IEEE P802.11
Wireless LANs

|  |
| --- |
| Comment Resolution for CID 3 et al. |
| Date: 2013-08-01 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Alfred Asterjadhi | Qualcomm Inc. | 5775 Morehouse Dr San Diego, CA 92109 | +1-858-658-5302 | aasterja@qti.qualcomm.com |
| Shoukang ZHENG | I2R |  |  | skzheng@i2r.a-star.edu.sg |

Abstract

This document provides comment resolution for TGah Draft 0.1 Comment Collection 9 with these CIDs:

3, 154, 155, 156, 358, 589, 930, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, and 958.

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

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

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **P.L** | **SC** | **Comment** | **Proposed Change** | **Resolution** |
| 3 | 47.40 | 8.3.4a.1 | NDP ACK and Modified ACK frames have many TBDs. | Clearly specify mapping of different values of ACK policy and ACK indication fields. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 154 | 47.46 | 8.3.4a.1.3 | Redundant words. | The NDP ACK frame used to respond to all frames other than a NDP PS-Poll frame is responded by a NDP ACK frame described in this sub-clause | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 155 | 48.25 | 8.3.4a.1.3 | The Relay can share TXOP with both AP and Non-AP STA. | Change to "The Relayed Frame field may be set to 1 only if the More Data field was set to 0 in the frame most recently received from the non-AP STA or AP". | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 156 | 49.6 | 8.3.4a.1.3 | The Relay can share TXOP with both AP and Non-AP STA. | Change to "The Relayed Frame field may be set to 1 only if the More Data field was set to 0 in the frame most recently received from the non-AP STA or AP". | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 358 | 48.3 | 8.3.4a.1.3 | found a TBD | Replace the TBD with appropriate text | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 589 | 47.55 | 8.3.4a.1.3 | Put space before (1 MHz) and space before MHz in Table 8-33h --NDP MAC frame body of NDP ACK (1 MHz). | Per comment. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 930 | 48.3 | 8.3.4a.1.3 | ACK ID bit length TBD | Bit length of ACK ID is 9 | Accepted – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 939 | 48.7 | 8.3.4a.1.3 | ACK ID computation TBD | The ACK ID field is 9 bits in length and computed based on the partial FCS and the information from the scrambling seed in the SERVICE field of the eliciting frame being acknowledged for the computation of the ACK ID for NDP ACK frame.ACK ID[0:8]= FCS[0x:x+8] XOR (Service[0:6] || Service[0:1]), where FCS and Service fields are from the eliciting frame being acknowledged. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 940 | 48.16 | 8.3.4a.1.3 | Duration TBD | Duration bit length is 10 | Accepted – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 941 | 48.20 | 8.3.4a.1.3 | TU TBD | The Duration field is 10 bits in length for 1 MHz. It is used to indicate either the period of time, starting from the end of the current frame transmission, that there will be no data transmission for the STA being acknowledged if Duration Indication is set to 1, or the duration for all frames transmitted during CP, and under HCF for frames transmitted during the CFP, if Duration Indication is set to 0. The time unit (TU) for Duration Indication = 0 is 1 millisecond and for for Duration Indication = 1 is 40 microsecond. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 942 | 48.21 | 8.3.4a.1.3 | Equivalent ACK Indication for (Modified) NDP ACK is accepted in SFD | Insert the following text "Equivalent ACK Indication: Duration Indication = 0 and Duration = 0 indicates No Response; Duration Indication = 1 and Duration = 0 indicates Long Response. " | Revised – The commenter is right. No additional changes are needed because this was already addressed by comment resolution document 821r1: NDP (Modified) ACK- No Response if Duration Indication field value is 0 and Duration field value is 0-Long Response if Duration Indication field value is 1 and Duration field value is 0”. |
