IEEE P802.11
Wireless LANs

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| Comment Resolution for Subclauses Misc. |
| Date: 2014-05-12 |
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Abstract

This submission proposes resolutions for some of the comments of TGah Draft 1.0 with the following CIDs:

1086, 1092, 1144, 1436, 1662, 1663, 1666, 1704, 1705, 1812, 1874, 1879, 2229, 2357, 2581, 2608, 2738, 2831, 2832, 2834, 2878, 2952, 2099, 2337, 2060, 2056, 2057, 2058, 2059, 2497, 2498, 2195, 1402

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** | **Page.Line** | **Subclause** | **Comment** | **Propose Change** | **Resolution** |
| 1086 | 63.46 | 8.4.1.11 | .11ad added a column to this table. Also note that the number of the table has changed in REVmc D2. | Add missing column | Accept:TGah Editor to make the changes as proposed by the CID 1086 |
| 1092 | 67.34 | 8.4.1.54 | " the amount of time in usec that" -- styleuse "microseconds" in this context, and use <mu>s when a value is being expressed. | usec -> microseconds. | Accept:TGah Editor to make the changes as proposed by the CID 1092 throughout the draft |
| 1144 | 117.09 | 8.4.2.170s | The row labelled "Octets:" in Figure 8-401dw should be "Bits:" | As in comment. | Accept:TGah Editor to make the changes as proposed by the CID 1144 |
| 1436 | 116.43 | 8.4.2.170s | currently AP Power Management element is always present to indicate the AP Power Save operation, which may not be always necessary | consider other ways to signal AP PM | Revise:Proposed resolution:Use the reserved bit in the FC Header of the Short Beacon to signal the AP PMTGah Editor to make the changes as proposed in document 0641r1 under the heading of CID1436 |
| 1662 | 3.11 | 4.12 | This sentence claims that a relay is an entity that "logically" consists of two STAs (one of which is an AP). What kind of logic can possibly "consist of" two MACs and two PHYs, two SMEs, etc. What is being described here is a physical entity (box, etc.), not any kind of logical relationship that is defined in IEEE 802.11. This standard does not specify physical entities, so this term does not belong in IEEE 802.11. | Delete this sentence and all sentences in the draft that refer to this "relay" (without that word being followed by "STA" or "AP"). | Reject:The way that Relay is defined in the draft is actually as a logical relationship of Relay-STA and Relay-AP. |
| 1663 | 3.11 | 4.12 | "Relay", "Relay STA" and "Relay AP" are not frames, fields, elements, etc., so do not take initial caps. | Replace each instance of "Relay" with "relay" throughout the draft (unless the instance is part of the name of a defined STA exchange object, such as the Relay element). | Accept:TGah Editor to make the changes as proposed by the CID 1663 throughout the draft |
| 1666 | 4.24 | 4.12.3 | "Relay" is not the name of a defined STA exchanged object (frame, field, element, etc.) so does not use the initial cap. | Assuming that the definition of "relay" is changed to "relay STA or relay AP", then replace the standalone word "Relay" with "relay" throughout this draft. Otherwise remove this concept of relay from the draft. | Accept:Similar to CID 1663, TGah Editor to make the changes as proposed by the CID 1663 |
| 1704 | 136.19 | 8.5.26.1 | "flow suspend" is a confusing name, at best. | Replace "Flow Suspend" with "Flow suspension" here and with "Flow Suspension" when used as the name of the field, throughout the draft. In addtion, replace "Suspend Duration", when used as the name of that defined field, with "Suspension Duration" throughout the draft. | Accept:TGah Editor to make the changes as proposed by the CID 1704 |
| 1705 | 136.22 | 8.5.26.1 | "flow resume" is a confusing name, at best. | Replace "Flow Resume" with "Flow resumption" here and with "Flow Resumption" when used as the name of the field, throughout the draft. | Accept:TGah Editor to make the changes as proposed by the CID 1705 |
| 1812 | 25.30 | 4.12 | "The Relay is illustrated in Figure 4-31..." The Relay what? I think we need a word after Relay - is it Relay feature, Relay function, Relay example? Suggest "an example of the Relay function is..." that may be better. | Replace "The Relay is illustrated..." with "An example of the Relay function is illustrated..." Having said that, this diagram should not be Clause 4. It should be in the intro section of Clause 9. | Revise : This has already been addressed. TGah Editor to make changes provided in document 14/0314r1.  |
