IEEE P802.11
Wireless LANs

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| LB 200 Comment Resolution for 9.48 |
| Date: 2014-03-10 |
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Abstract

This submission proposes resolutions for comments in clause 9.48 of TGah Draft 1.0 with the following CIDs:

1259, 1260, 1760, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1897, 1898, 1899, 1900, 1901, 1902, 2050, 2066, 2110, 2403, 2843, 2844, 1262, 2339, 1903, 2087, 1907, 1908, 2067, 1263, 1264, 1909, 1910, 1913, 1914, 2118, 2119, 2120, 2121, 2766, 1265, 1266, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 2780, 2925, 2926

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 “TGah 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** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1259 | 205.13 | 9.48 | """In this subclause, STA means non-AP STA"" - you honestly don't expect to get away with that do you?You might as well say ""for the purpose of this subclause 1 means 2""." | Don't be lazy. Delete cited text. Whereever a STA is a non-AP STA, and the distinction is relevant, add "non-AP". You might also consider defining terms for the "non-AP STA part of a relay" and "AP part of a relay" and use consistently. | Revised – Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1260 | 205.24 | 9.48 | I think the terms "dot11RelaySTAOperation" and "dot11RelayAPOperation" are confusing. | Use "dot11RelayEndpointOperation" and "dot11RelayOperation" throughout instead. | Rejected –The terminology is consistent with the concept of Relay entity which contains a Relay AP and Relay STA each of which can be activated by the MIB variables mentioned by the commenter. No changes are needed for this comment. |
| 1760 | 205.49 | 9.48 | Missing definite article | Change the phrase "A Relay AP of a Relay shall use same SSID" to read "A Relay AP of a Relay shall use the same SSID". | Revised –Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1885 | 227.10 | 9.48 | I think that 9.48 should be in Clause 10. Please consult and determine. | Move to Clause 10 if appropriate | Rejected –Relay includes TXOP sharing procedures which are similar to e.g., ACK procedure (9.3.2.8) and as such is more appropriate to stay in clause 9. No changes are needed as per this comment |
| 1886 | 227.17 | 9.48 | "Relay STA is an STA with dot11RelaySTAOperation is set to true". This is not the way this is usually written. | Replace "Relay STA is an STA with dot11RelaySTAOperation is set to true" with "A Relay STA shall set dot11RelaySTAOperation to true." | Revised –Proposed resolution is to rephrase the sentence clarifying the definition. Note that the way the STA sets this MIB variable is described in the same subclause a few paragraphs below. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1887 | 227.17 | 9.48 | "The dot11RelaySTAOperation is set as defined below" Delete it is not needed here | Delete "The dot11RelaySTAOperation is set as defined below" | Revised –Proposed resolution is to remove the sentence as suggested. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1888 | 227.21 | 9.48 | "Relay AP is an AP with dot11RelayAPOperation is true." Incorrect phrasing | Replace "Relay AP is an AP with dot11RelayAPOperation is true." with "A Relay AP shall set dot11RelayAPOperation to true." | Revised –Agree in principle with the commenter. Proposed resolution is to re-phrase the sentence as: “A Relay AP is an AP with dot11RelayAPOperation equal to true”.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1889 | 227.23 | 9.48 | "The dot11RelayAPOperation of an AP in a Relay may be set to true only..." This should be immediately after the previous sentence, not a separate paragrraph | Delete carriage return before cited sentence | Revised –Agree in principle. Changed the sentence accounting for the suggestion. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1890 | 227.26 | 9.48 | "Note: A Relay AP is an AP, that follows the rules described in this subclause". Can't see the purpose of this. Delete | Delete Note | Revised –Proposed resolution deletes the note as suggested. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1891 | 227.29 | 9.48 | "A non-AP STA with dot11RelaySTACapable set to true shall include the Relay element in Association or Probe Requests". Can it only set them in one or the other, should be an "and" not an "or". | replace "or" with "and" | Revised –Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1892 | 227.32 | 9.48 | "A Relay AP shall include a Relay element in transmitted Beacon and Probe Response frames." This should be moved up to come immediately after the ather Relay AP info, to line 26. | Move cited text to immediately follow text on line 25. | Revised –Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1893 | 227.36 | 9.48 | "...the AP which it is associated to..." I think the better way is "..to which it is associated.." | Replace "the AP which it is associated " with "..to which it is associated" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1894 | 227.39 | 9.48 | "An AP with dot11RelaySupport set to true shall include the Relay element in its Beacons. An AP with dot11RelaySupport may include the Relay element in its Probe/ Association and Reassociation Responses." Combine the two sentences | Replace cited text with "An AP with dot11RelaySupport set to true shall include the Relay element in its Beacons and may include the Relay element in its Probe/ Association and Reassociation Responses." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1895 | 227.39 | 9.48 | Why do you have dot11RelaySTACapable yet dot11RelayAPSupport? Is there a subtle difference? One supports it and the other is capable of supporting it? | Have a common terminology for "Relay\_Support" or "Realy\_Capable" | Reject:The comment failed to identify a real issue.Response to the commentor:RelaySTACapable is the capability of a non-AP STA to become Relay-STA, RelayAPSupport is the capability to associate with a Relay AP. They are not from the same device and I think the name is appropriate. |
