IEEE P802.11
Wireless LANs

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| LB 200 MAC Comment Resolution on Active Scanning (Clause 10.1.4.1 and 10.1.4.3) |
| Date: 2014-04-07 |
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Abstract

This submission proposes comment resolutions on Active Scanning (Clause 10.1.4.1 and 10.1.4.3).

* CIDs: 1278, 2478, 1279, 1394, 1395, 2053, 2786 (7 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** |
| --- | --- | --- | --- | --- | --- |
| 1278 | 215 | 10.1.4.1 | "requesting STA for indicating which" -- grammar | "requesting STA to indicate which" | Accepted- TGah Editor to make changes shown in 14/0521 |
| 2478 | 215 | 10.1.4.3.1 | "If the responding STA is an S1G STA" -- how can a device responding in the S1G band be anything other than a S1G STA? | Clarify | Revised-Since only S1G STAs include Probe Response Option element in the Probe Request, if a STA receives a probe request frame with a Probe Response option, it means that the responding STA is in the S1G band and it is an S1G STA. So it is better to omit “If the responding STA is an S1G STA” from the sentenceTGah Editor to make changes shown in 14/0521 |
| 1279 | 215 | 10.1.4.3.3 | " shall respond with Short Probe Response frame" - grammar | " shall respond with a Short Probe Response frame" | Accepted- TGah Editor to make changes shown in 14/0521 |
| 1394 | 215 | 10.1.4.3.3 | In the first paragraph it is specified that the S1G STA that supports Short Probe Response shall transmit a Short Probe Response. However, how to indicate the support for these frames is missing. Similarly specifies that "...the responding STA shall include the corresponding information to the Short Probe Response frame if the S1G STA supports it. It is not very clear to what the "supports it" points to. | Replace "and supports Short Probe Response" with "with dot11ShortProbeResponseImplemented set to true". Add some clarification to the first sentence of the paragraph in regards to the optionality of responding with a Short Probe Response. For example, add an otherwise sentece after this as follows: "otherwise, Responding STA shall use Probe Response" | Revised-Agree with the commenter.Text approved by11-14-0211r3 also resolves this CID.TGah Editor to make changes shown in 14/0521(copied from 11-14-0211r3) |
| 1395 | 216 | 10.1.4.3.3a | modify the line "A Relay AP also may not respond with a Probe Response if the QoS criteria on the relay path specified in the Relay Discovery element cannot be satisfied." | Replace it with: " A Relay AP that does not satisfy the QoS cirteria may transmit a Probe Response that includes the Relay Discovery element in probe response" | Rejected-One of the approach of the Relay Discovery is to make the Relay AP omit the Probe Response to the requesting STA if the QoS Criteria specified in the Probe Request by the requesting STA cannot be satisfied by the Relay AP. So, “A Relay AP may not respond with a Probe Response if the QoS criteria cannot be satisfied by the Relay” is correct. |
| 2053 | 216 | 10.1.4.3.3a | short probe response can also include the same relay related information such as Relay Discovery element as Probe Response and it can be also used for relay discovery | Change "Probe Response" to "(short) Probe Response" in the clause | Accepted-TGah Editor to make changes shown in 14/0521 |
| 2786 | 216 | 10.1.4.3.3a | "This element provides information on the single hop direct path, " means no clear contents in Relay Discovery element (8.4.2.170q). | Delete. Otherwise state clearly. | Accepted-There is no clear content in Relay Discovery element regarding single hop direct path. TGah Editor to make changes shown in 14/0521 |

**Discussion:**

**CID 1278, 2478, 1279, 1394, 1395, 2053, 2786**

See the resolution column in the table

**Proposed Remedy:**

***Instructions to TGah Editor: Change the subclause 10.1.4.1 as follows (Line 56 Page 251)***

**10.1.4 Acquiring synchronization, scanning**

**10.1.4.1 General**

……..

Probe Response Option element defined in 8.4.2.170t (Probe Response Option element) is used by the requesting STA ~~for~~to indicate~~ing~~ which optional information is requested to be included in the Short Probe Response frame that is transmitted by the responding STAs.