| 1874 | 206.16 | 9.41.5 | I am having a problem with all this "NDP" use. NDP = Null Data Packet but we have NDP Control Packets when Control Packets (the ones we already have) contain no 'data'. I have struggled through all the NDP CTS, NDP PS Poll , NDP ACK etc, which no reference to Null Data Packets and now I read "NDP Paging". What am I missing here? Why this obsession with "NDP"? Now to e specific, as far as I know "paging" does not appear in 11mc D2.0 or in 11ac. So why do we need "NDP Paging and not just "paging"? | Please have a second look at this over use of NDP when it is not appropriate. If NDP is supposed to be a specific reference to S1G then term something specific. If it is intended to cover any STA (cos it a good feature) then find something else. In this case surely "paging" is good enough. Replace "NDP Paging" with "Paging" throughout. An option would be to use "TWT Paging" | Revise:The use of the NDP is related to the fact that the frames defined in subclause 8.3.5 (including NDP Paging) carry all the MAC information in the SIG field of the PPDU.Proposed resolution is the same as the already accepted comment resolution in 14/0210r1 which instructs the editor to add a definition for NDP MAC frames (including NDP Paging) in Subclause 3.2 as follows:Instruction to TGah Editor: Add the following definition in subclause 3.2 (@REVmc D2.0):“NDP MAC frame: A physical layer (PHY) protocol data unit (PPDU) with no Data field that carries medium access control (MAC) information in the SIGNAL field of the sub 1 GHz (S1G) PPDU.” |
| 1879 | 207.01 | 9.41.5 | Why is Short in brackets? Should be "Short Beacon" | Remove brackets around 'Short" | Revise:Agree in principle with the commenter. Proposed resolution is the same as the already accepted comment resolution in 14/0324r1 which instructed to the editor as follows:Instructions to TGah Editor: Replace all occurrences of “(Short) Beacon” with “S1G Beacon” within subclause 9.41.5 (NDP Paging Setup). |
| 2229 | 186.09 | 9.41.6 | What's TWT Adjusted SP? Searched entire 11ah/D1.0 doc, only one occurrence, i.e., line 9 page 186. | Please define TWT Adjusted SP, or just change it to TWT SP. | Revise:This CID is already addressed in D1.2 |
| 2357 | 4.21 | 4.12.3 | How about flow control in the other direction, i.e. to pause traffic from the AP? | Add some mechanism to allow for flow control in that direction too | Revised:This CID is already addressed in D1.2 |
| 2581 | 136.19 | 8.5.26.1 | A Flow Suspend frame shall be the Time priority management frame. | Insert a "Time Priority" column to the Table 8-363n (Flow Control Action field format) with the value of "Yes" in the Flow Suspend row. | Accept:TGah Editor to make the changes as proposed by the CID 2581 |
| 2608 | 3.08 | 4.12 | The concept of Relay was introduced in clause 4.12 without much explanation of its relationship to other architectural components. For example 802.11ah Relay seems to introduce a relay-based distribution system. | Explain the relationship between 802.11ah Relay and the other 802.11 architectural coponents, espacialy in the context of a DS | Reject:The comment failed to identify a real issue.Response to the commenter:It is not clear what are the “other 802.11 architectrul components”. |
| 2738 | 137.26 | 8.5.26.3 | The reference to the Table is wrong | Change to "The Flow Control Action field is set to the value in Table 8-363n (Flow Resume frame Action field format) representing Flow Resume | Accept:TGah Editor to make the changes as proposed by the CID 2581 |
| 2831 | 3.11 | 4.12 | A Relay AP is a part of Relay. Suggest to use Relay-AP | Change Relay AP to Relay-AP and align with the Figure 4-31. Similar change applicable to other places | Revise: TGah Editor to change all occurances of Relay STA to relay-STA and Relay AP to relay-AP. |
| 2832 | 3.11 | 4.12 | A Relay STA is a part of Relay. Suggest to use Relay-STA to avoid confusion with Relay STA such as in line 1 of page 26. | Change to Relay STA to Relay-STA and align with the Figure 4-31. Similar change applicable to oher places | Revise:as in CID 2831 |
| 2834 | 4.22 | 4.12.3 | Clarification: can flow control be applicable to AP? i.e. can a Relay use flow control signal to request AP to stop sending frames to it until later time? | Please clarify. | Revise:This CID is already addressed in D1.2. |
| 2878 | 4.24 | 4.12.3 | 9.48.4 does not limit the Flow control to uplink only. But, 4.12.3 limits the flow control to uplink only. These two sections need to be coordinated | As mentioned in the Comment. | Revise: TGah editor to change the following in 9.56: “The STA or AP sending the flow-control instruction is called the flow-controlling STA.” |
