IEEE P802.11
Wireless LANs

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| Non-NGV Duplicate PPDU |
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Abstract

This submission adds the MAC changes to support 20MHz PPDU transmission in 802.11bd D0.3:

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Revisions:

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.***

Disussion: in 802.11 baseline the non-HT duplicate PPDU is introduced to support the coexistence between STAs supporting wider bandwidth and STAs supporting narrower hannel bandwidth, e.g. 80MHz VHT STAs vs 20MHz 11a STAs. The non-HT duplicate PPDU is mainly used to carry the initiating control frame and responding control frames. Sometimes it is used to carry the broadcast Management frames, Beacon, FILS Discovery. In 802.11bd, the non-HT duplicate PPDU will be used to carry RTS, CTS, Ack, BA.

**3. Definitions, acronyms, and abbreviations**

**3.1 Definitions**

***TGbd editor: Insert the following definition at the end of 3.1:***

**non-NGV duplicate:** A transmission format of the physical layer (PHY) that duplicates a 10 MHz non-NGV transmission in two adjacent 10 MHz channels and allows a non-NGV station (STA) or NGV station on either one of the 10 MHz channels to receive the transmission.

***TGbd editor: Change the dynamic bandwidth operation definition as follows:***

**dynamic bandwidth operation**: A feature of a very high throughput (VHT) station (STA) or a NGV STA in which the request-to-send/clear-to-send (RTS/CTS) exchange, using non-high-throughput (non-HT) duplicate physical

layer (PHY) protocol data units (PPDUs) or non-NGV duplicate PPDUs respectively, negotiates a potentially reduced channel width (compared to the channel width indicated by the RTS) for subsequent transmissions within the current transmission opportunity (TXOP).

***TGbd editor: Change the bandwidth signaling TA definition as follows:***

**bandwidth signaling transmitter address (TA):** A TA that is used by a very high throughput (VHT)

station (STA) or a NGV STA to indicate the presence of additional signaling related to the bandwidth to be used in

subsequent transmission in an enhanced distributed channel access (EDCA) transmission opportunity

(TXOP). It is represented by the IEEE medium access control (MAC) individual address of the transmitting

VHT STA or a NGV STA but with the Individual/Group bit set to 1.

**31. Next Generation V2X (NGV) MAC specification**

***TGbd editor: Add the following subclause in subclause 31:***

**31.a non-NGV duplication operation**

A 20MHz NGV STA may transmit RTS in non-NGV duplicate PPDU to protect the 20MHz NGV PPDU where the frames in the 20MHz PPDU are addressed to another 20MHz NGV STA.

A 20MHz 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 has been idle for the secondary 10MHz channel in the channel width

indicated by the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV, 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 the same value as the RTS frame’s RXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_NGV.

— Otherwise, the STA shall not respond with a CTS frame.

A 20MHz 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, then the 20MHz 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 any channel width for which CCA on secondary 10 MHz channel has been idle and that is less than.

— Otherwise, the STA shall not respond with a CTS frame.

If a 20MHz NGV STA receives the frame(s) which solicits the responding frame and is carried in a 20MHz NGV PPDU, the 20MHz NGV STA should transmit the responding Ack, BA in non-NGV duplicate PPDU.

**31.2.2 Channel scanning and transmission methods for 20 MHz OCB transmission**

*TGbd editor: Change “20 MHz NGV PPDU” to “20 MHz NGV PPDU or 20 MHz non-NGV duplicate PPDU” through the subclause.*

*TGbd editor: Change “20 MHz NGV PPDU transmission” to “20 MHz NGV PPDU transmissionor or 20 MHz non-NGV duplicate PPDU transmission” through the subclause.*