| 1897 | 227.49 | 9.48 | "A Relay AP of a Relay shall use same SSID as the AP to which the Relay STA of the Relay is associated". 'Needs slight editing. | replace cited text with "In a Relay entity, the Relay AP shall use the same SSID as the AP to which the Relay STA is associated." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827.  |
| 1898 | 227.51 | 9.48 | "A Relay STA of a Relay shall send a Reachable Address Update frame to the AP to which it is associated the current list of reachable addresses when one of the following conditions occurs:" does not read right. Should be two sentences | Replace cited text with "A Relay STA of a Relay shall send a Reachable Address Update frame to the AP to which it is associated. The current list of reachable addresses is sent when one of the following conditions occurs:" | Revised –Agree in principle with the commenter. Proposed resolution is to rephrase the sentence to make it clearer.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827.  |
| 1899 | 227.60 | 9.48 | "A Relay STA may send a Reachable Address element to the Relay AP to which it is associated indicating the current list of reachable addresses when associating." Huh? It is already associated so what is the "when associating" referring to? | Make cited sentence clear as it does not make sence t the moment and I m not sure what it is really saying. | Revised –Agree in principle with the commenter. Proposed resolution is to rephrase the sentence to clarify its meaning: “A Relay STA may send a Reachable Address element that contains the current list of reachable addresses to a Relay AP during association”TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1900 | 228.05 | 9.48 | "via the air interface" This is never used, I cannot find it in 11mc so it must be wrong. I think you can delete it. | Delete "via the air interface" | Revised –Agree in principle with the commenter. Proposed resolution is to replace the term with “WM” which is widely used in the baseline (see e.g., 1st paragraph of 10.3.1). TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1901 | 228.28 | 9.48 | "via the air interface" This is never used, I cannot find it in 11mc so it must be wrong. I think you can delete it. | Delete "via the air interface" | Revised –Same resolution as proposed for CID 1900.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 1902 | 228.53 | 9.48 | "via the air interface" This is never used, I cannot find it in 11mc so it must be wrong. I think you can delete it. | Delete "via the air interface" | Revised –Same resolution as proposed for CID 1900.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 2050 | 205.41 | 9.48 | Relay element can be included in the short probe response | Change "Probe/Association and Reassociation Responses" to "(Short) Probe/Association and Reassociation Responses" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827.  |
| 2066 | 205.26 | 9.48 | Do not understand the note. Above (line 21) we have normative text "Relay AP is an AP with dot11RelayAPOperation is true." So there is no need for a note which is not very informative in any case | Delete note | Revised –Proposed resolution is to remove the note. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 2110 | 205.57 | 9.48 | The Reachable Address Update frame is used for Relay-STA to send to the root AP. It can also be used for Relay-STA to inform the root AP that the Relay-STA is disabling its Relay function by setting the | Suggest to add a new bullet as follows:" 4) The Relay-AP function is disabled on the Relay.NOTE, when the Relay-AP function is disabled on a Relay, the Relay shall send a Reachable Address Update frame to the AP to which it is associated a null list of reachable addresses." | Reject:I agree with the concept of “disabling Relay function” but the proposed Resolution does not work in all the cases. For example, when the Relay is not disabling its functionality but there is not any STAs associated to it and moves to another AP. |
| 2403 | 205.40 | 9.48 | / | , | Revised –Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1259 to 2827. |
| 2843 | 205.52 | 9.48 | Clarification: The Reachable Address Update frame is used for Relay-STA to send to the root AP. Can a STA send the Reachable Address Update frame to Relay-AP? | Please clarify | Reject:The comment failed to identify a real issue.Response to the commentor:The Relay-STA can send the Reachable Address to any AP including Root AP or Relay AP. There is nowhere indicating it shall send it to Root AP only. |
| 2844 | 205.60 | 9.48 | The Relay should not allow STA to associate with it before it associates with a root AP. Therefore sending a Reachable Address element to root AP when associating makes no sense. | remove this statement. | Reject:The comment failed to identify a real issue.Response to the commentor:The Relay may move from an AP to another AP to improve its data rate. Under that scenario it makes sense to send the Reachable Update frame when there are STAs associated to it. |