| 943 | 48.25 | 8.3.4a.1.3 | Reserved field bit length should be specified | Reserved field should be removed | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 944 | 48.28 | 8.3.4a.1.3 | ACK ID bit length TBD | bit length of ACK ID is 16 | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 945 | 48.49 | 8.3.4a.1.3 | ACK ID computation TBD | The ACK ID field is 16 bits in length and computed based on the partial FCS and the information from the scrambling seed in the SERVICE field of the eliciting frame being acknowledged for the computation of the ACK ID for NDP ACK frame.ACK ID[0:15]=FCS[0:15] XOR (Service[0:6] ||Service[0:6] ||Service[0:1]), where FCS and Service fields are from eliciting frame being acknowledged. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 946 | 48.58 | 8.3.4a.1.3 | Duration TBD | Duration bit length is 17 | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 947 | 48.63 | 8.3.4a.1.3 | TU TBD | The Duration field is 17 bits in length for the bandwidth equal or larger than 2 MHz. It is used to either indicate the period of time, starting from the end of the current frame transmission, that there will be no data transmission for the STA being acknowledged if Duration Indication is set to 1, or the duration for all frames transmitted during CP, and under HCF for frames transmitted during the CFP, if Duration Indication is set to 0. The time unit (TU) for Duration Indication = 0 is 1 millisecond and for for Duration Indication = 1 is 40 microsecond. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 948 | 48.64 | 8.3.4a.1.3 | Equivalent ACK Indication for (Modified) NDP ACK is accepted in SFD | Insert the following text "Equivalent ACK Indication is described in Table 8-33h" | Revised – The commenter is right. However, no additional changes are needed because this was already addressed by comment resolution document 821r1: NDP (Modified) ACK- No Response if Duration Indication field value is 0 and Duration field value is 0-Long Response if Duration Indication field value is 1 and Duration field value is 0”. |
| 949 | 49.10 | 8.3.4a.1.3 | Reserved field bit length should be specified | Reserved field should be removed | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 950 | 49.15 | 8.3.4a.1.4 | NDP Modified ACK is not consistent with the SFD term of Modified NDP ACK | Change NDP Modified ACK to Modified NDP ACK | Revised –The term NDP Modified ACK is widely used in the draft and is more appropriate identifying the frame, while Modified NDP ACK is not.TGah editor to change Modified NDP ACK with NDP Modified ACK throughout the draft. |
| 951 | 49.37 | 8.3.4a.1.4 | ACK ID bit length TBD | ACK ID bit length is 18 | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 952 | 49.37 | 8.3.4a.1.4 | ACK ID computation TBD | The ACK ID field is 18 bits in length and computed based on RA, TA and CRC fields of eliciting NDP PS-Poll frame. ACK ID[0:17]= RA[0:8] || (CRC[0:3] || CRC[0:3] || CRC[0]) XOR TA [0:8]) , where RA, TA and CRC fields are from eliciting NDP PS-Poll frame being acknowledged. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 953 | 49.44 | 8.3.4a.1.4 | Reserved field bit length should be specified | Reserved field bit length is 3. Reserved field bits are set to 1. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 954 | 49.61 | 8.3.4a.1.4 | ACK ID bit length TBD | bit length of ACK ID is 18 | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 955 | 49.61 | 8.3.4a.1.4 | ACK ID computation TBD | The ACK ID field is 18 bits in length and computed based on RA, TA and CRC fields of eliciting NDP PS-Poll frame. ACK ID[0:17]= RA[0:8] || (CRC[0:3] || CRC[0:3] || CRC[0]) XOR TA[0:8]) , where RA, TA and CRC fields are from eliciting NDP PS-Poll frame being acknowledged. | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 956 | 50.9 | 8.3.4a.1.4 | Duration TBD | Duration bit length is 17 | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |
| 957 | 50.10 | 8.3.4a.1.4 | Equivalent ACK Indication for (Modified) NDP ACK is accepted in SFD | Insert the following text "Equivalent ACK Indication is described in Table 8-33h" | Revised – The commenter is right. However, no additional changes are needed because this was already addressed by comment resolution document 821r1: NDP (Modified) ACK- No Response if Duration Indication field value is 0 and Duration field value is 0-Long Response if Duration Indication field value is 1 and Duration field value is 0”. |
| 958 | 50.11 | 8.3.4a.1.4 | Reserved field bit length should be specified | Reserved field should be removed | Revised – Tgah editor to make changes shown in 11-13-1027r3 under the heading for CID 3. |

