mark Rison | 26.10.3.4 | 403.24 | Make the clarifications to the terms of Equation (26-7) that are suggested for triggering PPDUs in 27.3.14.2 (Equations (27-124) and (27-125)). Ditto RPL in 26.10.3.2 and UL Target RSSI in 9.3.1.22.9 and HE TB feedback NDP in 26.5.6.2 [powerprecorr] | As it says in the comment | Revise - TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20559 which generally change the description of equation components so that they are consistent and refer to fields in triggers and TRS fields when possible. |
| 20948 | Mark Rison | 26.10.3.2 | 402.17 | Re CID 16157: this change omits the L-SIG field, which sounds as if it would be included in the "legacy portion" referred to in D3.0.  Also why "or"? | Change "which is measured from the L-STF, L-LTF and L-SIG fields" | Reject – throughout the SR subclauses, the received power is indicated to be measured on L-STF and L-LTF, omitting L-SIG, as STF and LTF can be boosted. |

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| 20168 | Bo Sun | 26.2.3 | 291.01 | The term "SRG PPDU" and "Non-SRG PPDU" are confusing. Both term are used for MAC function of spatial reuse operation. But PPDU is a PHY layer conception. PHY layer has no idea what's an SRG PPDU or a Non-SRG PPDU while MAC layer only knows A-MPDU/MPDU | Change the terms "SRG PPDU" to "SRG A-MPDU/MPDU" and "Non-SRG PPDU" to "Non-SRG A-MPDU/MPDU". | Reject – the PPDU is the entity that is subject to the SR operation and it is possible to identify, through PPDU SIG field information, whether the SR operation is allowed or not, thereby creating the possibility that no MPDU is ever identified. |
| 20304 | Kaiying Lv | 26.2.3 | 297.24 | "A received PPDU that is an inter-BSS PPDU is an SRG PPDU if BSSID information from an MPDU of the PPDU is correctly received and the bit in the SRG Partial BSSID Bitmap field which corresponds to the numerical value of BSSID[39:44] is set to 1." Can this case cover the cases for VHT PPDU and HE PPDU? If yes, then the subsequent paragraphs about VHT PPDU and HE PPDU are not necessary. Or clarify that here the BSSID information is the A3 address. | Please clarify it. | Reject – It is possible for a single PPDU to pass more than one test for identification as an SRG PPDU, but this does not mean that some conditions are redundant. The conditions have been written so that one can identify a PPDU reception event wherein the received PPDU matches only one condition in the subclause, thereby rendering that condition as essential and not redundant. As an example, for the case for the commenter’s cited conditions, it is quite possible that the GROUP\_ID value is decoded correctly, but no MPDU is decoded correctly, so only one of the two suspected redundant conditions matches. |
| 20305 | Kaiying Lv | 26.2.3 | 297.28 | "A VHT PPDU that is received with RXVECTOR parameter GROUP\_ID equal to 0 is an SRG PPDU...". It should be identified as an inter-BSS PPDU first. | Change the whole sentence to "A VHT PPDU that is an inter-BSS PPDU is an SRG PPDU if the received RXVECTOR parameter GROUP\_ID equal to 0 and the bit in the SRG Partial BSSID Bitmap field that corresponds to the numerical value of bits [39:44] of the RA field of any correctly received MPDU from the PPDU is set to 1." | Revised – TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20305 which add a requirement that the AP shall set its own BSS color bitmap bit and partial BSSID bitmap bit to 0 in the SRP element. With this new condition, the color or bitmap position matching test described in the cited text can only succeed when the PPDU is indeed, definitively inter-BSS and the condition of inter-BSS therefore does not need to be added into the paragraph cited by the commenter. |
| 20306 | Kaiying Lv | 26.2.3 | 297.33 | "A VHT PPDU that is received with RXVECTOR parameter GROUP\_ID equal to 0 is an SRG PPDU...". It should be identified as an inter-BSS PPDU first. | Change the whole sentence to "A VHT PPDU that is an inter-BSS PPDU is an SRG PPDU if the received RXVECTOR parameter GROUP\_ID equal to 63 and the bit in the SRG Partial BSSID Bitmap field that corresponds to the numerical value of bits [39:44] of the TA field of any correctly received MPDU from the PPDU is set to 1." | Revised – TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20306 which add a requirement that the AP shall set its own BSS color bitmap bit and partial BSSID bitmap bit to 0 in the SRP element. With this new condition, the color or bitmap position matching test described in the cited text can only succeed when the PPDU is indeed, definitively inter-BSS and the condition of inter-BSS therefore does not need to be added into the paragraph cited by the commenter. |
| 20307 | Kaiying Lv | 26.2.3 | 297.38 | It should be identified as an inter-BSS PPDU first. | Change the whole sentence to "An HE SU PPDU, HE ER SU PPDU or HE MU PPDU that is inter-BSS PPDU is an SRG PPDU if the received RXVECTOR parameter UPLINK\_FLAG equal to 1 and the bit in the SRG Partial BSSID Bitmap field that corresponds to the numerical value of bits [39:44] of the RA field of any correctly received MPDU from the PPDU is set to 1." | Revised – TGax editor to make changes as shown in 11-19/0613r1 that are marked with CID 20307 which add a requirement that the AP shall set its own BSS color bitmap bit and and partial BSSID bitmap bit to 0 in the SRP element. With this new condition, the color or bitmap position matching test described in the cited text can only succeed when the PPDU is indeed, definitively inter-BSS and the condition of inter-BSS therefore does not need to be added into the paragraph cited by the commenter. |