**Discussion:** *None.*

* **Relay operation**

**Instructions to TGah Editor: *Change this subclause as follows:***

A Relay is an entity that logically consists of a Relay AP and a Relay STA.

A Relay STA is a non-AP STA with dot11RelaySTAOperation equal to true. A Relay AP is an AP with dot11RelayAPOperation equal to true. The AP in a Relay may set the dot11RelayAPOperation to true only if dot11RelaySTAOperation of the non-AP STA in the Relay is true, otherwise it shall set the dot11RelayAPOperation to false.

A Relay AP shall include a Relay element in transmitted Beacon, Short Probe Response and Probe Response frames.

A non-AP STA with dot11RelaySTACapable set to true shall include the Relay element in Association Request and Probe Request frames.

A non-AP STA with dot11RelaySTACapable set to true which receives a Relay element from the AP to which it is associated may set dot11RelaySTAOperation to true, otherwise it shall set dot11RelaySTAOperation to false.

An AP with dot11RelaySupport set to true shall include the Relay element in its Beacon frames and may include the Relay element in its Probe Response, Short Probe Response and (Re-)AssociationResponse frames.

A Root AP is defined as an AP with dot11RelaySupport set to true that sets the Relay Control field of transmitted Relay elements to 0.

A Relay AP shall not set the Relay Control field of transmitted Relay elements to 0.

In a Relay, the Relay AP shall use the same SSID as the AP to which the Relay STA is associated.

A Relay STA of a Relay shall send a Reachable Address Update element that contains the current list of reachable addresses to the AP to which it is associated when one of the following conditions occurs:

* A new non-AP STA associates with the Relay AP of the Relay
* A non-AP STA is disassociated or deauthenticated from the Relay AP of the Relay
* A Reachable Address Update frame is received at the Relay AP of the Relay

The Relay STA may send a Reachable Address element that contains the current list of reachable addresses to an AP during association.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1262 | 206.40 | 9.48.1 | "A-MSDU frame" -- This is very confusing. An A-MSDU is just that, and doesn't need "frame tacked on". Worse "frame" in the MAC is equivalent to MPDU, and while an A-MSDU may be transported in an MPDU, it is not equivalent. | Change all "A-MSDU frame" to "A-MSDU". | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1262 to 2339. |
| 2339 | 206.03 | 9.48.1 | How does a Relay STA or AP decide which frame format to use? Is this an implementation choice? | Clarify the decision of which format to use, or state that it is an implementatoin choice. | Rejected –The Relay STA/AP decides to forward the MSDUs using a frame format that depends on the transmitter and/or receivers capability (for example it may transmit an A-MSDU if A-MSDU Supported is set to 1 in the most recent received S1G Capabilities element from the receiving STA (see 9.11)). |

**Discussion:** *None.*

* **Addressing and forwarding of individually addressed relay frames**

**Instructions to TGah Editor: *Change this subclause as follows:***

MSDUs received from a local LLC sublayer at the MAC SAP of a Relay STA which are not destined for the Relay STA are forwarded via the WM to the AP to which it is associated, using either a 4-address frame format or an A-MSDU format.

