IEEE P802.11
Wireless LANs

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| LB 200 Comment Resolution for Clause 10.2.2.2 |
| Date: 2014-01-01 |
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Abstract

This submission proposes resolutions for comments that impact clause 10.2.2.2 of TGah Draft 1.0 with the following CIDs:

1397, 1399, 1581, 1735, 1736, 2476, 2773, 2524

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** |
| 1397 | 219.22 | 10.2.2.2 | change the name of subclause to non-AP STA power management | as in the comment | Agree with the commenter.  Resolution accounts for the proposed change.Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 1399 | 219.64 | 10.2.2.2 | Currently, the AP cannot refuse a STA to operate in non-TIM mode only if it has setup a Sensor-only BSS. However, it can deny such operation in other types of BSS. Given that non-TIM mode is a PS mode which greatly benefits not only Sensor STAs they should be allowed to operate in such mode every time they request to. | Enable S1G STAs to request/and be granted non-TIM mode at least in mixed mode BSS types for S1G. | Agree with the commenter.  Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 1581 | 220.05 | 10.2.2.2 | AP may indicate STA a listen interval which value is different from that in association request frame.But it is not specified what value STA should use if it receives AP's recommended listen interval. | Clarify. | Agree with the commenter. Resolution clarifies that the STA uses the value recommended by the AP.Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 1735 | 219.62 | 10.2.2.2 | "An AP operating as Sensor-Only BSS": how can an AP operate as a BSS, and where is "Sensor-Only BSS" defined? | Replace "as Sensor-Only BSS" with "as the controller of a BSS whose members are only sensors" both here and on line 63. | Resolution clarifies this aspect by classifying the “S1G AP that indicates support for Sensor type STAs as described in 9.49 (Sensor Only BSS)”.Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 1736 | 219.64 | 10.2.2.2 | What does "confirms the STA whether it allows the STA entering Non-TIM mode" mean? Also, "non-TIM mode" is not defined in 802.11mc, so that needs to be defined in this amendment. | If the idea is that an AP transmits an Association Response frame that contains a confirmation of the STA's association with the AP, then say that directly. And define "non-TIM mode" in this amendment. | Agree with the commenter.Resolution clarifies the negotiation procedure for TIM and Non-TIM mode selection and adds the appropriate definitions.Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 2476 | 219.28 | 10.2.2.2 | "shall transmit [...] without receiving a beacon frame" -- how can the STA avoid receiving a beacon (should be Beacon) frame? | Change to "if it has not received a (Short) Beacon frame" or "even if it has not received a (Short) Beacon frame" or whatever is actually intended | Changed to “without being required to receive a Beacon”Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 2773 | 219.36 | 10.2.2.2 | Text change should be underlined, e.g. "or Short Beacon Frames" | as commented | Agree with the commenter. Note: Missing underlined text for 11ah addition has been spotted in a couple of places already.Revised – TGah editor to make changes shown in 14/0073r0 under the heading for CIDs from 1397 to 2773. |
| 2524 | 219.00 | 10.2.2.2 | AP hibernation functionality will be very useful for scheduled powersaving operation such as scheduled black-out | Add a scheduled hibernation mode of AP for radical power saving | Rejected – An AP power save mode is already defined in D1.0 (see 10.2.2.19 (AP Power Management)) which serves for this purpose. Hence no further changes are needed to the draft. |

