IEEE P802.11
Wireless LANs

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| LB 203 Comment Resolution for 8.8-8.8.4 |
| Date: 2014-08-01 |
| Author(s): |
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Abstract

This submission proposes resolutions for comments in clauses 8.8-8.8.4 of TGah Draft 2.0 with the following CIDs (TOT 12):

* 3128, 3807
* 3940, 3296, 3676, 3683, 3744, 3745, 4141, 4197
* 3746, 3747

Revisions:

* Rev 0: Initial version of the document
* Rev 1: Modified figure 8-722a8 as well to resolve inconsistency of RA frame as pointed out during the conf call
* Rev 2: Removed part of the changes for CIDs 3128 and 3940 that conflict with proposed resolution for CID 3941 in 11-14/1135r1 (changes highlighted in green).

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** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3128 | Alfred Asterjadhi | 191.33 | 8.8 | The addition of the RA frame in the Short Management frame subclause generated some description inconsistencies throughout this subclause. Make the appropriate changes to resolve the inconsistencies in the description. | As in comment. | Revised--Agree in principle with the commenter. Proposed resolution accounts for the suggested change. TGah editor to make the changes showin in 11-14/1065r2 under all headings that include CID 3128. |
| 3748 | Liwen Chu | 191.33 | 8.8 | The improvement of short frame is less when >=2MHz BSS operation bandwidth is used. It is reasonable to make the transmitting and receiving of short frame optional. | As in comment. | **<NOT ADDRESSED IN THIS DOCUMENT>** |
| 3807 | Liwen Chu | 191.34 | 8.8 | The normative text about whether short frame is optional or mandatory is missing in clause 9. | Add related text in clause 9 to indicate whether short frame is mandatory or optional. | Rejected –The normative text is already present in several parts of clause 9. For example in Subclause 9.53 (Header Compression procedure): “After association, an S1G STA with dot11ShortMACHeaderImplemented equal to true may transmit Header Compression frames and Short frames.” and in 9.3.2.9 (Ack procedure): Upon successful reception of a Short frame that requires acknowledgment with the From DS field equal to 1, an S1G STA shall generate an acknowledgment frame in response if the AID subfield of A1 field is equal to the AID of the S1G STA and the A2 field is equal to the MAC address of its associated AP.” |