The addressing of the 4-address frame shall be as follows in this case:

* Address 1 is the MAC address of the AP (the receiver of the MPDU)
* Address 2 is either the MAC address or the AID of the Relay STA (the transmitter of the MPDU)
* Address 3 is the DA of the MSDU (the destination address of the MSDU).
* Address 4 is the SA of the MSDU (the source address of the MSDU)

The addressing of the frame containing anA-MSDU shall be as follows in this case:

* Address 1 is the MAC address of the AP (the receiver of the MPDU)
* Address 2 is either the MAC address or the AID of the Relay STA (the transmitter of the MPDU)
* Address 3 is the MAC address of the AP (the BSSID)
* If the frame is a Short frame then Address 3 is not present
* DA in A-MSDU subframe header is the DA of the MSDU (the destination address of the MSDU)
* SA in A-MSDU subframe header is the SA of the MSDU (the source address of the MSDU)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1903 | 229.13 | 9.48.2 | "via the air interface" This is never used, I cannot find it in 11mc so it must be wrong. I think you can delete it. | Delete "via the air interface" | Revised –Same resolution as for CID 1900.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1903 to 2791. |
| 2087 | 229.13 | 9.48.2 | A root AP can't possibly reach relay associated STAs (otherwise their would not be a need for a relay). | suggest rephrase to "to the relay associated STAs via the relay" | Reject:Root AP may possibly reach Relays associated STAs, the STAs just tried to associate with the Relay because of other purposes, e.g. saving power |

MSDUs received from a local LLC sublayer at the MAC SAP of an AP which are not destined for the AP or one of its associated non-AP STAs are forwarded via the WM to an appropriate Relay STA, using either a 4-address frame format or an A-MSDU format.

The addressing of a 4-address frame shall be as follows in this case:

* Address 1 is either the MAC address or the AID of the Relay STA (the receiver of the MPDU)
* Address 2 is the MAC address of the Relay AP (the transmitter of the MPDU)
* Address 3 is the DA of the MSDU (the destination address of the MSDU)
* Address 4 is the SA of the MSDU (the source address of the MSDU)

The addressing of a frame containing an A-MSDU shall be as follows in this case:

* Address 1 is either the MAC address or the AID of the Relay STA (the receiver of the MPDU)
* Address 2 is the MAC address of the Relay AP (the transmitter of the MPDU)
* Address 3 is the MAC address of theAP (the BSSID)
* If the frame is a Short frame then Address 3 is not present
* DA in A-MSDU subframe header is the DA of the MSDU (the destination address of the MSDU)
* SA in A-MSDU subframe header is the SA of the MSDU (the source address of the MSDU)

**Discussion:** *None.*

* **Addressing and forwarding of group addressed relay frames**

**Instructions to TGah Editor: *Change this subclause as follows:***

Group addressed MSDUs received from a local LLC sublayer at the MAC SAP of a Relay STA are forwarded via the WM to an AP to which it is associated, using either a 4-address frame format or an A-MSDU format.

The addressing of the 4-address frame shall be as follows in this case:

* Address 1 is the MAC address of its associated AP (the receiver of the MPDU)
* Address 2 is either the MAC address or the AID of the Relay STA (the transmitter of the MPDU)
* Address 3 is the DA of the MSDU (the group address).
* Address 4 is the SA of the MSDU (the source address of the group addressed MSDU)

The addressing of the frame containing an A-MSDU shall be as follows in this case:

* Address 1 is the MAC address of its associated AP (the receiver of the MPDU)
* Address 2 is either the MAC address or the AID of the Relay STA (the transmitter of the MPDU)
* Address 3 is the MAC address of its associated AP (the BSSID) and not present in a short frame
* DA in A-MSDU subframe header is the DA of the MSDU (the group address)
* SA in A-MSDU subframe header is the SA of the MSDU (the source address of the group addressed MSDU)

Group addressed MSDUs received from a local LLC sublayer at the MAC SAP of an AP (including a Root AP and a Relay AP) are forwarded via the WM to an appropriate Relay STA and its associated non-AP STAs, using a 3-address frame format.

