Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: CSMA and CCA

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Re: IEEE Std 802.15.4REVb-DF1

Abstract: CCA and CSMA's stormy relationship

Purpose: Education

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CSMA/CA algorithm

1 of 6 CCA methods used here.
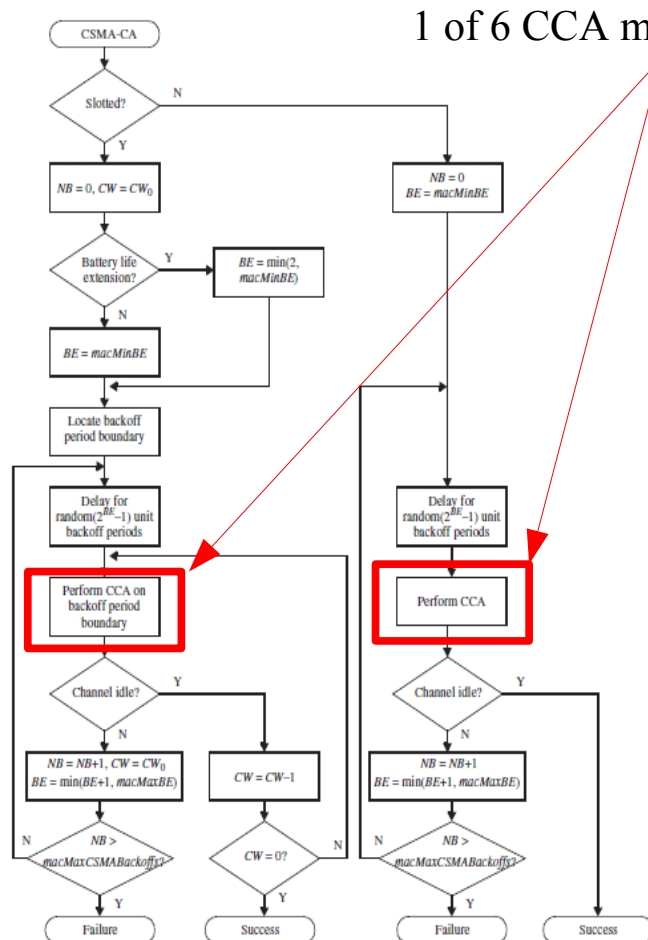
The following PHYs specify any method in 9.2.7:
O-QPSK, BPSK, ASK, CSS, HRP UWB, GFSK, MR-FSK, SUN OFDM, SUN O-QPSK (with modified aCCATime), TVWS FSK, RCC LMR, RCC BPSK (references Clause 12.)

The following PHYs have not defined the acceptable methods:
MSK, LRP UWB, LECIM DSSS, LECIM FSK, TVWS OFDM, TVWS NB-OFDM

Requirements for CSMA/CA

- Common backoff slot time
  - Backoff slot >= aCCATime + aTurnaroundTime
  - Essentially all PHYs have selected "="
- The algorithm is designed to allow a device to sense presence on the channel, turn around and begin transmitting
- The slot time makes it possible for the other devices to hear the transmitting device before they begin to transmit