IEEE P802.11
Wireless LANs

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| **Comment Resolution for 10.1** |
| **Date:** 2013-07-01 |
| **Author(s):** |
| **Name** | **Affiliation** | **Address** | **Phone** | **email** |
| Alfred Asterjadhi | Qualcomm Inc. | 5775 Morehouse Dr San Diego, CA 92109 | +1-858-658-5302 | aasterja@qti.qualcomm.com |
| Simone Merlin | Qualcomm Inc. |  |  | smerlin@qti.qualcomm.com |

Abstract

This document provides comment resolution for TGah Draft 0.1 Comment Collection 9 with these CIDs: 32, 54, 187, 188, 240, 417, 543, and 821.

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** |
| 54 | 164 |  | change do11ShortBeacon to dot11ShortBeacon.Error seems to be present throughout the section. | As in comment | Revised –See comment resolution for CID 543 in 11-13-0820-01-00ah. |
| 187 | 165.41 | 10.1.3.7a.1 | The variable name "do11ShortBeacon" does not follow the naming rule of the specification. | Change "do11ShortBeacon" to "dot11ShortBeacon" | Revised –See comment resolution for CID 543 in 11-13-0820-01-00ah.Note to EDITOR: Conflicts with resolution |
| 188 | 165.61 | 10.1.3.7a.2 | Typo for variable name "dott11ShortBeaconPeriod". | Change to "dot11ShortBeaconPeriod" | Revised –See comment resolution for CID 543 in 11-13-0820-01-00ah.Note to EDITOR: Conflicts with resolution |
| 543 | 165.16 | 10.1.3.2 | In subclauses 10.1.3.2 and 10.1.3.7a.1, "do11ShortBeacon" is used. Though, in subclause 8.3.3 and 10.43c.1, "dot11ShortBeaconOptionImplemented" is used. | Replace "do11ShortBeacon" by "dot11ShortBeaconOptionImplemented" | Revised –TGah editor to make changes shown in 11-13-0820-01-00ah under the heading for CIDs 54, 187, 188, 543. |

**Discussion:** *Agree with the commenters regarding the existing inconsistencies and proposed resolution is to replace do11ShortBeacon with dot11ShortBeaconOptionImplemented as specified in CID 543.*

* **Maintaining synchronization**
* **Beacon generation in infrastructure networks**

**Instruction to Editor: *Please Modify the the following paragraphs of 10.1.3.2 as follows:***

A non-S1G AP or a S1G AP with dot11ShortBeaconOptionImplemented set to false ~~The AP~~ shall define the timing for the entire BSS by transmitting Beacon frames according to dot11BeaconPeriod. This defines a series of TBTTs exactly dot11BeaconPeriod TUs apart. Time 0 is defined to be a TBTT with the Beacon frame being a DTIM. At each TBTT, the AP shall schedule a Beacon frame as the next frame for transmission according to the medium access rules specified in Clause 9. The beacon period is included in Beacon and Probe Response frames, and a STA shall adopt that beacon period when joining the BSS, i.e., the STA sets its dot11BeaconPeriod variable to that beacon period.

A non-S1G AP shall not transmit Short Beacon frames.

The operation of an S1G AP with dot11ShortBeaconOptionImplemented set to true is defined in section 10.1.3.7a.1 (General).

* **General**

**Instruction to Editor: *Please modify the following paragraphs of 10.1.3.7a.1 as follows:***

A S1G AP with dot11ShortBeaconOptionImplemented set to true shall send a Short Beacon frame at intervals given by the dot11ShortBeaconPeriod with the following exception: a Beacon may be sent instead of a Short Beacon in a Short Beacon Interval of a TSBTT that coincides with a TBTT. The timestamp of the Short Beacon is set to the 4 LSBs of the TSF timer at the time that the data symbol containing the first bit of the timestamp is transmitted. Note that an AP that has dot11ShortBeaconOptionImplemented set to true may use the procedures of clause 10.1.3.2 when transmitting a Short Beacon.

* **Generation of Short Beacon**

**Instruction to Editor: *Please modify the following paragraphs of 10.1.3.7a.1 as follows:***

Short Beacon may be transmitted in a BSS only. The use of a Short Beacon frame in an IBSS or MBSS is beyond scope. An AP may define the timing for the BSS by sending Short Beacon frames according to the dot11ShortBeaconPeriod. The value for the dot11ShortBeaconPeriod shall be such that dot11BeaconPeriod = n\*dot11ShortBeaconPeriod, where n is an integer. This defines a series of TSBTTs exactly dot11ShortBeaconPeriod TUs apart. If n is larger than 1, the Time of Next TBTT Present field shall be set to 1 and the Next TBTT field shall be present in Short Beacon frames. Time 0 is defined to be a TBTT or TSBTT with the Beacon frame or Short Beacon frame being a DTIM.

* **General**

**Instruction to Editor: *Please modify the before last paragraph of 10.2.1.1 as follows:***

In a BSS with AP that has dot11ShortBeaconOptionImplemented set to true, a Short Beacon may be sent or instead of a Beacon during at a TBTT that coincides with a TSBTT. All operations for power management at STAs in such a BSS shall use the information in the Short Beacon during a TBTT that has a Short Beacon only.