The addressing of a 3-address frame shall be as follows in this case:

* Address 1 is the DA of the MSDU (the group address)
* Address 2 is the MAC address of the AP (the BSSID)
* Address 3 is the SA of the MSDU (the source address of the group addressed MSDU)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1905 | 229.38 | 9.48.3 | "A non-S1G STA shall not perform TXOP sharing as described in this subclause." Can it perform TXOP sharing in another way? Why can it not perform TXOP Sharing? Would is not be good if nonS1G STAs could use this feature? I understand that the Short Frame Control field has the "Relayed Frame field in it but surely you could have used From DS To DS 11 or something? OR why cannot a standard STA use the Short Frame Control field? Could you not have invented a method that could be universally used? If you did not, then go back and reconsider and make the feature such that it could be universally used - It is a good feature (on the face of it). | Prove a case that these features, Relay Operation and TXOP sharing, should not be used by STAs in general or, better, make the necessary changes to make it a universal feature. | Rejected:As it is also mentioned in the comment, only Short frames has “Relayed frame field”. Which is limited to the S1G STAs only. We think there is no way around this indication and the proposed resolution is not complete. |
| 1907 | 229.51 | 9.48.3 | "When a Relay (Relay STA or Relay AP) receives a valid Short Data frame.." Does this Relay feature only work for Short Frames? What if the Relay receives a standard Data frame, is it prohibited? If so why? possibly you could have used From DS To DS 11 or something? | Include case of reception of standard data frame (and from non S1G STAs). | Rejected –Short Data frames include the Relayed Frame bit in the Frame Control field which enables TXOP Sharing. Note that the TXOP initiator’s setting of the Relayed Frame bit to 1 is an explicit indication to the Relay that it is allowed to use the TXOP to forward the frame. If the STA wants to use this feature it generates a Short Data frame. The Relay cannot forward a standard Data frame because the TXOP holder has not given permission to do so with an explicit indication in the frame. |
| 1908 | 229.51 | 9.48.3 | "The sequence of frames exchanged over the first hop and second hop depends on the acknowledgement procedure used by the Relay. A Relay can use either:-- Explicit ACK procedure-- Implicit ACK procedure. When a Relay (Relay STA or Relay AP) receives a valid Short Data frame with the Relayed Frame field in the Frame Control field set to 1, the Relay may acknowledge the received Short Data frame using the Implicit or Explicit ACK procedure.". This repeats the previous paragraph. It does not add anything that has not been said before. Suggest delete | Delet cited text. | Rejected –The paragraph mentioned by the commenter does not contain any normative text but it is helpful to list the two different acknowledgement procedures defined in the subclauses that follow. |
| 2067 | 207.51 | 9.48.3 | What is a "Short Data frame?" Suggest you add to clause 3 | Update clause 3 with appropriate definition | Rejected –Short Data frames are defined in clause 8.7. |

**Discussion:** *None.*

* **Procedures of TXOP sharing for relay operation**

**Instructions to TGah Editor: *Change this subclause as follows:***

An S1G STA indicates support of Implicit ACK in TXOP Sharing feature using the TXOP Sharing Implicit ACK Support subfield of the S1G Capabilities Info field in the S1G Capabilities element. An S1G STA shall set the TXOP Sharing Implicit ACK Support subfield to 1 in frames that it transmits containing the S1G Capabilities element if the dot11TXOPSharingImplicitACKSupportImplemented is true. Otherwise, the S1G STA shall set the TXOP Sharing Implicit ACK Support subfield to 0. (#60)

An S1G STA that does not support TXOP Sharing procedures as described in this subclause shall set the Relayed Frame field in the Frame Control field of Short Data frames and in NDP ACK frames to 0 unless the NDP ACK frame is used for flow control as described in 9.48.4 (Flow control).(#60)

A non-S1G STA shall not perform TXOP sharing.

A Relay entity shall not perform TXOP sharing if the Relay STA and Relay AP are operating in different primary channels for the duration of the TXOP.

