IEEE P802.11
Wireless LANs

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| LB 200 MAC Comment Resolution on Synchronization (Clause 10.1.2, 10.1.3.10 and 10.1.4.4.1) |
| Date: 2014-04-07 |
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Abstract

This submission proposes comment resolutions on Synchornization (Clause 10.1.2, 10.1.3.10 and 10.1.4.4.1)

* CIDs: 2477, 1273, 1392, 2471, 2637, 1274, 1275, 1276, 1277, 2469, 2470, 2636, 1393, 2790, 2472, 1281, 2475, 2776 (18 CIDs)

Changes in the text refer to: Draft P802.11ah/D1.2

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.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 2477 | 213 | 10.1.2 | "An S1G AP with dot11ShortBeaconOptionImplemented equal to true" -- so you can be a S1G AP with dot11SBOI equal to false? Or a non-S1G device even if do11SBOI is equal to true? | Be consistent on how to refer to devices, e.g. always "S1G <device>" or always "<device> with dot11SBOI equal to true" | Revised-Commenter is correct. The sentence has been already modified by 11-14-324r1 during March 2014 meeting. It has already been resolved.  |
| 1273 | 214 | 10.1.3.10 | "Maintaining Synchronization with Short Beacon" - grammr | "Maintaining Synchronization using Short Beacon frames" | Revised-TGah Editor to make changes shown in 14/0520 |
| 1392 | 214 | 10.1.3.10.1 | Some inconsistent uses of the LSB acronym were found. In some cases it represents an acronym to least significant bytes and in other cases an acronym to least significant bits. | Replace "LSB(s)" with "least significant bytes" in those sections, throughtout the draft, where it is used as such in order to resolve the conflict. Add LSB to the acronym list if not present. | Revised-LSB has already been replaced with “least significant octets” in D1.2.LSB has already been included in the acronym list of 802.11REVmc. . |
| 2471 | 214 | 10.1.3.10.1 | "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." -- so it is not required to follow 10.1.3.2? But 10.1.3.2 has "shall"s! | Just delete the sentence, or clarify in what way 10.1.3.2 is optional | Revised-The sentence has been deleted by 11-14-324r1 during March 2014 meeting. It has already been resolved.  |
| 2637 | 214 | 10.1.3.10.1 | Final sentence of 10.1.3.10.1 has wrong reference: 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. | Change to "clause 10.1.3.10.2 when transmitting a Short Beacon." | Revised-The sentence has been deleted by 11-14-324r1 during March 2014 meeting.  |
| 1274 | 214 | 10.1.3.10.2 | "Generation of Short Beacon" - grammar | "Generation of Short Beacon frames" | Revised-TGah Editor to make changes shown in 14/0520 |
| 1275 | 214 | 10.1.3.10.2 | "The use of a Short Beacon frame in an IBSS or MBSS is beyond scope."No, the use is not permitted by the previous sentence. | Delete cited sentence. | Accepted-TGah Editor to make changes shown in 14/0520 |
| 1276 | 214 | 10.1.3.10.2 | "Short Beacon may be transmitted in a BSS only."Missing "frames". Also an IBSS is a BSS, so this contradicts. | "Short Beacon frames may be transmitted in an infrastructure BSS only." | Revised-The sentence has been replaced with “S1G Beacon frames shall be transmitted in an S1G BSS and S1G IBSS” by 11-14-324r1 during March 2014 meeting. |
| 1277 | 214 | 10.1.3.10.2 | Names representing variables (e.g. "n") need to be italic according to IEEE-SA style. Note however, we don't do that to the names of fields or MIB variables. | Change the "n"s to italic. | Accepted-TGah Editor to make changes shown in 14/0520 |
| 2469 | 214 | 10.1.3.10.2 | "in a BSS only" -- almost everything is in a BSS! | Add "infrastructure" | Revised-The sentence has been replaced with “S1G Beacon frames shall be transmitted in an S1G BSS and S1G IBSS” by 11-14-324r1 during March 2014 meeting. |
| 2470 | 214 | 10.1.3.10.2 | "is beyond scope"? | Just delete the whole sentence (or change to "shall not be transmitted" and add PBSS and any other flavours of BSS I might have momentarily forgotten about) | Accepted-TGah Editor to make changes shown in 14/0520 |
| 2636 | 214 | 10.1.3.10.2 | "is beyond scope." is too terse. | Change to "is outside the scope of this standard." | Revised-The sentence “Short Beacon may be transmitted in a BSS only” has been replaced with “S1G Beacon frames shall be transmitted in an S1G BSS and S1G IBSS” by 11-14-324r1 during March 2014 meeting. So the sentence containing “is beyond the scope” can be just deleted.TGah Editor to make changes shown in 14/0520 |
| 1393 | 214 | 10.1.3.10.3 | What about when the Short Beacon includes the Beacon compatibility element? | Describe TSF Timer update based on the "TSF Completion field: Replace "The higher 4 bytes of the TSF shall be adjusted to account for roll over." with " The higher 4 bytes of the TSF shall be set to the value of the TSF Completion field in the Beacon Compatibility element (if present). Otherwise, the higher 4 bytes of the TSF shall be adjusted to account for roll over." | Revised-11-14-324r1 that has been approved during March 2014 meeting provides the resolution. Additional text change is not required. |
| 2790 | 214 | 10.1.3.10.4 | 10.1.3.10.4 doesn't need to be inserted. | 10.1.4.2.1 specifies identical content in REVmc\_D2.0. | Rejected-Although 10.1.4.2.1 and 10.1.3.10.4 both contain identical content, 10.1.3.10.4 implies that S1G Beacon frames are used instead of Beacon frames for passive scanning in 11ah. So it is better to insert the clause 10.1.3.10.4. |
| 2472 | 214 | 10.1.3.10.5 | Surely this stuff only applies at a STA with dot11ShortBeaconOptionImplemented and when the BSSType is INFRASTRUCTURE? Ditto in 10.1.4.4.1 | Add caveats to that effect | Revised-10.1.3.10.5 has been removed from the draft by 11-14-324r1 that has been approved during March 2014 meeting. The revised text in 10.1.4.4.1 by 11-14-324r1 clearly states that this applies to S1G STA. 10.1.4.4.1 is not limited to infrastructure BSS only. |
| 1281 | 217 | 10.1.4.4.1 | "Upon receipt of an MLME-START.request primitive, an S1G STA shall additionally select a short beacon period, and may begin transmitting Short Beacon frames."Surely this is wholly dependent on with dot11ShortBeaconOptionImplemented. | "Upon receipt of an MLME-START.request primitive, an S1G STA with dot11ShortBeaconOptionImplemented equal to true shall select a short beacon period, and shall begin transmitting Short Beacon frames."Or perhaps this is redundant given 214.14. In which case: "Upon receipt of an MLME-START.request primitive, an S1G STA with dot11ShortBeaconOptionImplemented equal to true selects a short beacon period, and begins transmitting Short Beacon frames (see 10.1.3.10)." | Rejected-S1G beacon is mandatory for S1G STAs, so it is not necessary to add “with dot11ShortBeaconOptionImplemented equal to true”. |
| 2475 | 217 | 10.1.4.4.1 | This suggests an S1G AP is required to transmit (non-Short) Beacons, but earlier subclauses state clearly that there is no such requirement | Amend the baseline text accordingly | Rejected-Only S1G beacon is transmitted by an S1G AP. An S1G AP generates S1G beacon frames every beacon period, and it may additionally generate S1G beacon frames every short beacon period. This is already implied in 10.1.4.4.1. It is also described in 10.1.2.  |
| 2776 | 217 | 10.1.4.4.1 | Short Beacon Interval is optional, why S1G BSS shall set Short Beacon Interval? | please clarify | Revised-“shall” has been changed to “may” by 11-14-324r1 during March 2014 meeting. So, the comment has already been resolved.  |