* **TIM types**

**Instruction to Editor: *Please modify the following paragraphs of 10.2.1.4 as follows:***

The AP shall transmit a TIM with every Beacon frame. Every dot11DTIMPeriod, a TIM of type DTIM is

transmitted within a Beacon frame, rather than an ordinary TIM. In an AP with dot11ShortBeaconInterval

 set to true, Short Beacon frames may include a TIM. Every dot11ShortBeaconDTIMPeriod, the AP shall transmit a TIM of type DTIM in the Short Beacon frame.

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| **CID** | **P.L** | **SC** | **Comment** | **Proposed Change** | **Resolution** |
| 240 | 165.62 | 10.1.3.7a.2 | The integer "n" value is multiplied to the interval. It should be defined as having positive interger range. | Modify "where n is an interger." as "where n is an positive interger." | Revised --TGah editor to make changes shown in 11-13-0820-01-00ah under the heading for CIDs 240, and 417. |
| 417 | 165.64 | 10.1.3.7a.2 | The name of 'Time of Next TBTT Present' field has been changed to 'Next TBTT Present' in 8.3.4.1a Short Beacon frame format. | Change the name 'Time of Next TBTT Present' field to 'Next TBTT Present' in 10.1.3.7a.2 | Revised –TGah editor to make changes shown in 11-13-0820-01-00ah under the heading for CIDs 240, and 417. |

**Discussion:** *None.*

* **Generation of Short Beacon**

**Instruction to Editor: *Please modify the following paragraphs of 10.1.3.7a.1 as follows:***

Short Beacon may be transmitted in a BSS only. The use of a Short Beacon frame in an IBSS or MBSS is beyond scope. An AP may define the timing for the BSS by sending Short Beacon frames according to the dott11ShortBeaconPeriod. The value for the dot11ShortBeaconPeriod shall be such that dot11BeaconPeriod = n\*dot11ShortBeaconPeriod, where n is a positive integer. This defines a series of TSBTTs exactly dot11ShortBeaconPeriod TUs apart. If n is greater than 1, the Next TBTT Present field shall be set to 1 and the Next TBTT field shall be present in Short Beacon frames. Time 0 is defined to be a TBTT or TSBTT with the Beacon frame or Short Beacon frame being a DTIM.

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| **CID** | **P.L** | **SC** | **Comment** | **Proposed Change** | **Resolution** |
| 32 | 1361 | 10.1.4.4 | Add short beacon, short probe response operation and setup during initialization of the BSS and other sections of this clause | As in comment | Revised –TGah editor to make changes shown in 11-13-0820-01-00ah under the heading for CID 32. |

**Discussion:** *Agree with the commenter that short beacon which is used in S1G BSS is missing in the description of BSS initialization. Proposed comment resolution is to add text enabling Short Beacon in BSS initialization for S1G.*

* **Initializing a BSS**

**Instruction to Editor: *Please modify the following subclause as follows (REVmc D0.3):***

Upon receipt of an MLME-START.request primitive, a STA shall determine the BSS’s BSSID (as described in 10.1.4 (Acquiring synchronization, scanning)), select channel synchronization information, select a beacon period, select the operational rate set, initialize and start its TSF timer, and begin transmitting Beacon frames. Upon receipt of an MLME-START.request primitive, a S1G STA shall additionally select a short beacon period, and may begin transmiting Short Beacon frames.

A STA shall include a Country element in the transmission of (Short) Beacon frames if dot11MultiDomainCapabilityActivated, dot11SpectrumManagementRequired, or dot11RadioMeasurementActivated is true. See 8.3.3.2 (Beacon frame format) for the description of a properly formed (Short) Beacon frame.

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| **CID** | **P.L** | **SC** | **Comment** | **Proposed Change** | **Resolution** |
| 821 | 165.1 | 10.1.5 | 10.1.5 Adjusting STA timers; need to adapt to short beacon | As in commnet | Revised –TGah editor to make changes shown in 11-13-0820-01-00ah under the heading for CID 821. |

**Discussion:** *Agree with the commenter. Proposed comment resolution is to adapt section and add use of Short Beacon frames.*

* **Adjusting STA timers**

**Instruction to Editor: *Please modify the following subclause as follows (REVmc D0.3):***

In an infrastructure BSS, STAs shall adopt the TSF timer value in a (Short) Beacon frame or (Short) probe response coming from the AP in their BSS by using the algorithm in 10.1.3.7 (TSF timer accuracy).

In response to an MLME-JOIN.request primitive, a STA joining an IBSS shall initialize its TSF timer to 0 and shall not transmit a (Short) Beacon frame or (Short) probe response until it hears a (Short) Beacon frame or (Short) probe response from a member of the IBSS with a matching SSID. Consequently, the STA joining an IBSS adopts the timer from the next (Short) Beacon frame or (Short) probe response from its IBSS.

All (Short) Beacon and (Short) Probe Response frames carry a Timestamp field. A STA receiving such a frame from another STA in an IBSS with the same SSID shall compare the Timestamp field with its own TSF time. If the Timestamp field of the received frame is later than its own TSF timer, the STA in the IBSS shall adopt all parameters contained in the (Short) Beacon frame according to the rule for that parameter found in the “IBSS adoption” column of the matching row of the BSSDescription table found in 6.3.3.3.2 (Semantics of the service primitive). Parameters adopted by a STA due to the receipt of a later timestamp shall not be changed by the STA except when adopting parameters due to a subsequently received (Short) Beacon frame with a later timestamp.