IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GCR NDP Feedback | | | | |
| Date: 2020-01-18 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Boyce Bo Yang | Huawei | Nanjing, China |  | yangbo59@huawei.com |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes the solution for GCR NDP feedbacks to reduce overhead for an AP soliciting acknowledgements from a large number of multicast recipients

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

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

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

**Discussion: the changes are made based on the mechanism discussed in IEEE 802.11-20/1976r2**.

**9.3.1.22.9 NFRP Trigger frame format**

**TGbc Editor: *Change Figure 9-64l as follows:***

12

7

7

4

9

8

16

1

Starting AID

Reserved

Feedback Type

Reserved

UL Target Receive Power

Multiplexing Flag

GCR ACK Starting Sequence Control (Optional)

GCR ACK Sequence Span

(Optional)

Bits：

**TGbc Editor: *Insert a new row in Table 9-31k (Feedback Type subfield encoding) as follows and update the Reserved row as appropriate:***

*Table 9-31k – Feedback Type subfield encoding*

|  |  |
| --- | --- |
| **Value** | **Description** |
| 1 | GCR acknowledgement request |

**TGbc Editor: *Insert the following paragraphs at the end of this subclause:***

The GCR ACK Starting Sequence Control subfield and the GCR ACK Sequence Span subfield are optionally present if the value of the Feedback Type subfield is 1. The Starting Sequence Number subfield of the GCR Starting Sequence Control subfield contains the sequence number of the first MSDU or A-MSDU for which this NFRP frame is sent. The Fragment Number subfield of the GCR Starting Sequence Control subfield is set to 0. The GCR Sequence Span subfield indicates the number of MSDUs or A-MSDUs that need to be acknowledged, starting from the MSDU or A-MSDU with the sequence number as indicated in GCR ACK Starting Sequence subfield.

**9.4.2.248.2 HE MAC Capabilities Information field**

**TGbc Editor: *Change the corresponding part of Figure 9-788b as follows:***

~~Reserved~~

GCR NDP feedback Report Support

OM Control Support

OFDMA RA Support

Maximum A-MPDU Length Exponent Extension

A-MSDU Fragmentation Support

Flexible TWT Schedule Support

Rx Control Frame To MultiBSS

BSRP BQRP A-MPDU Aggregation

Bits：

1

1

1

2

1

1

1

1

B24

B25

B26

B27

B28

B29

B30

B31

B32

**TGbc Editor: *Change Table 9-322a (Subfields of the HE MAC Capabilities Information field) as follows:***

*Table 9-322a – Subfields of the HE MAC Capabilities Information field*

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| NDP Feedback  Report Support | For an AP, indicates support for the NDP feedback report procedure for resource request.  For a non-AP STA, indicates support for responding to an NFRP Trigger frame with feedback type equals to Resource request. | Set to 1 if supported.  Set to 0 otherwise. |
| GCR NDP Feedback  Report Support | For an AP, indicates support for the GCR NDP feedback report procedure for GCR acknowledgement request.  For a non-AP STA, indicates support for responding to an NFRP Trigger frame with feedback type equals to GCR acknowledgement request. | Set to 1 if supported.  Set to 0 otherwise |

**26.5.7 NDP feedback report procedure**

**TGbc Editor: *Inset new subclause following 26.5.7.4 NDP feedback report for a resource request as follows:***

26.5.7.5 NDP feedback report for a GCR acknowledgement request

If the Feedback Type subfield in the User Info field of the NFRP Trigger frame is 1, a STA that is scheduled shall send an NDP feedback report response in order to signal to the AP that it is in the awake state and that it correctly received all MSDUs or A-MSDUs as indicated in NFRP Trigger frame.

Each STA that is scheduled is assigned a STARTING\_STS\_NUM and an RU\_TONE\_SET\_INDEX to transmit a FEEDBACK\_STATUS bit.

The meaning of the FEEDBACK\_STATUS bit is defined in Table 26-3a (FEEDBACK\_STATUS description when Feedback Type subfield equals to 1):

Table 26-3a – FEEDBACK STATUS description when Feedback Type subfield equals to 1

|  |  |
| --- | --- |
| **FEEDBACK\_STATUS** | **Condition** |
| 0 | The STA is in the awake state and reports acknowledgements of all MSDUs or A-MSDUs as indicated in NFRP Trigger frame. |
| 1 | The STA is in the awake state and reports that at least one of the MSDUs or A-MSDUs as indicated in NFRP Trigger frame is not correctly received. |