**Discussion:**

xxxx

**Proposed Changes to TGax D4.2:**

***TGax editor: within subclause 9.3.1.22.9 NDP Feedback Report Poll (NFRP) variant of TGax D4.2, change the following text:***

**9.3.1.22.9 NDP Feedback Report Poll (NFRP) variant**

The UL Target RSSI subfield indicates the target RSSI at the antenna connector(s), over the PPDU bandwidth, from the non-HE portion of the preamble of the HE TB feedback NDP, averaged over all antennas used to receive the PPDU for all scheduled STAs. The resolution for the UL Target RSSI subfield is 1 dB. The UL Target RSSI subfield encoding is defined in Table 9-31h (UL Target RSSI subfield encoding). **(#20559)**

***TGax editor: within subclause 26.2.3 SRG PPDU identification of TGax D4.2, change the following text:***

**26.2.3 SRG PPDU identification**

A received HE PPDU is an SRG PPDU if the bit in the SRG BSS Color Bitmap field indexed by the value of the RXVECTOR parameter BSS\_COLOR is 1 (see 9.4.2.246 (Spatial Reuse Parameter Set element)). A received VHT PPDU is an SRG PPDU if the GROUP\_ID parameter of the RXVECTOR has a value of 0 and the bit in the SRG Partial BSSID Bitmap field which corresponds to the numerical value of PARTIAL\_AID[0:5] of the RXVECTOR is set to 1 (see 9.4.2.246 (Spatial Reuse Parameter Set element)). **(#20305)(#20306)(#20307)**

A received PPDU is an SRG PPDU if BSSID information from an MPDU of the PPDU is correctly received and the bit in the SRG Partial BSSID Bitmap field which corresponds to the numerical value of BSSID[39:44] is set to 1. **(#20305)(#20306)(#20307)**

***TGax editor: within subclause 26.10.2.3 General operation with SRG OBSS PD level of TGax D4.2, change the following text:***

**26.10.2.3 General operation with SRG OBSS PD level**

An AP that sends a Spatial Reuse Parameter Set element with the SRG Information Present subfield in the SR Control field set to 1 shall set the SRG BSS Color Bitmap and SRG Partial BSSID Bitmap fields as follows:

* If the transmitting AP is in the same ESS as another AP (i.e. with the same SSID, and connected by a DS), or is controlled by the same external management entity as another AP (irrespective of SSID), then the transmitting AP may set to 1 the bits of the SRG BSS Color Bitmap and/or SRG Partial BSSID Bitmap fields that correspond to that other AP if they do not correspond to the AP’s own BSS Color and/or Partial BSSID and if they do not correspond to those of any AP from which the most recently received HE Operation element has the BSS Color Disabled field equal to 1 **(#20305)(#20306)(#20307)**
* Else, the AP shall set the bits in the SRG BSS Color Bitmap and/or SRG Partial BSSID Bitmap to 0.