**Discussion:** *There are many TBDs for NDP ACK and NDP Modified ACK frames. Proposed comment resolution is to be inline with the SFD as follows:*

1. *NDP ACK frames*

*ACK IDs for NDP ACK are set to the bit sequences obtained as concatenation of the scrambler and FCS fields*

* *SFD indicates that short ACK shall include an ACK ID and use [12/324r2, Motion4] partial FCS and the information from the scrambling seed in the SERVICE field of the frame being acknowledged for the computation of the ACK ID*

*Duration field size set to 10 and 14 and can indicate either NAV duration with a 40us resolution of up to 40ms or an idle period following the NDP ACK of up to 1023ms.*

1. *NDP Modified ACK*
	1. *ACK ID for NDP modified ACK are set to the bit sequences obtained from the concatenation of CRC, RA, TA of the NDP PS-Poll:*

*SFD indicates that NDP Modified ACK will have an ACK ID + ACK ID Extension = 18-21 bits where ACK ID & ACK ID Extension computation based on all or part of PBSSID(9)+PAID(9)+CRC(4)*

*We can use the Duration Indicaiton field to differentiate between an ACK ID Extension and an Idle period in a similar fashion with NDP ACK. This way, with an ACK ID extension the NDP PS-Poll can have an ACK ID extended from 9 bits to 19 bits for the 1MHz case.*

* **NDP ACK**

**Instruction to Editor: *Please make the following changes in clause 8.3.4a.1.3:***NDP MAC frame body of NDP ACK frame contains the information listed in Table 8-33h (NDP MAC frame body of NDP ACK (1MHz)) and Table 8-33i (NDP MAC frame body of NDP ACK (≥2MHz)). The NDP ACK frame used to respond to all frames other than a NDP PS-Poll frame is described in this sub-clause.

|  |
| --- |
| * **NDP MAC frame body of NDP ACK (1MHz)**
 |
| Field | Size (bits) | Description |
| NDP MAC Frame Type | 3 | NDP MAC Frame Type field is set to 2 |
| ACK ID | 9 | The ACK ID field is 9 bits in length and is set to the bit sequence Scrambler Initialization[0:6] || FCS[30:31] (“||” is concatenation) obtained from the Scrambler Initialization value in the Service field (as defined in 24.3.9.2 (Service field)) prior to descrambling, and the FCS field of the PSDU that carries the soliciting frame. |
| More Data | 1 | The More Data field is described in 8.2.4.1.8. |
| Duration Indication | 1 | The Duration Indication field is 1 bit in length and is set to 0 if the value of the Duration field sets the NAV as described in 8.2.5 (Duration/ID field (QoS STA)). Otherwise, it is set to 1 if the value of the Duration field indicates an idle period. |
| Duration | 10 | The Duration field is 10 bits in length. If the Duration Indication field is set to 0 the Duration field is set as described in 8.2.5.7 (Setting for control response frames) where the value is expressed in multiples of 40us. If the Duration value is set to 1 the Duration field is set to the duration of time, in milliseconds, during which an idle period (during which there is no frame transmission) is expected from the STA that elicited the response, starting from the end of the NDP ACK response.  |
| Relayed Frame | 1 | The Relayed Frame field is 1 bit in length and it is set as described in 9.32n.3 (Procedures TXOP sharing) and 9.32n.3.3 (Flow Control).  |
|  |  |  |

The NDP MAC frame body of NDP ACK for >=2MHz has the structure defined in Table 8-33i (NDP MAC frame body of NDP ACK (≥2MHz)).

