IEEE P802.11
Wireless LANs

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| LB232 S1G related MAC comment resolutions |
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Abstract

This submission proposes resolutions of comments received from TGmd LB232.

(The proposed change is based on TGmd Draft 1.0.)

* CIDs: 1074, 1075, 1082, 1112, 1073, 1261, 1262, 1263 (8 CIDs)

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 1074 | Robert Stacey | 10.47 | 1902 | 42 | The statement "An S1G STA with dot11PageSlicingImplemented equal to true shall follow the page slicing rules as described in this subclause." is unnecessary. It is not clear what the "page slicing rules" are and, at best, it is supurflous: the collection of normative statments that apply to the "S1G STA with dot11PageSlicingImplement equal to true" is sufficient. | Delete the statement. | Revised- Agree in principle. Delete the cited sentence. And, add some missing constaint about the MIB variable. TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Change 6th paragraph in subclause 10.47 as the following:*** ~~An S1G STA with dot11PageSlicingImplemented equal to true shall follow the page slicing rules as described in this subclause.~~ An AP that has dot11PageSlicingActivated equal to true shall not include the bit in the partial virtual bitmap that corresponds to the AID of the S1G STA with dot11PageSlicingImplemented equal to false within a TIM element that has a value for the Page Slice Number field that is in the range of 0 to 30. An AP that has dot11PageSlicingActivated equal to false shall not transmit a TIM element that has a value for the Page Slice Number field that is in the range of 0 to 30.***TGmd Editor: Change 12th paragraph in subclause 10.47 as the following:***An AP with dot11PageSlicingActivated equal to true may include more than one TIM representing different page slices within a Beacon frame. An AP with dot11PageSlicingActivated equal to true shall not transmit the Page Slice element in any frame other than a Beacon frame that has DTIM count equal to 0. |
| 1075 | Robert Stacey | 10.47 | 1902 | 53 | An AP does not necessarily have access to a non-AP STAs MIB so how can the AP determe if this condition is met? The AP can only infer this by looking at the S1G Capabilities elements of the associated non-AP STAs. Make a more direct statement that references the S1G Capabiltiies element. | "Has at least one associated non-AP STA from which it has received an S1G Capabilities element with the Page Slicing Support field equal to 0" | Revised- Agree in principle.TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Change 7th paragraph in subclause 10.47 as the following:*** If an AP meets the following conditions:— Its dot11PageSlicingActivated is true.— Has ~~any STA(s) associated with it that has a value of false for dot11PageSlicingImplemented~~ at least one associated non-AP STA from which it has received an S1G Capabilities element with the Page Slicing Support field equal to 0 within a page. |
| 1082 | Robert Stacey | 10.2.3.2 | 1568 | 32 | The applicability of "by default" is not clear | "An S1G STA that is a sensor STA shall transmit ... using AC\_BE unless <something condition exists that would change this>" | Revised- Agree in principle.TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Change subclause 10.2.3.2 as the following:*** ~~By default, an S1G STA that is a non-sensor STA shall transmit PS-Poll frames, PS-Poll+BDT frames and NDP PS-Poll frames using access category AC\_VO. By default, an S1G STA that is a sensor STA shall transmit PS-Poll frames, PS-Poll+BDT frames and NDP PS-Poll frames using access category AC\_BE. After reception of an EDCA Parameter Set element from the AP with which it is associated~~ If an S1G STA receives an EDCA Parameter Set element from its associated AP and its STA type is indicated in the STA Type subfield in the received EDCA Parameter Set element, an S1G STA shall transmit PS-Poll frames, PS-Poll+BDT frames and NDP PS-Poll frames using the access category indicated in the PS-Poll ACI subfield~~,~~. Otherwise, an S1G STA shall transmit PS-Poll frames, PS-Poll+BDT frames and NDP PS-Poll frames either using access category AC\_VO when the S1G STA is a non-sensor STA or using access category AC\_BE when the S1G STA is a sensor STA (see 10.57 (S1G flow control(11ah))).  |
| 1112 | Robert Stacey | 10.35.7 | 1791 | 30 | There is no such thing as an S1G NDP Announcement frame. And there is no need to have two different names for the same thing. | Replace all occurances of "S1G NDP Announcement frame" with "VHT NDP Announcement frame" | Revised- Agree in principle.TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Remove the following sentence at Page 1760 Line 3 (TGmd D1.0 10.32.1 (Introduction)).*** ~~— “VHT NDP Announcement frame” is replaced by “S1G NDP Announcement frame”~~***TGmd Editor: Replace all occurances of "S1G NDP Announcement frame" with "VHT NDP Announcement frame carried in an S1G PPDU"*** |