***TGax editor: within subclause 26.10.3.1 General of TGax D4.2, change the following text:***

**26.10.3.1 General**

An SRP opportunity is identified from the value of the RXVECTOR parameter SPATIAL\_REUSE of an HE TB PPDU and/or the contents of a Trigger frame. An HE STA may initiate an SR transmission during an SRP opportunity for the duration of an ongoing PPDU when certain conditions, designed to avoid interfering with the reception of the ongoing PPDU at the recipient, are met. If the RXVECTOR parameter SPATIAL\_REUSE of the ongoing PPDU has the value SRP\_DISALLOW or SRP\_AND\_NON\_SRG\_OBSS\_PD\_PROHIBITED, no SRP-based SR transmission is allowed for the duration of that PPDU. **(#20342)**

An AP sending a Trigger frame may set the Spatial Reuse *n* field(s) in the UL Spatial Reuse subfield of the Common Info field of the Trigger frame to SRP\_- DISALLOW or, if permitted by the rules in 26.11.6 (SPATIAL\_REUSE)(#20615), to SRP\_AND\_NON\_SRG\_ OBSS\_PD\_PROHIBITED to disallow OBSS STAs from performing SRP-based SR transmission during the ensuing uplink PPDU duration. An AP sending a Trigger frame shall not set the SR field in the Common Info field of the Trigger frame to SR\_DELAYED(#21485) or SR\_RESTRICTED. **(#20343)**

***TGax editor: within subclause 26.10.3.2 SRP-based spatial reuse initiation of TGax D4.2, change the following text:***

**26.10.3.2 SRP-based spatial reuse inititation**

The value of RPL is equal to the RSSI at the antenna connector(s), over the triggering PPDU bandwidth, during the non-HE portion of the HE PPDU preamble of the triggering PPDU, averaged over all antennas used to receive the PPDU. **(#20559)**

***TGax editor: within subclause 26.10.3.4 Spatial Reuse subfield of Trigger frame of TGax D4.2, change the following text:***

**26.10.3.4 Spatial Reuse subfield of Trigger frame**

Where

*TX\_PWRAP* is the total power at the antenna connector(s), in dBm per 20 MHz bandwidth, over all antennas used to transmit the PPDU containing the Trigger frame for each 20 MHz transmit bandwidth for 20 MHz, 40 MHz, and 80 MHz PPDU or in each of the 40 MHz transmit bandwidths for an 80+80 MHz or 160 MHz PPDU. **(#20559)**

Acceptable Receiver Interference LevelAP is a value in dBm normalized to a 20 MHz bandwidth (i.e., minus transmit bandwidth divided by 20 MHz bandwidth in dB) for each 20 MHz transmit bandwidth for 20 MHz, 40 MHz, and 80 MHz PPDU or in each of the 40 MHz transmit bandwidths for an 80+80 MHz or 160 MHz PPDU and should be set to value of the UL target RSSI indicated in the Trigger frame minus the minimum SNR value that yields ≤ 10% PER for the highest MCS of the ensuing uplink HE TB PPDU, minus a safety margin value not to exceed 5 dB as determined by the AP.

***TGax editor: within subclause 27.3.14.2 Power pre-correctionof TGax D4.2, change the following text:***

**27.3.14.2 Power pre-correction**

where

*TxAPpwr* is in dBm and represents the AP's transmission power and is equal to the value of the AP Tx Power subfield of the Common Info field in the Trigger frame, the encoding of which is specified in 9.3.1.22 (Trigger frame format) or the DL Tx Power subfield of the TRS Control field as specified in 9.2.4.6a.1 (TRS Control).

*DLRSSI* represents the RSSI at the antenna connector(s) of the STA, over the triggering PPDU bandwidth, during the non-HE portion of the HE PPDU preamble of the triggering PPDU, normalized to 20 MHz bandwidth. *DLRSSI* in dBm is an average of the received power over the antennas on which the average *PLDL* is being computed. If the triggering PPDU is an HT-mixed, VHT or HE PPDU, then the received power is measured from the fields prior to the HT-STF, VHT-STF or HE-STF, respectively. (#20560) **(#20559)**

**End of proposed changes.**