Clarification on applying MU EDCA parameter set

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Abstract

- **Proposing to clarify the condition for applying MU EDCA parameter set**
  - In case of QoS Data frames with Ack Policy subfield set to No Ack

Recap: MU EDCA mode

25.2.3 Obtaining an EDCA TxOP for UL MU capable STAs

(MAC Motion #91)An UL MU capable non-AP HE STA that receives a Basic Trigger frame that contains a Per User Info field with the AID of the STA, and that receives an immediate response from the AP for the transmitted Trigger-based PPDU, shall:

— Update its CWmin[AC], CWmax[AC] and AIFSN[AC] state variables to the values contained in the most recently received MU EDCA Parameter Set element sent by the AP to which the STA is associated, for all the ACs from which QoS Data frames were transmitted in the HE trigger-based PPDU.

— Update its HEMUEDCATimer state variable to the values contained in the most recently received MU EDCA Parameter Set element sent by the AP to which the STA is associated.

- **Conditions to switch to MU mode from Legacy mode**
  - Basic-variant trigger frame
  - QoS Data frames
  - Immediate response for the HE TRIG PPDU

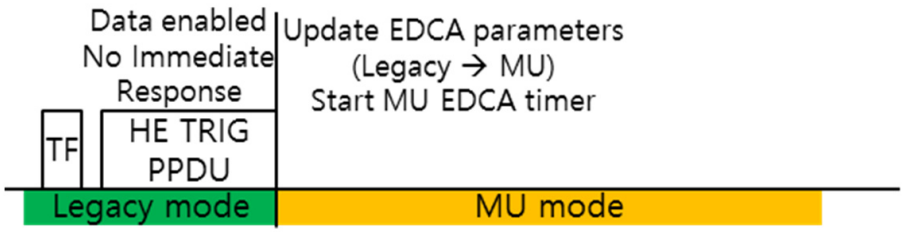
Immediate response for transmitted trigger-based PPDU

- **It is necessary to consider an immediate response for the transmitted HE TRIG PPDU in order to apply the MU EDCA timer**
  - If a basic variant Trigger frame was sent to solicit control frame (UL MU Ack) only, then the solicited STA does not have to switch to MU mode
  - If a STA solicited by a basic variant Trigger frame failed to transmit HE TRIG PPDU successfully (CCA busy, data or M-BA lost), it should access the medium with SU mode
- **However, some QoS data frames may not solicit immediate response frames**
  - A STA may transmit QoS Data with Ack policy field set to No Ack within an A-MPDU following Data Enabled No Immediate Response context

Proposed fix

- **We propose to define a rule for applying MU EDCA parameter set in case a STA transmitted QoS Data frames with Ack Policy subfield set to No Ack**

NOTE—A non-AP STA that transmitted QoS Data frames with Ack policy set to No Ack updates its EDCA access parameters to the values contained in the MU EDCA Parameter Set element at the end of the transmitted Trigger-based PPDU.



Strawpoll

- **Do you support to instruct the TGax Editor to make the following changes:**

TGax Editor: add the note below of 25.2.3 as follows:

An UL MU capable non-AP HE STA that receives a Basic Trigger frame that contains a Per User Info field with the AID of the STA, and that receives an immediate response from the AP for the transmitted Trigger-based PPDU, shall:

— Update its CWmin[AC], CWmax[AC] and AIFSN[AC] state variables to the values contained in the most recently received MU EDCA Parameter Set element sent by the AP to which the STA is associated, for all the ACs from which QoS Data frames were transmitted in the HE trigger-based PPDU.

— Update its HEMUEDCATimer state variable to the values contained in the most recently received MU EDCA Parameter Set element sent by the AP to which the STA is associated.

The HEMUEDCATimer shall uniformly count down to 0 when its value is nonzero.

NOTE—A non-AP STA that transmitted QoS Data frames with Ack policy set to No Ack updates its EDCA access parameters to the values contained in the MU EDCA Parameter Set element irrespective of receiving immediate response from the AP.