| 2952 | 67.34 | 8.4.1.54 | Inappropriate use of 'usec' | Change 'usec' to microsecond | Accept:TGah Editor to make the changes as proposed by the CID 2952 throughout the draft |
| 2099 |  |  | A Relay entity sounds a lot like a MESH STA. Why would a MESH STA not be capable to perform the funcitons called out by the Relay STA? A Relay STA, Relay AP and Relay Entity definitions are also missing from the defintion section | Add a definition to clause 3 for Relay STA that includes how to differentiate a Relay STA from a MESH STA. Add a definition to clause 3 for Relay AP and include how it is diferent from an MESH AP. Add a definition to claus 3 for a Relay Entity. iTe definition should show how it is different from the other entities currently in the 802.11 standard. | Reject:Mesh is not supported in 11ah. Relay is a simpler solution of the Mesh which exists in 11ah. |
| 2337 |  |  | Can a Relay also have a local LLC? Is such an LLC a client of the Relay STA's MAC SAP, or the Relay AP's MAC SAP, or could there be an LLC interfacing to a MAC SAP for both? | Clarify the architecture of a Relay | Reject:A relay consists of a non-AP STA and an AP, each one has a local LLC similar to regular STAs. |
| 2060 | 3.00 | 4.12.1 | "This improve battery life" is an implementation dependent statement and should be removed. | As suggested. | Accept:Agree with the commentor. TGah editor to remove the sentence as suggested by CID 2060 |
| 2056 | 3.00 | 4.12 | This section needs a good editorial polishing. In "The Relay AP" and "The Relay STA", the definite article "The" should be replaced with the indefinite article "An". In several places, "associated to" should be "associated with". There are also other grammatical errors. | Fix editorial errors. | Accept:TGah editor to make the edits as suggested by the commenter of CID 2056 throughout the draft |
| 2057 | 3.00 | 4.12 | A "Root AP" is a non-Relay AP, but it includes a Relay element in frames just like a Relay AP. The description is confusing. | Please clarify. | Reject: Commentor failed to identify a rela issue.Response to the commentor:Root AP includes the Relay element to indicate its support for Relays as a Root AP.  |
| 2058 | 3.00 | 4.12 | "The Relay is illustrated" is confusing since a Relay is defined as an entity. Is the intention to say that "The operation of a network involving Relays is illustrated"? | As suggested. | Revise:The comment is already addressed in D1.2 |
| 2059 | 3.00 | 4.12.1 | So is the convention to use "relay" or "Relay"? | Please clarify. | Revise:TGah Editor to replace all the “relay”s with “Relay” if they are talking about an entity and “Relay” to “relay” if they talk about a functionality.  |
| 2497 | 4.12 | 3.14 | Wrong terminology. | Change "4 address frame format" to "four-address MAC header format" | Accept:TGah editor to make the changes as proposed by CID 2497 |
| 2498 | 4.20 | 3.14 | Missing information. | Change "and receives a Relay element in the association response" to "transmits a Relay element in the (Re)Association request and receives a Relay element in the (Re)Association response" | Accept:TGah Editor to make the changes as proposed by CID 2498 |
| 2195 | 101.04 | 8.4.2.170j | Have a question about the Action subfield in the NDP Paging field of the TWT element: This Action is per Paging setup (agreement), i.e., including all the instances after receivign a NDP Paging frame. This assumes all the pagings are for the same purpose. However, in real life, the paging may be triggered by different reasons, e.g., bufferred data, critical changes in Beacon, etc.Then, the question is: Why not allow Actions per Paging, i.e., including the Action field in the Paging frame, not the Page setup frame? Also, note that there are some reserved bits in NDP paging frame, which means the possibility of designing a per paging Action indication. | Suggest moving the Action field from NDP Paging setup in TWT element to NDP Paging frame. | Reject:The comment failed to identify a real issueRespond to the commentor:The STA may operate in a extreme power save mode when receives a wakeup message, it may not be able to process that message at the time of wakeup to know what behavior is expected. For that reason this behavior is fixed at the negotiation time.  |
| 1402 | 222 | 10.2.2.19 | an STA may have different requirements to access the channel | define a maximum away duration time at the time of association advertised by the STA that AP should consider to set the time for flow control or AP Power Management | Revise:TGah Editor to make the changes provided in the document 0641r1 under the heading of CID 1402. |

