IEEE P802.11  
Wireless LANs

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| Comment Resolution for CID 3 et al. | | | | |
| Date: 2013-08-01 | | | | |
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Abstract

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

3, 358, 930, 939, 940, 941, 943, 944, 945, 946, 947, 949, 951, 952, 953, 954, 955, 956, 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.***

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| **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. | Accepted –  Tgah editor to make changes shown in 11-13-1027r0 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 11-13-1027r0 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 | Revised –  Tgah editor to make changes shown in 11-13-1027r0 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 11-13-1027r0 under the heading for CID 3. |
| 940 | 48.16 | 8.3.4a.1.3 | Duration TBD | Duration bit length is 10 | Revised –  Tgah editor to make changes shown in 11-13-1027r0 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 11-13-1027r0 under the heading for CID 3. |
| 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 under the heading for CID 3. |
| 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 11-13-1027r0 under the heading for CID 3. |
| 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 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 11-13-1027r0 under the heading for CID 3. |
| 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 11-13-1027r0 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 9 and 15 and can indicate either NAV duration with a 40us resolution of up to 20ms or an idle period following the NDP ACK of up to 511ms.*

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 10 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:***

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| * **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 | 10 | The ACK ID field is 10 bits in length and is set to the bit sequence Scrambler Initialization[0:6] || FCS[29:31] (“||” is concatenation) obtained from the Scrambler Initialization value in the Service field (as defined in 24.3.9.2 (Service field)) 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. |
| Duration | 9 | The Duration field is 9 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 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 when set to 1 indicates the current TXOP is shared with the Relay STA using Explicit ACK procedure as described in 9.32n.3.1 (Explicit ACK procedure). 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. |

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)).

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| * **NDP MAC frame body of NDP ACK (≥2MHz)** | | |
| Field | Size (bits) | Description |
| NDP MAC  Frame 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)) 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. |
| Duration | 15 | The Duration field is 15 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 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 when set to 1 indicates the current TXOP is shared with the Relay STA using the Explicit ACK procedure as described in 9.32n.3.1 (Explicit ACK procedure). 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. |

* **NDP Modified ACK**

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

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| * **NDP MAC frame body of NDP Modified ACK (1MHz)** | | |
| Field | Size (bits) | Description |
| NDP MAC  Frame Type | 3 | NDP MAC Frame Type field is set to 3 |
| ACK ID | 10 | The ACK ID field is 10 bits in length and is set to the bit sequence CRC[0:3] || TA[3:8] (“||” 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. |
| Duration | 9 | If the Duration Indication field is set to 0 the Duration field is set to the bit sequence RA[0:8] 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 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)).

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| * **NDP MAC frame body of NDP Modified ACK (≥2MHz)** | | |
| Field | Size (bits) | Description |
| NDP MAC  Frame 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. |
| Duration | 15 | 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 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. |