***Instructions to TGah Editor: Change the subclause 10.1.4.3.1 as follows (Line 14 Page 252)***

**10.1.4.3 Active scanning**

**10.1.4.3.1 Introduction**

Active scanning involves the generation of Probe request frames and the subsequent processing of received probe responses. Probe Response frames. An S1G STA may include Probe Response Option element in the Probe Request frame to indicate which optional information is requested to be included in the Short Probe Response frame. If ~~the responding STA is an S1G STA and if it~~ a STA receives a Probe Request frame with Probe Response Option element, then Short Probe Response frame may be transmitted by the responding STA as a probe response. Otherwise, a Probe Response frame shall be transmitted by the responding STA as a probe response. The details of the active scanning procedures are as specified in the following subclauses. Upon reception of a Short Probe Response frame that includes a Short Beacon Compatibility element the S1G STA that included the Probe Response Option element in a previously transmitted Probe Request frame or that set the Requested Probe Response Type to 0 in a previously transmitted NDP Probe Request frame, may update its TSF timer using the same TSF timer update procedure described in 10.1.3.10.3 (TSF timer accuracy with Short Beacon) for Short Beacon frames.(#14/0039r2)

***Instructions to TGah Editor: Change the subclause 10.1.4.3.3 as follows***

**10.1.4.3.3 Sending a probe response**

***Insert the following paragraph after the 4th paragraph of the sub-clause 10.1.4.3.3(#868):***

If the requesting STA is an S1G STA and a Probe Response Option element (see Clause 8.4.2.170t (Probe Response Option element)) is included in the Probe Request frame, and if the responding STA is an S1G STA ~~and supports~~ with dot11ShortProbeResponseOptionImplemented equal to true, then the responding S1G STA shall respond with a Short Probe Response frame. Otherwise, the S1G STA that responds to a Probe Request shall transmit a Probe Response frame. If a bit in a Probe Response Option bitmap in the Probe Response Option element is set to 1, it means that corresponding optional information is requested by the requesting S1G STA, and the responding S1G STA with dot11ShortProbeResponseOptionImplemented equal to true shall include the corresponding information in the Short Probe Response frame ~~if the S1G STA~~ ~~supports it~~. If the Request full SSID bit in the Probe Response Option element is set to 1, then the responding S1G STA shall include its full SSID in the Short Probe Response frame. If it is set to 0, then it shall include its compressed SSID instead of the full SSID. In S1G BSS, the (Short) Probe Response frame shall have the same CH\_BANDWIDTH as the preceding Probe Request frame.(#868) An S1G STA with dot11ShortProbeResponseOptionImplemented equal to true, scheduled to transmit a Short Probe Response frame that includes the Short Beacon Compatibility element shall generate this element no later than the Timestamp field of the Short Probe Response frame that carries the element.(#14/0039r2)

***Instructions to TGah Editor: Change the subclause 10.1.4.3.3a as follows***

**10.1.4.3.3a Active scanning for relay discovery**

S1G STAs that are performing an active scan to discover an operating APs, or Relay APs may include the Relay Discovery element (see 8.4.2.170q (Relay Discovery element)) in the Probe Request frame. This element provides information on the ~~single-hop direct path, and~~ QoS criteria on the relay path.

The active scanning procedure for Relay AP is similar to the Active scanning procedure outlined in 10.1.4.3.3.

A Relay AP receiving Probe Request frames may respond with a (Short) Probe Response if the criteria outlined in 10.1.4.3.2 are met. A Relay AP also may not respond with a (Short) Probe Response if the QoS criteria on the relay path specified in the Relay Discovery element cannot be satisfied.

A Relay AP sending (Short) Probe Response frames may include the Relay Discovery element to carry link budget information between the Relay AP and root AP.

An S1G STA may use the information received from different Relay APs to determine a suitable Relay AP for association. The Relay AP selection is made by the S1G STA, and the specific selection procedure is up to the implementation.