CID 1436, 1402

*TGah Editor: All the Editorial notes are based on D1.3*

*TGah Editor to change the Reserved bit in Figure 8-55 FC field format of subcluase 8.3.4.2 of D1.0 to “AP PM”*

*TGah Editor to add the following at the end of the sublcause 8.3.4.2:*

The AP-PM field indicates whether the AP can go to sleep mode until the next T(S)BTT.

If AP-PM bit is equal to 1, AP can go to sleep until the next T(S)BTT unless otherwise is indicated by RAWs or TWTs. If AP-PM is equal to 0, the AP does not go to sleep until the next T(S)BTT.

*TGah Editor to change 10.2.2.19 as following*

**10.2.2.19 AP Power management**

An S1G AP with dot11APPMActivated equal to true may operate in the following Power Management modes:

—Active

—Power save

An AP in Active mode shall be in Awake state and may receive frames at any time.

An AP with dot11APPMActivated equal to true in Power Save mode may be in any of the following two power states:

— Awake

— Doze

The AP with dot11APPMActivated equal to true may indicate that it is operating in Power Save mode by:

— setting the AP PM bit in the Frame Control field of the S1G Beacon to 1.

— or including one or more RPS elements in Beacon or Short Beacon frame, with the RAW Assign-ment Type set to Simplex RAW and RAW Type Options is set to 0.

The AP shall operate in Active mode during a beacon interval or short beacon interval if the AP PM subfield in the S1G Beacon frame transmitted at the T(S)BTT is equal to 0. Similarly, the AP shall operate in Active mode during one or more RAWs defined by an RPS element with the RAW Assignment type equal to Generic RAW, Sounding RAW, Triggering Frame RAW or Simplex RAW with RAW Type Options set to 1 or 2.

An APthat transmits an S1G Beacon frame with AP PM subfield equal to 1 may be in Doze state at any time until the next T(S)BTT, except that it shall be in Awake state during any of the following intervals of time:

— any RAW intervals that are setup according to 9.20.5 (Restricted Access Window (RAW) Opera-tion), except for RAWs that are defined by any RPS element with RAW Assignment Type set to AP Simplex RAW and RAW Type Options is set to 0;

— starting at any TWT start time, and for the following Adjusted Minimum Awake Duration as described in 9.41 (Target Wake Time (TWT)).

An AP that transmits an S1G Beacon frame with AP PM subfield equal to 1shall include an RPS element in the S1G Beacon frame that indicates an omni RAW during which all STAs are allowed to access (i.e., the RPS element contains a RAW Assignment field with RAW Type field equal to 3 and RAW Type Options subfield equal to 2 ). The omni RAW may be used for association of new STAs.

An AP shall not be in Doze state for a duration of time that exceeds the value of the dot11MaxAwayDuration. The AP shall set dot11MaxAwayDuration to the lowest value obtained from the Max Away Duration field that is contained in the most recently received MAD elements from any of its associated STAs.

