**IEEE P802.11
Wireless LANs**

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| **802.11****Active Scan Figure CID** |
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**Abstract**

This document provides comment resolution for REVmd letter ballot CID 2691.

R0: Initial draft

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| 2691 | 11.1.4.3.2 | 2128 | 43 | Figure 11-4 shows "active scanning" with a probe request addressed to an individual address (i.e. where probe request is ACK'ed). However, as indicated in steps (d) and (e), in active scan the probe request(s) are sent to the broadcast destination address. Therefore this figure is very confusing | Modify Figure 11-4 to show an example where the probe request is addressed to broadcast destination address and BSSID is set to a non-wildcard BSSID. (This then correctly contrasts with Figure 11-5 where BSSID field is set to wildcard) |

**Discussion:** Excerpt of the active scanning procedure in 11.1.4.3.2 where Probe Request frame is transmitted, is copied below. This text explicitly indicates that the Probe Request frame is sent to the broadcast address. These are the only references in this clause to transmission of a Probe Request frame (other than Figures 11-4 and 11-5 themselves). Hence, as far as this clause is concerned, a figure that refers to transmission of Probe Request frames to an individual address is not appropriate and confusing.

* Perform the basic access procedure as defined in 10.3.4.2 (Basic access).
* Send a probe request to the broadcast destination address. The probe request is sent with the SSID and BSSID from the received MLME-SCAN.request primitive. When the SSID List is present in the MLME-SCAN.request primitive, send one or more Probe Request frames, each with an SSID indicated in the SSID List and the BSSID from the MLME-SCAN.request primitive(11ai).
* When the SSID List is present in the invocation of the MLME-SCAN.request primitive, send zero or more Probe Request frames, to the broadcast destination address. Each probe request is sent with an SSID indicated in the SSID List and the BSSID from the MLME-SCAN.request primitive. The basic access procedure (10.3.4.2 (Basic access)) is performed prior to each probe request transmission.

As shown in text above, the SSID and BSSID (A3 field) in the Probe Request frame are the primary fields that determine the responder(s) to the Probe Request in active scan [note: in certain cases there are also other filtering criteria, e.g. FILS Request parameters]. Figure 11-5 shows a case with multiple responders, implying A3 of the Probe Request frame is set to wildcard address. Currently there is no figure showing the case where the Probe Request frame is sent to the broadcast destination address with a non-wildcard BSSID field, and therefore there is typically a single responder.

Note there are other clauses where transmission of an individually addressed Probe Request frame is specified. In these cases, the presence of the targeted AP is already assumed , e.g. 11.1.4.3.10 (FILS preferred AP), 11.3.4.3 (obtaining peer’s security policy in IBSS), 11.5.2.2 (Block ACK agreement in IBSS), 11.29.2 (Peer service discovery). These exchanges do not appear materially different to any other acknowledged request/response type exchanges, and therefore do not seem to justify the need for a specific timing diagram. In any case, there are no other references in the standard to either Figure 11-4 or 11-5.

**Proposed Resolution:** Accept, making the following modifications to Figure 11-4 and 11-5:

Figure 11-4

* Change title to “Active scanning by a non-DMG STA with a probe request addressed to a non-wildcard BSSID” (and update reference in the text accordingly)
* Under “PROBE” (in Probe Request box), add “DA = broadcast” and “BSSID = non-wildcard”
* Remove “ACK” and “G1”, and shift start of G2 to align with end of Probe Request (same as Figure 11-5)

Figure 11-5

* Under “PROBE” (in Probe Request box), add “DA = broadcast” and “BSSID = wildcard”