The sequence of frames exchanged over the first hop and second hop depends on the acknowledgement procedure used by the Relay. A Relay can use either:

* Explicit ACK procedure
* Implicit ACK procedure

When a Relay (Relay STA or Relay AP) receives a valid Short Data frame with the Relayed Frame field in the Frame Control field set to 1, the Relay may acknowledge the received Short Data frame using the Implicit or Explicit ACK procedure.

A Relay shall not acknowledge the received valid Short Data frame using either Implicit or Explicit ACK procedure if the Relayed Frame field in the Frame Control field is set to 0 in the received short Data frame.

NOTE- The frames transmitted over the first hop and second hop can be sent at two different MCSs.

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1263 | 207.64 | 9.48.3.1 | "Throughout this subclause, a Response Indication of Long Response"Response Indication is not a field. Long Response is not an enumerated value.Both are concepts. | Lower case both terms throughout the draft. | Revised –Proposed resolution is to add a reference to the subclause where Response Indication is defined.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 1264 | 208.19 | 9.48.3.1 | "The non-AP STA uses a new TXOP for a new frame transmission.The AP uses a new TXOP for a new frame transmission."I don't understand what this is saying. What is a "new frame"?Is it saying that the TXOP is terminated at this point. | Say that this terminates the current TXOP. | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 1909 | 230.01 | 9.48.3.1 | "...addressed to the Relay AP (Relay STA) by...". Confusing. Is the frame addressed to the Relay AP or to the Relay STA? Are you refering to Address 3, DA? Address 1 must be sent to the Relay AP. To prevent getting in a quandry here suggest you dlete the address as this is covered alrady in 9.48.2 OR be precise. Furthermore I assume that this is a Relay frame exchange, but again this is not clear. | Replace "A non-AP STA starts a frame exchange by sending a Short Data frame addressed to the Relay AP (Relay STA) by setting the Relay frame field to 1." With "A non-AP STA starts a relayed frame exchange by setting the Relay frame field to 1 and with the addresses set as per 9.48.1 and 9.48.2." | Revised –There is no need to define how the addresses are set because as mentioned by the commenter this has already been done in 9.48.1 and 2.Proposed resolution is modify the sentence as: “A non-AP STA (AP) starts a frame exchange by sending a Short Data frame addressed to the Relay AP (Relay STA) by setting the Relayed frame Frame field to 1.” TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 1910 | 229.63 | 9.48.3.1 | "Long Response" What is Long Response? I find 10 mentions of it but no definition or description of what it is. I also connot find it in 11mc, 11af or 11ac. Where did it comes from? | Define what Long Response is in the correct place in the document. (It is first mentioned in 9.44.2) | Revised –Proposed resolution is to add a reference to the subclause where Response Indication is defined.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 1913 | 230.12 | 9.48.3.1 | "The Relay STA (Relay AP), that uses Explicit ACK procedure.." Edit for better clarity | Rpelace cited text with "When using the Explicit ACK procedure, the Relay STA or the Relay AP.." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 1914 | 230.12 | 9.48.3.1 | "..shall forward to the AP the previously received Short Data frame SIFS after the Relay AP sends the NDP ACK frame to the non-AP STA (AP)." Needs edits for the SIFS | Replace cited text with "shall forward the previously received Short Data frame, to the AP, using SIFS, after the Relay AP sends the NDP ACK frame to the non-AP STA (AP) ." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 2118 | 208.01 | 9.48.3.1 | The text is not in consistant with approved resolution "11-13/891" to D0.1 | change 'a non-AP STA' to 'a non-AP STA(an AP)' | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 2119 | 208.02 | 9.48.3.1 | the Relay frame field should be the Relayed frame field | change 'the Relay frame field' to 'the Relayed frame field' | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 2120 | 208.12 | 9.48.3.1 | The downlink procedure is not clearly described | change "the AP" to "the AP(the non-AP STA)" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 2121 | 208.13 | 9.48.3.1 | The uplink procedure is not clearly described | change "the Relay AP" to "the Relay AP(the Relay STA)" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |
| 2766 | 206.12 | 9.48.3.1 | Add "(non-AP STA)" after the text of "shall forward to the AP" | as commented | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1263 to 2823. |

**Discussion:***None.*

* **Explicit ACK procedure**

**Instructions to TGah Editor: *Change this subclause as follows:***

Throughout this subclause, a Response Indication of Long Response is signaled in an NDP ACK frame by setting the Duration Indication field to 1 and the Duration field to 0 and a Response Indication of No Response is signaled by setting the Duration Indication field to 0 and the Duration field to 0 (see 9.3.2.12 (Response Indication procedure)).