**Instructions to TGah Editor: *Change the subclause below as follows and underline the text highlighted in yellow:***

* **Non-AP STA Power Management modes**

***Change line 2 of Table 10-2 as follows:***

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| PS | STA with dot11NonTIMModeActivated set to false listens to selected Beacon frames (based upon the ListenInterval parameter of the MLME-ASSOCIATE.request or MLME-REASSOCIATE.request primitive) and sends PS-Poll frames to the AP if the TIM element in the most recent Beacon frame or Short Beacon frame indicates an individually addressed BU is buffered for that STA. An S1G non-AP STA for which dot11NonTIMModeActivated is false is a TIM STA.STA with dot11NonTIMModeActivated set to true shall transmit at least one PS-Poll or trigger frame to the AP every listen interval without being required to receive a Short Beacon frame (based upon the ListenInterval parameter of the MLME-ASSOCIATE.request or MLME-REASSOCIATE.request primitive). An S1G non-AP STA for which dot11NonTIMModeActivated is true is a non-TIM STA.A non-TIM STA may send PS-Poll frames to an S1G AP regardless of whether individually addressed buffered BUs have been indicated by the S1G AP.The AP shall transmit buffered individually addressed BUs to a PS STA only in response to a PS-Poll from that STA, during the CFP in the case of a CF-Pollable PS STA, or during a scheduled or unscheduled APSD service period for the STA. In PS mode, a STA shall be in the Doze state and shall enter the Awake state to receive selected Beacon or Short Beacon frames, to receive group addressed transmissions following certain received Beacon or Short Beacon frames, to transmit, and to await responses to transmitted PS-Poll frames or (for CF-Pollable STAs) to receive CF transmissions of buffered BUs. |

***Insert the following paragraphs at the end of this sub-clause:***

An S1G STA uses AC\_VO to send PS-Poll frame as the default setting. The S1G AP shall inform the S1G STA of the access category specified in the PS-Poll AC subfield in the Update EDCA Info field in the EDCA Parameter Set element for sending PS-Poll frames at Beacon and Probe Response frames, over-writing the default value.

Upon receiving a PS-Poll, the S1G AP may use RTS/CTS protection scheme to send buffered data until no more data or TXOP limit which comes first. The RTS shall be regarded as the immediate acknowledgement to PS-Poll.

An S1G AP that sets the STA Type Support in a transmitted S1G Capabilities element to 0 or 1, as described in 9.49 (Sensor Only BSS), shall set the dot11NonTIMModeActivated to true and shall set the Non-TIM Support field in the S1G Capabilities element to 1. An S1G AP that sets the STA Type Support in a transmitted S1G Capabilities element to 2, as described in 9.49 (Sensor Only BSS), may set the dot11NonTIMModeActivated to false and the Non-TIM Support field in the S1G Capabilities element to 0 anytime during its operation. An S1G AP that sets the STA Type Support in a transmitted S1G Capabilities element to 2, as described in 9.49 (Sensor Only BSS), may set the dot11NonTIMModeActivated to true and the Non-TIM Support field in the S1G Capabilities element to 1 anytime during its operation.

An S1G non-AP STA shall indicate its PS mode (TIM mode or non-TIM mode), during association, to the AP it intends to associate with. The STA shall set the Non-TIM Support field in the S1G Capabilities element included in the Association Request frame to 1 to request operation in non-TIM mode. Otherwise, it shall set the Non-TIM Support field to 0.

An S1G AP that sets the STA Type Support in the S1G Capabilities element to 2 in the Association Response frame transmitted to a STA may set the Non-TIM Support field in the S1G Capabilities element, included in the Association Response frame, to 1 if the Association Request frame previously sent by the STA had the Non-TIM Support field equal to 1.

The S1G AP may additionally recommend a value of listen interval different from that in Association Request frame based on its buffer management consideration in Association Response frame.

An S1G non-AP STA that has transmitted an Association Request frame with the Non-TIM Support field equal to 1 and that receives an Association Response frame with the Non-TIM Support field in the S1G Capabilities element equal to 1 shall set the dot11NonTIMModeActivated to true. Otherwise, it shall set the dot11NonTIMModeActivated to false. The STA shall operate in the negotiated PS mode during association unless a PS mode switch is negotiated as described in 10.45 (Dynamic AID assignment operation) or a temporary PS mode switch has occurred as described in 9.42.3 (Rescheduling of awake/doze cycle). The STA shall update its Listen Interval parameter to the value of the Listen Interval field of the Association Response frame.