**Discussion:**

**CIDs: 2477, 1273, 1392, 2471, 2637, 1274, 1275, 1276, 1277, 2469, 2470, 2636, 1393, 2790, 2472, 1281, 2475, 2776 (18 CIDs)**

See the resolution column in the table

**Proposed Remedy:**

***Instructions to TGah Editor: Change the subclause 10.1.3.10.1 and 10.1.3.10.2 as follows***

**10.1.3.10 Maintaining Synchronization ~~with~~using ~~Short~~S1G Beacon Frames**

**10.1.3.10.1 General**

An S1G AP with dot11ShortBeaconOptionImplemented set to true shall schedule a Short Beacon frame at intervals given by the dot11ShortBeaconPeriod with the following exception: a Beacon may be scheduled instead of a Short Beacon in a Short Beacon Interval of a TSBTT that coincides with a TBTT. The Timestamp field of the Short Beacon frame shall be set to the 4 least significant octets of the transmitting STA’s TSF timer at the time that the start of the data symbol, containing the first bit of the Timestamp, is transmitted by the PHY plus the transmitting STA’s delays through its local PHY from the MAC-PHY interface to its interface with the WM(#14/0039r2). 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.

A Short Beacon frame scheduled at TSBTT that is not a TBTT may include the elements shown in Table 8-39 (Minimum Set of optional elements). A Short Beacon scheduled at TBTT may include all the elements shown in Table 8-24 (Beacon frame body) plus the Short Beacon Compatibility element and the Short Beacon Interval element. The Short Beacon Compatibility element shall be generated no later than the Timestamp field of the Short Beacon frame that carries the element.(#14/0039r2) A STA can reconstruct the 8 octet TSF timer at the AP by concatenating the 4 octet TSF Completion field in the Short Beacon Compatibility element with the Timestamp field in the Short Beacon as described in 10.1.3.10.3 (TSF timer accuracy with Short Beacon).(#14/0039r2)

**10.1.3.10.2 Generation of ~~Short~~S1G Beacon Frames**

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~~*n*xdot11ShortBeaconPeriod, where ~~n~~*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.