**Discussion:** *None.*

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| **CID** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3940 | Mitsuru Iwaoka | 192.6 | 8.8.3.1 | The format of Frame Control Field of Resource Allocation frame is different from the general format. | Insert ", Resource Allocation frame (defined in 8.8.5.4 (Resource Allocation frame format))," before the "and" in the first paragraph of the subclause 8.8.3.1. | Revised –Agree in principle with the commenter. Proposed resolution accounts for the suggested change. TGah editor to make the changes showin in 11-14/1065r2 under all headings that include CID 3940. |
| 3296 | Alfred Asterjadhi | 192.37 | 8.8.3.1 | Need to clarify that the Short Data frames are QoS Data frames by adding the appropriate qualificaitons and references there in. | As in comment. | Revised –Agree in principle with the commenter. Proposed resolution is to add the QoS qualification to the Short Data frame throughout this Subclause.TGah editor to make the changes showin in 11-14/1065r2 under all headings that include CID 3296. |
| 3676 | Kwok Shum Au | 192.54 | 8.8.3.1 | I do not see there is any value in defining a short data frame with 2 MAC addresses. My rationale is as follows. First, the improvement is marginal and second, it can be replaced by a short data frame with MAC address and AID. | Remove the short frame with 2 MAC addresses | Rejected –The comment fails to identify an issue. As a response to the commenter: Please note that the benefits of this type of frame have already been discussed in the TGah group. For more information please refer to <https://mentor.ieee.org/802.11/dcn/12/11-12-1106-00-00ah-a-short-header-frame-format.pptx>Where it is indicated that these frames are “useful when the AID info is not available or cannot be used: before and during association, multicast tranmissions ...” |
| 3683 | Lei Wang | 192.55 | 8.8.3.1 | There is a conflict between the text in line 62 page 191 and the type=3 with both A1 and A2 containing MAC addresses. The line 62 page 191 says the total size of A1 and A2 is 8 bytes, which won't be able to contain two MAC addresses, unless we have introduced different MAC address. | Fix the conflict. Suggest deleting type 3. | Revised –Agree in principle with the comment. Proposed resolution is to fix the inconsistency by specifying in the note of 8.8.2 that the total octets of A1 and A2 fields is either 8 or 12.TGah editor to make the changes showin in 11-14/1065r2 under all headings that include CID 3683. |
| 3744 | Liwen Chu | 192.54 | 8.8.3.1 | It is not necessary to define short data frame with 2 MAC addresses. The improvement is less and the use of this can almost always replaced by short data frame with MAC address + AID. | Remove short frame with 2 MAC addresses. | Rejected –This comment is very similar to the comment with CID 3676. Hence the proposed resolution is the same.The comment fails to identify an issue. As a response to the commenter: Please note that the benefits of this type of frame have already been discussed in the TGah group. For more information please refer to <https://mentor.ieee.org/802.11/dcn/12/11-12-1106-00-00ah-a-short-header-frame-format.pptx>Where it is indicated that these frames are “useful when the AID info is not available or cannot be used: before and during association, multicast tranmissions ...” |
| 3745 | Liwen Chu | 193.62 | 8.8.3.1 | Relayed Frame shouldn't just be used in TXOP sharing for relay. Normal relay should use it to indicate 4-address/3-address format. | As proposed | Rejected –The comment does not identify a technical issue. As a response to the comment: Please note that the A3 Present and A4 Present subfields in the SID field are used to indicate whether the A3 and/or A4 fields are present in the frame. If both these subfields are set to 1 then the frame has a 4-address format, if only one of the two subfields is set to 1 then the frame has a 3-address format.  |
| 4141 | Yakun Sun | 192.54 | 8.8.3.1 | Short data frame with 2 MAC addresses is not necessary since the improvement is minimal and the purpose can always be achieved by using MAC address and AID. | Delete the short frame with 2 MAC addresses. | Rejected –This comment is very similar to the comment with CID 3676. Hence the proposed resolution is the same.The comment fails to identify an issue. As a response to the commenter: Please note that the benefits of this type of frame have already been discussed in the TGah group. For more information please refer to https://mentor.ieee.org/802.11/dcn/12/11-12-1106-00-00ah-a-short-header-frame-format.pptxWhere it is indicated that these frames are “useful when the AID info is not available or cannot be used: before and during association, multicast tranmissions ...” |
| 4197 | Rojan Chitrakar | 192.54 | 8.8.3.1 | The usage of Short frames with Type Field = 3 (Data with both A1 and A2 fields containing MAC Addresses) is not defined clearly. Also, since the SID field is not present in such frames, the A3 present and A4 present bits are also not present. Does that imply that A3 and A4 are never present in Short frames with Type Field = 3? | Please clarify. | Revised –Short Data frames of Type 3 do not include an SID field and as such do not carry the necessary signalling to indicate the presence of A3/A4 fields etc. The proposed resolution clarifies this aspect by adding a note that states that PV1 frames that do not have the SID field do not contain these fields. TGah editor to make the changes shown in 11-14/1065r2 under all headings that include CID 4197. |

**Discussion:** *None.*

* **General Short frame format**

Figure 8-681 (Short frame format) depicts the general Short MAC frame format. The first three fields (Frame Control, A1 and A2) and the last field FCS are always present in Short frames. The Sequence Control, A3, A4 and Frame body fields are optionally present. Each field is defined in 8.8.3 (Short frame fields).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Frame Control | A1 | A2 | Sequence Control | A3 | A4 | Frame Body | FCS |
| Octets:  | 2 | 2or 6 | 6 or 2 | 0 or 2 | 0 or 6 | 0 or 6 | variable | 4 |
| * **Short frame format**
 |

***TGah Editor: Change the paragraph below as follows (#3683,):***

NOTE - In Figure 8-681 (Short frame format), a total octets of A1 and A2 fields is 8or 12.

The Frame Body field is of variable size, constrained as defined in 8.2.4.7.1 (General).

