IEEE P802.11  
Wireless LANs

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| Example Code for Deterministic Backoff | | | | |
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Abstract

This document specifies example Matlab code for core Deterministic Backoff routines at a contending node (STA or AP). This code itself is not executable, but it provides routines which need to be inserted at the cited locations in an 802.11 EDCA implementation.

**% Example Matlab code for Deterministic Backoff**

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% October 23, 2017

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% This code itself is not executable, but it provides routines which need to be inserted at the cited locations in

% an 802.11 EDCA implementation.

**% 1. Initialization**

retrycount = 0; % deterministic backoff retry count, separate from src/lrc/ssrc/slrc/qsrc/qlrc/etc.

IPT = 0; % the number of interruptions during the current backoff (interruptions per transmission - IPT)

**% 2. Collision**

retrycount = retrycount + 1; % increment the retry count

if mod( retrycount, 7 ) < 2 % if less than 2 consecutive retries occurred

backoff = 10 + IPT; % set a deterministic backoff

IPT = 0; % reset the interruption count

else

backoff = randi(7) - 1; % else, set a random backoff between 0 and 6 slots (IPT is untouched)

end

**% 3. Success**

retrycount = 0; % reset the retry count

backoff = 10 + IPT; % set a deterministic backoff

IPT = 0; % reset the interruption count

**% 4. At each CCA busy event during a backoff (e.g. when the CCA goes from idle to busy and the backoff is > 0)**

if ccaidletime >= aifstime % if the idle time leading up to this cca busy event was at least aifs

if mod( retrycount, 7 ) < 2 % if less than 2 consecutive retries occurred, so deterministic backoff

IPT = IPT + 1; % increment the number of interruptions

end

end