IEEE P802.11  
Wireless LANs

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| Initial SA Ballot Proposed Resolution for CIDs 5084, 5088, 5093 | | | | | | | | | |
| Date: 2022-05-13 | | | | | | | | | |
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Abstract

This contribution addresses 3 CIDs from the 802.11bd initial SA Ballot, CIDs 5084, 5088, and 5093.

r1: Updates made based on discussion in the TGbd meeting on 13 May 2022 AM1 during the May 2022 802.11 Interim Meeting. The resolution for CID 5088 and 5093 are ready for motion. It was suggested the resolution for CID 5084 should be reviewed by clause “31.2.5 Non-NGV duplication operation” experts.

This contribution proposes a resolution for CIDs 5091, 5092:

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| **CID** | **Commenter** | **P** | **L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 5088 | Rolfe, Benjamin | 31 | 22 | 6.3.129.3.2 | The description contains a requirement for a different parameter. The requirement "When StationCount is equal to 0, the NGVCapabilityPercentage shall be set to 0." belongs in the defintion of NGVCapabilityPercentage, the value of which apparently depends upon the value of station count. | Move to the description of NGVCapabilityPercentage. | Accept  Note to Editor:  Redline markup provided in 11-22/0769r1 |
| 5084 | Rolfe, Benjamin | 65 | 8 | 31.2.5 | "shall be set to any channel width that the CCA on secondary 10 MHz channel has been idle for a PIFS prior to the start of the RTS frame and that is less than or equal to the channel width indicated in the RTS frame’s RXVECTOR parameter CH-BANDWIDTH\_IN\_NON\_NGV." seems to be missing something - maybe "that the CCA on the secondary 10 MHz channel indicates has been idle" ??? | Clarify. See comment for suggested insertion of missing words. | Revised  Agree in principle with the commenter, the behavior is not clearly specified. Clarifying text is added.  See 11-22/0769r1 for redline edits |
| 5093 | Motozuka, Hiroyuki | 133 | 20 | B.4.38.3 | 6.3.129 should be added as references for NGVE1.1. | As in the comment | Revised  Agree in principle with commenter. See 11-22/0769r1 for redline edits.  Note to Editor: Additional editorial clean up also provided |

The follow redline is based on 802.11bd D4.0

**CID 5088:**

* Semantics of the service primitive

The primitive parameters are as follows:

MLME-RADIOENVIRONMENT.indication(

StationCount,

NGVCapabilityPercentage,

ChannelBusyPercentage  
)

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| Name | Type | Valid range | Description |
| StationCount | Integer | 0-65 535 | Indicates the number of unique individual station MAC addresses detected during the most recent measurement period of duration dot11RadioEnvironmentMeasurementPeriod. |
| NGVCapabilityPercentage | Integer | 0-100 | Indicates the percentage of the stations indicated in StationCount whose transmissions contain indication of NGV capability. When StationCount is equal to 0, the NGVCapabilityPercentage shall be set to 0. |
| ChannelBusyPercentage | Integer | 0-100 | The percentage of time the channel was busy during the most recent measurement of duration dot11RadioEnvironmentMeasurementPeriod. The channel is busy when the NGV STA is either transmitting or its clear channel assessment function indicates the channel is busy. It is calculated as follows: |

**CID 5084:**

* Non-NGV duplication operation

A 20 MHz NGV STA may transmit RTS frames in non-NGV duplicate PPDUs to protect a 20 MHz NGV PPDU.

A 20 MHz NGV STA that is addressed by an RTS frame in a non-NGV or non-NGV duplicate PPDU that has a bandwidth signaling TA and that has the RXVECTOR parameter DYN\_BANDWIDTH\_IN\_NON\_NGV equal to Static behaves as follows:

* If the NAV indicates idle and CCA indicates idle for the secondary 10 MHz channel when the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV is equal to CBW20, then the STA shall respond with a CTS frame carried in a non-NGV or non-NGV duplicate PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_NGV shall be set to CBW20.
* If the NAV indicates idle when the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV is equal to CBW10, then the STA shall respond with a CTS frame carried in a non-NGV PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_NGV shall be set to CBW10.
* Otherwise, the STA shall not respond with a CTS frame.

A 20 MHz NGV STA that is addressed by an RTS frame in a non-NGV or non-NGV duplicate PPDU that has a bandwidth signaling TA and that has the RXVECTOR parameter DYN\_BANDWIDTH\_IN\_NON\_NGV equal to Dynamic behaves as follows:

* If the NAV indicates idle and the CCA indicates idle for the secondary 10 MHz channel when the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV is equal to CBW20, then the 20 MHz NGV STA shall respond with a CTS frame in a non-NGV or non-NGV duplicate PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_NGV shall be set to CBW20.
* If the NAV indicates idle and the CCA indicates busy for the secondary 10 MHz channel when the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV is equal to CBW20, then the 20 MHz NGV STA shall respond with a CTS frame in a non-NGV PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_NGV shall be set to CBW10.
* If the NAV indicates idle when the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV is equal to CBW10, then the 20 MHz NGV STA shall respond with a CTS frame in a non-NGV PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_NGV shall be set to CBW10.
* Otherwise, the STA shall not respond with a CTS frame.

If a 20 MHz NGV STA receives a frame that solicits a response and is carried in a 20 MHz NGV PPDU, it should transmit the response in a 20 MHz non-NGV duplicate PPDU.

**Reference text from 802.11rme D1.2:**

If the NAV indicates idle, then the STA shall respond with a CTS frame in a non-HT or non-HT duplicate PPDU after a SIFS. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_HT shall be set to any channel width for which CCA on all secondary channels has been idle for a PIFS prior to the start of the RTS frame and that is less than or equal to the channel width indicated in the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_HT.

During an SP, a CMMG STA that is the destination CMMG STA of the SP and that is addressed by an RTS frame in a CMMG PPDU that has the RXVECTOR parameter DYN\_BANDWIDTH equal to Dynamic behaves as follows:

— If the NAV indicates idle in the primary 540 MHz channel, then the STA shall respond with a DMG CTS frame carried in a CMMG PPDU after a SIFS. The DMG CTS frame’s TXVECTOR parameter CH\_BANDWIDTH shall be set to 540 MHz if the CCA on the secondary 540 MHz channel is detected as busy and shall be set to 1080 MHz if the CCA on the secondary 540 MHz channel is detected as idle and the channel width indicated in the RTS frame’s RXVECTOR parameter

CH\_BANDWIDTH is 1080 MHz.

**CID: 5093**

* NGV extended MAC service features

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| Item | Feature | References | Status | Support |
|  | Are the following NGV extended MAC service features supported? |  |  |  |
| NGVE1 | NGV extended MAC service features |  |  |  |
| NGVE1.1 | NGV extended MAC service features - MLME; 5.9 GHz band | 6.3.128 ( Cancel transmissions of MSDUs (#3045))  6.3.129 ( NGV radio environment measurement) | CFNGV:M | Yes o No o N/A o |
| NGVE1.2 | NGV extended MAC service features - MLME; DMG | 6.3.130 ( DMG operation outside the context of a BSS (#3045)) | CFNGV60:M | Yes o No o N/A o |

**References:**