* **Short frame fields**
* **Frame Control field**

***TGah Editor: Change the table below as follows (#3128, 3940):***

The general format of the Frame Control field of the short MAC header is illustrated in Figure 8-682 (Frame Control field) except for the least significant octet of the Frame Control field of Short Probe Response frames (defined in 8.8.5.3 (Short Probe Response frame format)), Resource Allocation frames (defined in 8.8.5.4 (Resource Allocation frame format), and Short Control frames (defined in Figure 8.8.4 (Short Control frames)).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0  B1 | B2 B4 | B5 B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
|  | ProtocolVersion | Type | PTID/Subtype | FromDS | MoreFragments | PowerManagement | MoreData | ProtectedFrame | End ofServicePeriod | RelayedFrame | AckPolicy |
| Bits: | 2 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| * **Frame Control field**
 |

The Protocol Version field is 2 bits and is defined in 8.2.4.1.2 (Protocol Version field). For Short frames the value of the protocol version is 1.

The Type field is 3 bits and identifies the type of the frame, as defined in Table 8-396 (Short frame types).

***TGah Editor: Change the table below as follows (#3296):***

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| * **Short frame types**
 |
| **Type**  | **Type description** |
| 0 | QoS Data* Either A1 or A2 is an SID (defined in 8.8.3.2 (Address fields)), as determined by the From DS field in the Frame Control field
 |
| 1 | Management* Either A1 or A2 is an SID (defined in 8.8.3.2 (Address fields)), as determined by the From DS field in the Frame Control field
* Both A1 and A2 fields contain MAC addresses for Short Probe Response frames.
 |
| 2 | Control* A1 is an SID and A2 is either an SID or contains a MAC address
 |
| 3 | QoS Data* Both A1 and A2 fields contain MAC addresses
 |
| 4-6 | Reserved |
| 7 | Extension (currently reserved) |

***TGah Editor: Change the paragraphs below as follows (#3296):***

Short frames with Type field value equal to 0 define a Short QoS Data frame where either A1 or A2 field is an SID as indicated in Table 8-397 (From DS values in Short frames) and the other A1 or A2 field contains a MAC address. Short frames with Type field value equal to 1 define a Short Management frame where either A1 or A2 field is an SID as indicated in Table 8-397 (From DS values in Short frames) and the other A1 or A2 field contains a MAC address. Short frames with Type field value equal to 2 define Short Control frames. Short frames with Type field value equal to 3 define a Short QoS Data frame where both A1 and A2 fields contain MAC addresses. All other values of the Type field are reserved.

The PTID/Subtype field is 3 bits and depending on the type of the Short frame it indicates:

* The 3 LSBs of the TID as defined in 8.2.4.5.2 (TID subfield) for Short QoS Data frames (Type field equal to 0 and 3) transmitted by a QoS STA.
* The Subtype for Short Control frames (Type field equal to 2) as described in 8.8.4 (Short Control frames)
* The Subtype for Short Management frames (Type field equal to 1) as described in 8.8.5 (Short Management frames)

The From DS field is 1 bit and, if present, it defines the addressing of Short frames with values of the Type field less than 2, as defined in Table 8-397 (From DS values in Short frames).

***TGah Editor: Change the table below as follows (#3296):***

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| * **From DS values in Short frames**
 |
|  **From DS field** | **Meaning** | **Use** |
| 0 | A1 contains the MAC address of the receiverA2 is an SID which contains the AID of the transmitter* A2 contains the MAC address of the transmitter for Short QoS Data frames with Type field equal to 3

A3 (if present) contains the MAC address of the destinationA4 (if present) contains the MAC address of the source | For frames transmitted by a non-AP STA to an APFor frames transmitted from a non-AP STA to non-AP STA (direct link) |
| 1 | A1 is an SID which contains the AID of the receiver* A1 contains the MAC address of the receiver for Short QoS Data frames with Type field equal to 3

A2 is the MAC address of the transmitterA3 (if present) contains the MAC address of the destinationA4 (if present) contains the MAC address of the source | AP to non-AP STA |

***TGah Editor: Insert a note immediately after the paragraph below as follows (#4197):***

The A-MSDU subfield is 1 if the MPDU contains a Dynamic A-MSDU as described in 8.3.2.2.4 (Dynamic A-MSDU format).