A non-AP STA (AP) starts a frame exchange by sending a Short Data frame addressed to the Relay AP (Relay STA) by setting the Relayed Frame field to 1. (CID#749, 983, 750, 981, 57)

When using the Explicit ACK procedure, the Relay AP (Relay STA) shall set the Duration Indication field to 1 and Duration field to 0 in the NDP ACK frame that is transmitted to the non-AP STA (AP) to indicate Long Response. In addition it shall set the Relayed Frame field of the NDP ACK frame to 1. Otherwise, it shall set the Duration Indication field to 0 and the Duration field to 0 in the NDP ACK to indicate No Response and the Relayed Frame field to 0. (CID#749, 983, 750, 981, 57)

When using the Explicit ACK procedure, the Relay STA (Relay AP) shall forward the previously received Short Data frame to the AP (non-AP STA), SIFS after the Relay AP (Relay STA) has sent the NDP ACK frame to the non-AP STA (AP). Upon successful receipt of the relayed Short Data frame, the AP (non-AP STA) shall transmit an NDP ACK frame to the Relay STA (Relay AP), which shall have both the Duration Indication field and the Duration field set to 0 to indicate No Response terminating this TXOP.(CID#984, 262, 263, 57)

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1265 | 208.55 | 9.48.3.2 | "For downlink implicit ACK procedure,an AP that the Relay STA is associated with shall know PAID ofnon-AP STAs associated with a Relay AP." - grammar | "The downlink implicit ACK procedure requires that an AP with which the Relay STA is associated knows the PAIDs of non-AP STAs associated with the Relay AP." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1266 | 208.61 | 9.48.3.2 | "For uplink implicit ACK procedure, the non-AP STAs associated with a Relay AP shall know BSSID of theAP that serving Relay STA is associated with." -- grammar | "The uplink implicit ACK procedure requires that non-AP STAs associated with a Relay AP know the BSSID of the AP with which the serving Relay STA is associated." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1915 | 230.27 | 9.48.3.2 | "sending back acknowledgement frame", an 'an' is missing | Replace cited text with "with sending back an acknowledgement frame" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1916 | 230.28 | 9.48.3.2 | "This implicit ACK mechanism is available only when PAID information is included in the PLCP heade (┤Θª2MHz PHY frame format). " This should surely start the subclause. Also edit slightly | Move to the start of the subclause 9.48.3.2 and edit to "The implicit ACK mechanism is available only when the PAID information is included in the PLCP heade (┤Θª2MHz PHY frame format). " | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1917 | 230.32 | 9.48.3.2 | comma after first "Relay AP"to make clear it is the MPDU. | comma after "Relay AP" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1918 | 230.33 | 9.48.3.2 | "the received MPDU to the AP that it is associated with in SIFS time". Needs editing | Replace cited text with "the received MPDU to the AP to which it is associated, using SIFS." | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1919 | 230.38 | 9.48.3.2 | "recognize it as successful" needs editing | Edit to "recognizes it as a successful" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1920 | 230.43 | 9.48.3.2 | "Relay STA forward" should be 'forwards" | Add 's' to 'forward' | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1921 | 230.44 | 9.48.3.2 | "with in SIFS time" needs editing | Replace cited text with "using SIFS". | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1922 | 230.37 | 9.48.3.2 | Add 'the' before PAID in two places | Add 'the' before PAID in two places | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1923 | 230.48 | 9.48.3.2 | Add 'the' before PAID in two places | Add 'the' before PAID in two places | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1924 | 230.51 | 9.48.3.2 | Add 'the' before "DA" | Add 'the' before "DA" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1925 | 230.51 | 9.48.3.2 | "the Relay STA shall use explicit" needs editing | Edit cited text to" then the Relay STA shall use the Explicit | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1926 | 230.55 | 9.48.3.2 | "an AP that the Relay STA is associated with shall know PAID of", needs editing | Edit cited text to "an AP to which the Relay STA is associated, needs to knowthe PAID of" | Revised –Agree in principle with the commenter. Proposed resolution reorganizes the sentence to fix the inconsistency. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 1927 | 230.61 | 9.48.3.2 | "associated with a Relay AP" should be "associated to" | replace "associated with a Relay AP" with "associated to a Relay AP" | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 2780 | 208.55 | 9.48.3.2 | The description need clarification | Please clarify | Revised –Agree in principle with the commenter. The text mentioned by the commenter has been reorganized to clarify the description.TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926.  |
| 2925 | 208.43 | 9.48.3.2 | "forward" should be changed to "forwards" | Modify the sentence from "... the Relay STA forward the received MPDU to ..." to "... the Relay STA forwards the received MPDU to ...". | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |
| 2926 | 208.38 | 9.48.3.2 | "recognize" should be changed to "recognizes". | Modifiy the sentence from "... the non-AP STA recognize it as successful acknowledgement ..." to "... the non-AP STA recognizes it as an successful acknowledgement ...". | Revised –Agree in principle with the commenter. Proposed resolution accounts for the commenter’s suggestion. TGah Editor to make changes shown in 14/0312r0 under the heading for CIDs from 1265 to 2926. |

