IEEE P802.11
Wireless LANs

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| LB276 CR for CIDs on Sensing capabilities exchange |
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Abstract

This submission proposes resolutions to the following LB276 CIDs.

* 3044, 3045, 3047, 3205, 3339, 3391, 3479.

The text used as reference is 802.11bf D2.1.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revised according to offline discussions on CID 3045, 3047 and 3339.

**Comments:**

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 3044 | 11.55.1.2 | 135.18 | It is not clear what the purpose of the Sensing field in the Extended Capabilities element serves. The presence of the Sensing Capabilities element seems to be necessary to eable sensing anyway and the presence of this element alone could serve as an indication for sensing support. | Remove the Sensing field from the Extended Capabilities element. Change the satement here to "A STA indicates that it is a sensing STA by including the Sensing Capabilities element in Probe Response, (Re)Associaton Response, Association Request and Measurement Query frames." | **Rejected.**The Sensing Capabilities element contains fields that are used to advertise **optional** sensing capabilities and sensing operation information. But this element is not contained in Beacon frame.A sensing AP can use the Sensing field =1 in the Extended Capabilities element in the Beacon frame to declare it supports WLAN sensing. Then, sensing STA can request AP’s detailed Sensing Capabilities via Probe req./resp. or Association req./resp., etc. |
| 3045 | 11.55.1.3 | 136.63 | A STA sending an Association Request frame is not (yet) an associated non-AP STA. Also, in the intro sentence, "to enable the exchange of sensing capabilities" is obtuse; the presence of the Sensing Capabilities element doesn't \*enable" the exchange of capabilites, its purpose is the exchange of capabilities. Also, there is only an exchange when there is a request/response and both sides include the element. | Change the sentence to "A sensing STA indicates its sensing capabilities by including the Sensing Capabilities element in a Prope Response, (Re)Association Response, Association Request or Measurement Query frame." | **Revised.**Agree with the commenter. The mentioned text is revised.TGbf Editor make changes as in doc.: 11-23/1487r1. |
| 3047 | 11.55.1.3 | 137.06 | This requirement is a recipe for disaster. What defines a neighboring AP? A beacon that the AP happens to detect? I don't think we should be relaying information from other APs which are not in the same management domain and there certainly should not be a requirement to do so. For one thing there are security implications: trust in an authenticated AP should not extend to unauthenticated APs. | Remove this requirement. | **Revised.**Agree in principle with the commenter. Neighbor Report element may be carried in (Re)association Response, Authentication or Neighbor Report Response frame. The Sensing field in Neighbor Report element is to indicate the AP identified by this BSSID is a sensing STA.The purpose of the neighbor report is to enable the STA to optimize aspects of neighbor service set transition and ESS operation, rather than reducing the time for capabilities exchange.Therefore, this paragraph is removed to fix the issue mentioned by this cid.TGbf Editor make changes as in doc.: 11-23/1487r1. |
| 3391 | 11.55.1.3 | 137.06 | Should the requirement of "an AP shall includeone or more of its neighboring APs' sensing capabilities" be qualified to require this of only Sensing capable APs? | As suggested. | **Revised.**Please refer to the resolution to cid 3047, this paragraph is removed.TGbf Editor make changes as in doc.: 11-23/1487r1. |
| 3479 | 11.55.1.3 | 137.06 | In REVme, only Reduced Neighbor Report element is optionally included in Beacon and Probe Response, which do not contain Neighbor Report element. For 11bf, Beacon and Probe Response shall carry Neighor Report element. 11bf should align with REVme. | As in comment. | **Revised.**Please refer to the resolution to cid 3047, this paragraph is removed.TGbf Editor make changes as in doc.: 11-23/1487r1. |
| 3205 | 11.55.1.4.1 | 139.09 | Add the sentence "within the aSensingFrameExchangeExpiry timeout period" of this sentence "the sensing initiator should send a Sensing Measurement Termination frame with the Measurement Session ID carried in the received Sensing Measurement Response frame" to aviod any ambiguity. | as in comment | **Rejected.**In this case, the sensing initiator send a Sensing Measurement Termination frame **after** *aSensingFrameExchangeExpiry* timeout period rather than "**within** the *aSensingFrameExchangeExpiry* timeout period".In addition, the two sub sentences are separated by a comma, there is no ambiguity issue. |
| 3339 | 11.55.1.4.1 | 139.17 | The text "The same Measurement Session ID may be assigned to different sensing responders" is appropiate for a TB exchange, however assigning the same Measurement Session ID could be problematic for reporting in a non-TB exchange. For example, in the Sensing Measurement Report Container -> Segmentation Control field, the application relies on the Measurement Session ID to identify the measurement since the Sensing Transmitter/Receiver STA IDs are reserved for the non-TB case. If a STA were to estlabish an Unassociated Measurement Session (non-TB) with multiple APs and assigned the same Measurement Session ID to each responder, the application would require more information than what is available in the Sensing Measurement Report Container to identify the measurements. As a result, suggest adding a constraint such that the same Measurement Session ID may ONLY be assigned to different responders for the TB exchange. | Change "The same Measurement Session ID may be assigned to different sensing responders" to "The same Measurement Session ID may be assigned to different sensing responders for TB sensing mesurement exchanges, and shall be unique for all non-TB sensing measurement exchanges." | **Rejected.**The sensing measurement reports in the non-TB sensing measurement exchange from multiple sensing responders using the same Measurement Session ID corresponding to a single application can be identified by the sensing initiator via an implementation specific MLME interface, i.e., the PeerSTAAddress along with the SensingMeasurementReportContainer in MLME-SENSREPORTRQ primitives.This issue was solved by doc.: 11-23/1648r1. Therefore, there is no need to make any changes. |

**11.55.1.3 Sensing capabilities exchange**

***TGbf Editor: Please revise clause 11.55.1.3 (Sensing capabilities exchange) as below.***

To indicate the sensing capabilities, a sensing STA shall include the Sensing Capabilities element (see 9.4.2.321 (Sensing Capabilities element)) in a Probe Response frame, (Re)Association Response frame, (Re)Association Request frame or Measurement Query frame and may include the Sensing Capabilities element (see 9.4.2.321 (Sensing Capabilities element)) in a Probe Request frame. (#3045)

A non-AP STA may receive an AP’s sensing capabilities (see 9.4.2.26 (Extended Capabilities element) and 9.4.2.321 (Sensing Capabilities element)) as part of an active or passive scanning procedure (see 11.1.4 (Acquiring synchronization, scanning)).

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If a non-AP STA is not associated with an AP and intends to establish a sensing measurement session that is initiated by this AP(#3091), it shall transmit a Sensing Measurement Query frame to the AP carrying its sensing capabilities. If the AP does not accept the unassociated non-AP STA as a sensing responder, the AP should respond to the received Sensing Measurement Query frame with a Sensing Measurement Termination frame with the Terminate All TB Measurement Sessions field set to 1.

**SP: Move to approve resolutions to CIDs 3044, 3045, 3047, 3205, 3339, 3391, 3479,**

**as specified in doc.: 11-23/1487r1 and incorporate the text changes into the latest TGbf draft.**