IEEE P802.11
Wireless LANs

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| 11ac NDPA frame format |
| Date: 2011-03-14 |
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Abstract

This document provides resolution for the comments listed below

Notes on this document:

* Comments are from: 11-11-0276-00-00ac-tgac-d0-1-comments.xls.
* Comments refer to: Draft P802.11ac\_D0.1.pdf.
* In providing instruction for spec editing, the following conventions are used.
	+ Red text indicates changes to be applied to existing text in Draft P802.11ac\_D0.1.pdf.
	+ Text in blue is text copied from the 802.11n-2009 baseline that was not shown in the 11ac draft and that need be added to the draft, with the modifications shown in green.
	+ Text in black is unmodified text from Draft P802.11ac\_D0.1.pdf.
	+ Italic light gray text indicates instruction to the editor.

Comments

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 912 | 7.2.1.11 | 9 | 18 | TR | Reduce the sounding sequence number in NDPA to 6 bits; this is still a sufficient number of bits and allows for 2 reserved bits; it also matches with another proposal from another comment about reducing the sequence number from 8 to 6 in sounding Poll frame  | Reduce the sounding sequence number in NDPA to 6 bits, Reserved bits are in position 128-129 | Agree. As in comment  | MU |
| 801 | 7.2.1.11 | 9 | 24 | TR | The text provides a reference to sub-section 7.1.4 for the definition of the duration/ID field of the NDPA. However, sub-clause 7.1.4 provides the definition for the duration/ID field for Management and Data frame and NDPA is a control frame. Need a definition for duration/ID field of the NDPA frame. | The duration/ID value of the NDPA frame is the time, in microseconds, that covers the transmission of all NDPs, compressed feedback reports from the STAs that are indicated in the NDPA, and multiple SIFS between tranmissions. For example, if the NDPA contains n number of STAs, the duration is, in microseconds, the sum of the following frames: 1xNDP, (n-1)xSounding Poll frames plus nxCompressed feedback report frames plus 2nxSIFS. If the sounding poll frame is replaced by NDP (see next comment regarding the sounding poll frame) then the duration value of NDPA is the sum of nxNDP plus nxCompressed feedback frames plus 2nxSIFS | Modified. Changed to 7.1.4.2 which defines general rules for setting the Duration field. Added the rules in 7.1.4.2 | MU |
| 28 | 7.2.1.11 | 9 | 12 | TR | NDPA is a control frame; however, there is no definition of subtype in Table 7-1 and should be added.  | Add a new subtype for NDPA in Table 7-1.  | Reject. Table 7-1 is not supposed to define the subtypes. | MAC |
| 30 | 7.2.1.11 | 9 | 12 | TR | The rule for setting Duration/ID field in NDPA is not defined in the draft.  | Add the sentences for Duration/ID setting rule definition.  | Modified. Changed to 7.1.4.2 which defines general rules for setting the Duration field. Added the rules in 7.1.4.2 | MU |
| 27 | 7.2.1.11 | 9 | 12 | ER | "NDPA" in TGac D0.1 is a control frame to inform the existence of an NDP of VHT format following NDPA itself and specify the following sequence (the order and the number of users to be requested CSI feedback). On the other hands, "NDP Announcement" in REVmbD4.01 is just one-bit flag to inform whether an NDP of HT format follows a control frame that includes HT Control field or not as described in 7.1.3.5a. The terms between "NDPA" in TGac D0.1 and "NDP Announcement" in REVmbD4.01 are almost identical phrase but the definitions are quite different, which may make confusion.  | To avoid confusion, the name of "NDPA" in TGac D0.1 should be changed to "VHT NDPA frame".  | Reject | MAC |
| 762 | 7.2.1.11 | 10 | 9 | TR | Add description of STA ID | AID of the STA expected to prepare for the sounding feedback | Modified. As In comment | MU |

**Proposed resolution**

*Instructions to the Editor:*

 *Red text indicates changes to be applied to existing text in Draft P802.11ac\_D0.1.pdf.*

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***Italic light gray text indicates instruction to the editor***

#### 7.2.1.11 NDPA

The frame format for the NDPA is shown in Figure 7-16e.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Frame Control | Duration | RA | TA | Sounding Sequence | STA Info 1 | … | STA Info *n* | FCS |
| Octets: 2 | 2 | 6 | 6 | 1 | 2 |  | 2 | 4 |

Figure 7-16e—NDPA

|  |  |  |
| --- | --- | --- |
|  | Reserved | Sequence number |
| Bits: | 2 | 6 |

Figure 7-16f—Sounding sequence field

The Duration field is set as defined in 7.1.4.2 ~~(Duration/ID field (QoS STA));~~

The NDPA contains at least one STA Info field. If the NDPA contains only one STA Info field, then the RA field is set to the MAC address of the STA identified by the ~~STA~~ value of the AID subfield of the STA Info field. If the NDPA contains more than one STA Info fields, then the RA field is set to the broadcast address.

The TA field is set to the MAC address of the STA transmitting the NDPA.

The Sounding Sequence field ~~indicates~~ contains a sequence number associated to the current sounding sequence.

The format of the STA Info field is shown in .

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0-B11 | B12 | B13-B15 |
|  | ~~STA~~ AID | Feedback type | Nc Index |
| Bits: | 12  | 1 | 3 |

Figure 7‑2--STA Info field

The subfields in the STA Info field are described in .

Table ‑a--STA Info Element subfields

|  |  |
| --- | --- |
| **Field** | **Description** |
| ~~STA~~AID | Contains the AID of the STA expected to process the following NDP frame and prepare for the sounding feedback  |
| Feedback Type | Indicates the type of feedback requested.Set to 0 for SU.Set to 1 for MU. |
| Nc Index | Indicates the feedback dimension requested if the Feedback Type field is set to 1 ~~MU~~:Set to 0 to request Nc = 1Set to 1 to request Nc = 2…Set to 7 to request Nc = 8Reserved if the Feedback Type field is set to 0 ~~SU.~~ |

***Add the following section from the baseline:***

**7.1.4.2 Setting for single and multiple protection under enhanced distributed channel**

**access (EDCA)**

***in point a), add paragraph labeled as 7) after paragraph labeled as 6)***

7) For an NDPA frame, the Duration/ID field is set to the estimated time required to transmit the following NDP, the response VHT Compressed Beamforming report frame plus two SIFS intervals; For a Sounding Poll frame, the Duration/ID field is set to the estimated time required to transmit the response VHT Compressed Beamforming report frame plus one SIFS interval;

***in point b) paragraph 4) Change the definition of TPENDING as follows***

*TPENDING* is the estimated time required for the transmission of

— Pending MPDUs of the same AC

— Any associated immediate response frames

— Any NDP transmissions and explicit or VHT Compressed Beamforming feedback response frames

— Any Sounding Poll transmissions and VHT Compressed Beamforming feedback response frames

— Applicable IFS durations

— Any RDG