**Discussion:** *None.*

* **Implicit ACK procedure**

**Instructions to TGah Editor: *Change this subclause as follows:***

The implicit ACK procedure is available only when the PAID information is included in the PLCP header of the PPDU that carries the frame (i.e., the PREAMBLE\_TYPE is S1G\_SHORT\_PREAMBLE or S1G\_LONG\_PREAMBLE). When a Relay receives an MPDU for forwarding in TXOP sharing relay operation, the Relay may directly forward the received MPDU without sending back an acknowledgement frame to the transmitter of the MPDU. If an MPDU is transmitted by a non-AP STA, which is associated to a Relay AP, to the AP, then the Relay AP forwards the received MPDU to the AP to which it is associated, using SIFS. After transmitting the MPDU, the non-AP STA shall wait for an ACKTimeout interval, with a value of aSIFSTime + aSlotTime + aPHY-RX-START-Delay, starting at the PHY-TXEND.confirm primitive. If the non-AP STA receives a valid PLCP header within the ACKTimeout interval and the PAID in the received PLCP header is identical to the PAID corresponding to BSSID of the AP, the non-AP STA recognizes it as a successful acknowledgement, permitting the frame sequence to continue, or to end without retries, as appropriate for the particular frame sequence in progress.

If an MPDU is transmitted by an AP to a Relay STA, then the Relay STA forwards the received MPDU to the non-AP STA that is associated to the Relay AP, using SIFS. After transmitting the MPDU, the AP shall wait for an ACKTimeout interval, with a value of aSIFSTime + aSlotTime + aPHY-RX-START-Delay, starting at the PHY-TXEND.confirm primitive. If the AP receives a valid PLCP header within the ACKTimeout interval and the PAID in the received PLCP header is identical to the PAID corresponding to the DA of the transmitted MPDU, the AP recognizes it as successful acknowledgement, permitting the frame sequence to continue, or to end without retries, as appropriate for the particular frame sequence in progress. If the RA of the forwarded MPDU is different from the DA of the MPDU transmitted by the AP, then the Relay STA shall use the explicit ACK procedure.

An AP to which the Relay STA is associated may use the implicit ACK procedure to transmit a downlink frame to a non-AP STA only if it knows the PAID of the non-AP STA associated to the Relay AP.(#715) For this purpose, the Relay STA may indicate an associated non-AP STA's AID to the AP by sending a STA Information Announcement frame including an AID Announcement element when the non-AP STA becomes associated or the non-AP STA's AID is changed. A non-AP STA associated to a Relay AP may use the implicit ACK procedure to transmit an uplink frame to an AP only if it knows the BSSID of the AP to which the Relay STA of the Relay is associated. For this purpose, the Relay AP may indicate the BSSID of the AP to newly associated non-AP STAs by using RootAP BSSID field in the Relay element in Beacon frame, Probe Response or Short Probe Response frame.