| 1073 | Robert Stacey | 10.47 | 1901 | 37 | The statement "an S1G STA shall set dot11PageSlicingImplemented to true if it supports page slicing" is not a testable requirement since it is not clear what "supports page slicing" entails. Also "S1G STA with dot11PageSlicingImplemented equal to true" (as used in this subclause) is a cumbersome STA descriptor. | Define something called a "page slicing S1G STA" as an S1G STA that declares a certain capability. It is more direct to define the STA type as one that sets its capability element a certain way rather than as one that sets a MIB object a certain way since the MIB is not required and rarely implemented. A statement such as "a page slicing S1G STA is an S1G STA that sets the Page Slicing Support field to 1 in the S1G Capabilities elements it transmits." would do the trick. The MIB object setting can be one of the requirements on such a beast: "A page slicing S1G STA shall set dot11PageSlicingImplemented to true." And, now that we know how to identify the beast (take a wireless sniffer and look for S1G Capability elements with the Page Slicing Support field set to 1) we can apply testable requirements to the breast, e.g., "A page slicing S1G STA shall process all received TIM elements..." (P1902L30). | Revised- Agree in principle.TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Change 1st paragraph in subclause 10.47 as the following:*** ~~A non-S1G STA shall not set dot11PageSlicingImplemented to true while an S1G STA shall set dot11PageSlicingImplemented to true if it supports page slicing.~~An S1G STA shall support the page slicing mechanism defined in this subclause if dot11PageSlicingImplemented is true. A non-S1G STA shall set dot11PageSlicingImplemented is false.***TGmd Editor: Move 5th paragraph in subclause 10.47 to the beginning of the subclause.***  |
| 1261 | Xiaofei Wang | 10.3.2.10 | 1593 | 32 | There seems to be some problem with the implicit ACK procedure since the S1G relay has changed from 2 hop to multi-hop. Currently the implicit ack for a UL frame described here only works if the relay AP is directly associated with the rootAP, i.e. relaying only 2 hops. For any STA that is associated with a Relay AP that is not directly associated with the rootAP, the STA does not know the identity of the next hop AP, and therefore the implicit ACK procedure won't work, even though it may be set up. | Replace the RootAP BSSID in the Relay element with the address of the next hop AP, i.e., the parent AP to which the relay is associated. Also change the text here from "root AP" to "next hop AP" at two places. | Revised- Agree in principle.Because S1G relay can support multi hop, the Root AP BSSID shall be generalized as suggested by the commenter. TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Replace “RootAP BSSID” in Figure 9-684 (S1G Relay element format) and Table 9-294 (Hierarchy Identifier subfield) with “Next Hop AP BSSID”*** ***TGmd Editor: Change the following in Page 1322 Line 37 (9.4.2.203 (S1G Relay element))***The ~~Root~~Next Hop AP BSSID field indicates the BSSID of the ~~root~~ next hop AP. The RootAP BSSID field is present if the Hierarchy Identifier subfield is set to a nonzero value. Otherwise the ~~Root~~Next Hop AP BSSID field is not present.***TGmd Editor: Change the following in Page 1593 Line 33 (10.3.2.10 (Acknowledgment procedure))***— The RXVECTOR parameter PARTIAL\_AID is either equal to the PARTIAL\_AID that corresponds to the BSSID of the root AP or the PARTIAL\_AID is equal to 0 and the PPDU contains an RTS frame with RA equal to the BSSID of the ~~root~~next hop AP.***TGmd Editor: Change the following in Page 1925 Line 50 (10.50.5.3 (Implicit Ack procedure))***— The STA is a non-AP STA that is associated to the S1G relay AP and the S1G relay AP has transmitted to the STA an S1G Relay element with the ~~Root~~Next Hop AP BSSID field containing the BSSID of the next hop AP to which the S1G relay STA of the S1G relay is associated. |
| 1262 | Xiaofei Wang | 10.3.2.10 | 1593 | 32 | It is not very clear how the logics for "and" and "or" in this sentence; does "and" condition apply to both conditions connected by the "or" or only apply to the first or the second condition? | Please clarify | Revised- Agree in principle.TGmd editor makes changes as shown in the as specified in 11-18/1300r0. |
| ***TGmd Editor: Change the following in Page 1593 Line 33 (10.3.2.10 (Acknowledgment procedure))***— The RXVECTOR parameter PARTIAL\_AID is ~~either~~ equal to the PARTIAL\_AID that corresponds to the BSSID of the root AP or the RXVECTOR parameter PARTIAL\_AID is equal to 0 and the PPDU contains an RTS frame with RA equal to the BSSID of the root AP.  |
| 1263 | Xiaofei Wang | 10.50.2 | 1921 | 25 | The reachable address update procedure may create an error in the following situation:1. STA1 who is originally associated with relay AP1, moves to relay AP2, under the same root AP, without perfroming disassociation with relay AP12. relay AP2 performs reachable address update to the root AP based on condition 1) in L233. Before the max idle period expiry of STA1 in relay AP1, another STA2 associates with relay AP14. relay AP1 sends reachable address update frame containing "current list" STA1 and STA2 to root AP based on condition 1) in L23, overwriting the correct forwarding entry for STA1 in root AP5. Later traffic to STA1 is forwarded to relay AP1, causing relay AP1 disassociation of STA1, which triggers another reachable address update frame sent to root AP, based on condition 2) in L23. This completely removes STA1 from root AP's "current list" of reachbale addresses | A potential solution may be:An S1G relay STA shall send a Reachable Address Update frame that contains the modifications of reachable addresses to the AP to which it is associated when one of the following conditions occurs:1)A new non-AP STA associates with the S1G relay AP of the relay2)A non-AP STA is disassociated or deauthenticated from the S1G relay AP of the S1G relay3)A Reachable Address Update frame is received at the S1G relay AP of the S1G relayFor condition 1) and 2), the reachable address update frame only contains the newly associated/disassocated STA addressesFor condition 3), the relay AP ignores/removes an address from the reachable address element with add/remove subfield set to 0,  from the received reachable address update frame, if the current forwarding relay for the address is not the same as the the STA sending the reachable address update frame to the relay AP | Rejected- When the STA does not perform the disasociation procedure, the reachable address update procedure may have some error. But, such errors can be resolved by an implementation algorithm but this is out of the scope. |