NOTE – PV1 frames without an SID field do not contain A3 and A4 fields and do not carry A-MSDUs.

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| **CID** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3746 | Liwen Chu | 196.36 | 8.8.4 | The Bandwidth Indication and Dynamic Indication should be reserved in responding control frames except CTS frame. | As in comment. | Rejected –The comment fails to identify an issue. As a response to the comment: Please note that the values are not reserved but currently used and the normative behaviour related to these two fields is already described in 9.7.11: “An S1G STA transmitting a non-NDP S1G Control response frame that is sent as a response to an S1G Control frame shall set the Bandwidth Indication field in the Frame Control field of the frame to the value of the Bandwidth Indication field in the Frame Control field of the eliciting frame, except for an S1G STA that has indicated the use of 1 MHz control response frames (see 9.7.6.6 (Channel Width selection for Control frames)) in which case the Bandwidth Indication field in the Frame Control field of the non-NDP S1G Control response frame shall be set to 0.An S1G STA shall set the Dynamic Indication field in the Frame Control field of S1G Control frames, other than RTS frame, to 0.” |
| 3747 | Liwen Chu | 197.21 | 8.8.4.1 | What does "added to the value of the TWT Identifier that corresponds to that Next TWT value." mean? Why do you need to add time value to the TWT identifier? | Clarify it. | Rejected –The comment fails to identify an issue and is asking a question. As a response to the comment: The statement describes the binary operation that the Next TWT Info field undergoes prior to the transmission of the frame that contains it. The final result of it being that the 29 MSBs of the Next TWT Info field contain the TSF time of the next TWT that corresponds to the TWT Identifier value included in the 3 LSBs of the same field.  |

* STACK frame format

***TGah Editor: Change the paragraphs below as follows (#No CID):***

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 0, then the Tetrapartial Timestamp/Next TWT Info/Suspend Duration field contains the lowest four octets of the TSF timer for a Next TWT logically ANDed with the value 0xFFFFFFF8 and then added to the value of the TWT Identifier that corresponds to that Next TWT value.

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 0 and the 29 MSBs(#3026) of the Next TWT Info subfield has a value of all zeroes, the transmitter does not currently have a Next TWT value available for transmission for the TWT indicated by the TWT Identifier corresponding to the value of the 3 LSBs of the Next TWT Info field.

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 1, then the Tetrapartial Timestamp/Next TWT Info/Suspend Duration field contains a flow suspension duration, in microseconds, during which the intended recipient TWT STAs are not allowed to transmit data frames to the STA identified by the RA field of the frame that elicited the STACK frame.

* BAT frame format

***TGah Editor: Change the paragraphs below as follows (#No CID):***

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 0, then the Next TWT Info/Suspend Duration field contains a Next TWT value for the intended recipient of the frame corresponding to the lowest six octets of the TSF timer for the Next TWT logically ANDed with the value 0xFFFFFFFFFFF8 and then added to the value of the TWT Identifier that corresponds to that Next TWT value.

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 0 and the 45 MSBs(#3026) of the Next TWT Info/Suspend Duration subfield has a value of all zeroes, the transmitter does not currently have a Next TWT value available for transmission for the TWT indicated by the TWT Identifier corresponding to the value of the 3 LSBs of the Next TWT Info/Suspend Duration field.

If the Next TWT Info Present field in the Frame Control field is equal to 1 and the Flow Control field of the Frame Control field is equal to 1, then the Next TWT Info/Suspend Duration field contains a flow suspension duration, in microseconds, during which the intended recipient TWT STAs are not allowed to transmit data frames to the STA identified by the A2 field of the BAT frame.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Frame Control | A1 | A2 | Sequence Control | A3 | Frame Body | FCS |
| Octets:  | 2 | 2 or 6 | 6 or 2 | 0 or 2 | 0 or 6 | variable | 4 |

**Figure 8-722a8 – Short Management frame format**