|  |
| --- |
| * **NDP MAC frame body of NDP ACK (≥2MHz)**
 |
| Field | Size (bits) | Description |
| NDP MACFrame Type | 3 | NDP MAC Frame Type field is set to 2 |
| ACK ID | 16 | The ACK ID field is 16 bits in length and is set to the bit sequence Scrambler Initialization[0:6] || FCS[23:31] (“||” is concatenation) obtained from the Scrambler Initialization value in the Service field (as defined in 24.3.9.2 (Service field)) prior to descrambling, and the FCS field of the PSDU that carries the soliciting frame. |
| More Data | 1 | The More Data field is described in 8.2.4.1.8. |
| Duration Indication | 1 | The Duration Indication field is 1 bit in length and is set to 0 if the value of the Duration field sets the NAV as described in 8.2.5 (Duration/ID field (QoS STA)). Otherwise, it is set to 1 if the value of the Duration field indicates an idle period. |
| Duration | 14 | The Duration field is 14 bits in length.If the Duration Indication field is set to 0 the Duration field is set as described in 8.2.5.7 (Setting for control response frames). If the Duration value is set to 1 the Duration field is set to the duration of time, in milliseconds, during which an idle period (during which there is no frame transmission) is expected from the STA that elicited the response, starting from the end of the NDP ACK response.  |
| Relayed Frame | 1 | The Relayed Frame field is 1 bit in length and it is set as described in 9.32n.3 (Procedures TXOP sharing), and 9.32n.3.3 (Flow Control).  |
| Reserved | 1 | The Reserved field is 1 bit in length and is set to 0. |

* **NDP Modified ACK**

**Instruction to Editor: *Please make the following changes in clause 8.3.4a.1.4:***

|  |
| --- |
| * **NDP MAC frame body of NDP Modified ACK (1MHz)**
 |
| Field | Size (bits) | Description |
| NDP MACFrame Type | 3 | NDP MAC Frame Type field is set to 3 |
| ACK ID | 9 | The ACK ID field is 9 bits in length and is set to the bit sequence CRC[0:3] || TA[4:8] (“||” is concatenation) obtained from the CRC and TA field of the NDP PS-Poll frame that elicited the response. |
| More Data | 1 | The More Data field is described in 8.2.4.1.8. |
| Duration Indication | 1 | The Duration Indication field is 1 bit in length and is set to 0 if the value of the Duration field is an extension of the ACK ID. Otherwise, it is set to 1 if the value of the Duration field indicates an idle period.  |
| Duration | 10 | If the Duration Indication field is set to 0 the Duration field is set to the bit sequence TA[3] || RA[0:8] (“||” is concatenation) obtained from the RA field of the NDP PS-Poll frame that elicited the response.If the Duration Indication is set to 1, the Duration field is set to the duration of time, in milliseconds, during which an idle period (during which there is no frame transmission) is expected from the STA that elicited the response, starting from the end of the NDP Modified ACK response. |
| Reserved |  1 | The Reserved field is 1 bit in length and is set to 0. |

The NDP MAC frame body of NDP Modified ACK for >=2MHz has the structure defined in Table 8-33k (NDP MAC frame body of NDP Modified ACK (≥2MHz)).

|  |
| --- |
| * **NDP MAC frame body of NDP Modified ACK (≥2MHz)**
 |
| Field | Size (bits) | Description |
| NDP MACFrame Type | 3 | NDP MAC Frame Type field is set to 3 |
| ACK ID | 16 | The ACK ID field is 16 bits in length and is set to the bit sequence CRC[0:3] || TA[0:8] || RA[6:8]] (“||” is concatenation) obtained from the CRC, TA, and RA field of the NDP PS-Poll frame that elicited the response. |
| More Data | 1 | The More Data field is described in 8.2.4.1.8. |
| Duration Indication | 1 | The Duration Indication field is 1 bit in length and is set to 0 if the value of the Duration field sets the NAV as described in 8.2.5 (Duration/ID field (QoS STA)). Otherwise, it is set to 1 if the value of the Duration field indicates an idle period. |
| Duration | 14 | If the Duration Indication field is set to 0 the Duration field is set as described in 8.2.5.7 (Setting for control response frames). If the Duration Indication is set to 1, the Duration field is set to the duration of time, in milliseconds, during which an idle period (during which there is no frame transmission) is expected from the STA that elicited the response, starting from the end of the NDP Modified ACK response. |
| Reserved | 2 | The Reserved field is 2 bits in length and is set to 0. |