An AP may reject an association or reassociation request from a STA if it considers the STA’s value of theMax Away Duration field of the MAD element included in the (Re-)Association Request frame to be unacceptable. For example, an AP that schedules to be in Doze state for 100ms can reject association of a STA that indicates in the Association Request frame a value of 30ms in its Max Away Duration field.

An AP may disassociate an STA based on the value indicated by Max Away Duration of the latest MAD element received from that STA.

An AP may include a MAD element in the (Re-)Association Response or Probe Response frame that indicates the suggested maximum away duration during which the AP can be considered in Doze state.

An STA may include a MAD element in the Probe Request or (Re-)Association Requests frames.

Irrespective of the Power Managementmode and Power States, an AP shall maintain the synchronization of the network by generating beacons as described inclause 10.1.3 (Maintaining synchronization). A STA that is the intended receiver ofa frame transmitted by an AP that has the PM Mode subfield set to 0 shall consider the AP in Active mode.(#66)

An AP that has previously sent a frame to one or a group of STAs with PM bit equal to 0, shall send a frame with PM bit equal to 1 to the same set of STAs before changing its operation mode to Power Save mode.(#66)

A STA that is the intended receiver ofa frame transmitted by an AP that has the PM Mode subfield equal to 1 shall consider the AP in Power Save mode.(#66)

*TGah Editor to remove the subclause 8.4.2.170s and row 5 of table 8-39*

*TGah Editor to add the following subcluase at the end of 8.4.2.170xx*

8.4.2.170xx MAD element

The Max Away Duration element is shown in Figure 1 (Max Away Duration element):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  | Element ID | Length | Max Away Duration |
| Octets: | 1 | 1 | 2 |
| Figure 1: Max Away Duration element |

The Element ID and Length fields are defined in 8.4.2.1 (General).

The Max Away Duration field indicates the maximum duration that the AP may be out of reach for the STA (operating in other channels, sleeping or operating in other RAWs). Max Away Duration field has a unit of microsecond.

TGah editor to add the following row to the Tables **8-29 to 8-34**

|  |  |  |
| --- | --- | --- |
| Xx | MAD element | The MAD element is optionally present. |

TGah editor to add the following to the Annex C:

dot11MaxAwayDuration Unsigned32(0..65535),

dot11APPMActivated TruthValue,

TGah editor to add the following to the end of Annex C:

dot11MaxAwayDuration Unsigned32(0..65535)

 SYNTAX Integer

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 " This is a control variable.

 It is written by an external management entity. Changes take effect as soon as practical in the implementation.

 This attribute indicates from the STA, the maximum allowed duration for the AP to be not reachable, from the AP, the maximum duration that AP guarantees to be reachable by the STA."

 DEFVAL { 65535 }

 ::= { dot11S1GStationConfigEntry xx }

dot11APPMActivated OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 This is a control variable.

 It is written by an external management entity. Changes take effect as soon as practical in the implementation.

 This attribute indicates if the AP may go to doze state.”

 DEFVAL { false }

 ::= { dot11S1GStationConfigEntry xx }

*TGah editor to include the “MaxAwayDuration” and the following row in the corresponding tables in the following subclauses:*

* *6.3.3.2 MLME-SCAN.request*
* *6.3.3.3 MLME-SCAN.confirm*
* *6.3.7.2 MLME-ASSOCIATE.request*
* *6.3.7.3 MLME-ASSOCIATE.confirm*
* *6.3.7.4 MLME-ASSOCIATE.indication*
* *6.3.7.5 MLME-ASSOCIATE.response*
* *6.3.8.2 MLME-REASSOCIATE.request*
* *6.3.8.3 MLME-REASSOCIATE.confirm*
* *6.3.8.4 MLME-REASSOCIATE.indication*
* *6.3.8.5 MLME-REASSOCIATE.response*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid Range** | **Description** |
| MaxAwayDuration | Integer | 0-65535 inclusive | Indicates the maximum duration that AP maybe away for the STA  |