IEEE P802.11
Wireless LANs

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| LB187 (D2.0) resolution for probe delay |
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Abstract

This document proposes a resolution for CID 4843 on P802.11ac/D2.0 (LB187), regarding the so-called probe delay.

## Revision History

r0: Initial revision.

r1: Updated following presentation in Atlanta to recommend a minimum probe delay for VHT STAs.

## Comments

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| 4843 | Mark RISON | 10.2.1.4a (135.25) | Why is a special probe delay needed? | Replace "dot11VHTPSProbeDelay" with ProbeDelay and delete dot11VHTPSProbeDelay from Annex C |

## Discussion

The original ProbeDelay is an MLME SAP parameter whose purpose is threefold:

* When scanning, it is the “Delay (in microseconds) to be used prior to transmitting a Probe frame during active scanning.” – see 10.1.4.3.3
* When starting or joining a BSS, it is the “Delay (in microseconds) to be used […] prior to transmitting when changing from Doze to Awake, if no frame sequence is detected by which the NAV can be set.” – see 10.2.1.2
* When moving channels in a mesh BSS, it is used similarly – see 10.9.8.4.3 (note this is not mentioned in the MLME SAP subclause for some reason)

Since then three same-purpose MIB variables have been introduced:

* dot11RMMeasurementProbeDelay, which is the “value of ProbeDelay to be used when making a beacon type measurement with measurement mode active when dot11RMActiveBeaconMeasurementActivated is true.” – see 10.11.9.1 and C.3
* dot11TDLSProbeDelay, which is the “amount of time in units of microseconds the STA waits before transmitting on a new channel, in the absence of traffic on the channel that causes a CCA state to be created.” – see 10.22.6 and C.3
* dot11VHTPSProbeDelay, which is the “minimum amount of time in units of microseconds the STA waits before accessing the medium after transitioning from the Doze state to Awake state while operating in TXOP power save mode.” – see 10.2.1.4a and C.3

These are all aberrations, as their functionality is identical to that already defined for the ProbeDelay MLME SAP parameter, namely to set how long the STA waits before transmitting if it can’t synchronise to the channel’s NAV. There is no reason for the ProbeDelay to be different in the various contexts (and even if there were, there is no reason for the ProbeDelay to be provided via different mechanisms).

The first two need to be fixed in TGmc.

The last should be fixed now in TGac. It has been suggested, however, that it is desirable that the probe delay be at least 1000 us for VHT STAs.

## Proposed changes

The changes are relative to D2.1. The changes are shown using Word change tracking. Select “Final Showing Markup” or “Final” as appropriate. Editorial instructions are shown using bold italics. Any Word comments should be ignored when merging the proposed changes in.

***Change the cell for the Description of the ProbeDelay in subclause 6.3.4.2.2 as follows:***

Delay (in microseconds) to be used prior

to transmitting when changing from Doze

to Awake, if no frame sequence is

detected by which the NAV can be set.

This should be at least 1000 µs when joining

a VHT BSS.

***Change the cell for the Description of the ProbeDelay in subclause 6.3.11.2.2 as follows:***

Delay (in microseconds) to be used, while

the STA is a member of this BSS, prior to

transmitting when changing from Doze to

Awake, if no frame sequence is detected by

which the NAV can be set.

This should be at least 1000 µs when starting

a VHT BSS.

***Change subclause 10.2.1.4a as follows:***

* a period equal to the ProbeDelay has transpired.

***Delete*** dot11VHTPSProbeDelay ***from subclause C.3.***

## Proposed resolution

REVISED. See Proposed changes in 12/674r1.