IEEE P802.11
Wireless LANs

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| ED CCA for Clauses 16, 17  |
| Date: 2014-10 |
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Abstract

This document contains proposed changes to satisfy CIDs 3116, 3121, 3124

**CID 166**

Background

There have been several CIDs on the subject of making support of Clause 16 and 17 by clause 19 devices, optional. This proposal does not affect the status quo.

However, a point to note is that if an 11g network overlapped a mix 11b/g, then the co-existence should be carried out by ED-CCA. The standard allows an 11b STA to just use one of three CCA schemes one of which is ED-CCA (the others are CS and CS with ED threshold).

 It is not clear how many 11b devices actually implement ED-CCA or solely use 11b preamble detect. However, because many (if not all) 11b devices use just CS, 11g OFDM transmissions must use protection mechanism that is usually a RST/CTS or CTS-to-self. Mandating energy detect CCA for 11b devices would mean that the protection for 11g/11b devices is then mutual. This proposal could not affect present 11b devices but would affect new 11b implementations.

Any new 11b device could instantly improve the situation for interoperability by simply implementing ED-CCA as per the standard. **This proposal mandates CCA Mode 1 (Energy Detect) for Clause 16 and 17 devices**. (Clauses 16.4.6.5 and 17.4.8.5)

**Present text**

**16.4.6.5 CCA**

The DSSS PHY shall provide the capability to perform CCA according to at least one of the following three methods:

— *CCA Mode 1:* Energy above threshold. CCA shall report a busy medium upon detection of any

energy above the ED threshold.

— *CCA Mode 2:* CS only. CCA shall report a busy medium only upon detection of a DSSS signal. This signal may be above or below the ED threshold.

— *CCA Mode 3:* CS with energy above threshold. CCA shall report a busy medium upon detection of a DSSS signal with energy above the ED threshold.

**Proposed Changes**

16.4.6.5 CCA

Page 2174 Line 63

Delete

“The DSSS PHY shall provide the capability to perform CCA according to at least one of the following three methods:”

Insert

“The DSSS PHY shall provide the capability to perform CCA according to CCA Mode 1 and may provide the capability to perform CCA according to CCA Mode 2 or CCA mode 3: “

**Present Text**

**17.3.8.5 CCA**

The high rate PHY shall provide the capability to perform CCA according to at least one of the following three methods:

— CCA Mode 1: Energy above threshold. CCA shall report a busy medium upon detecting any energy above the ED threshold.

— CCA Mode 4: CS with timer. CCA shall start a timer whose duration is 3.65 ms and report a busy medium only upon the detection of a high rate PHY signal. CCA shall report an IDLE medium after the timer expires and no high rate PHY signal is detected. The 3.65 ms timeout is the duration of the

longest possible 5.5 Mb/s PSDU.

— CCA Mode 5: A combination of CS and energy above threshold. CCA shall report busy at least

while a high rate PPDU with energy above the ED threshold is being received at the antenna

**Proposed Changes**

**17.3.8.5 CCA**

Page 2206 Line 4

Delete

“The high rate PHY shall provide the capability to perform CCA according to at least one of the following three methods:”

Insert

“The high rate PHY shall provide the capability to perform CCA according to CCA Mode 1 and may provide the capability to perform CCA according to CCA Mode 4 or CCA mode 5:”