

**IEEE P802.15**  
**Wireless Personal Area Networks**

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title	<b>SUN turnaround time</b>	
Date Submitted	[September, 2010]	
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Re:	[d1P802-15-4g_Draft_Standard.pdf]	
Abstract	[This document describes changes to resolve comments regarding turnaround time.]	
Purpose	[To resolve comments in LB51.]	
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## 1. Overview

In IEEE Std 802.15.4-2006, the turnaround time (aTurnaroundTime) is defined in terms of symbols. The turnaround time is implicitly in the backoff slot time (aUnitBackoffPeriod), which is also defined in terms of symbols.

For the SUN PHYs, this time is better expressed in units of time. The turnaround time would be 1 ms while the backoff slot time will be the turnaround time plus the time to perform CCA detection (a new constant, aCCATime).

## 2. Comments and resolutions

This proposed resolution applies to the following comments as follows:

CIDs 1073, 1074, 1075, 1500, 1501, 1502, 1525, 1526, 1527, 1528, 1529, 1530, 1813:

Resolution: Accept in principle, resolve as described in 15-10-0706-00.

## 3. Changes

Add the following editing instruction (not all rows from d1802.15.4g are shown, just the rows modified):

*Change Table 22 as shown.*

**Table 22—PHY constants**

Constant	Description	Value
aTurnaroundTime	RX-to-TX or TX-to-RX maximum turnaround time ( <del>in symbol periods</del> ) (see 6.9.1 and 6.9.2)	<u>1 ms for the SUN PHYs.</u> <u>The duration of 12 symbol periods</u> <u>for all other PHYs.</u>
aCCATime	<u>The time required to perform CCA detection.</u>	<u>For the SUN PHYs other than MR-</u> <u>OQPSK, 8 symbol periods at the</u> <u>lowest mandatory symbol rate for</u> <u>that channel page.</u> <u>For the MR-OQPSK PHY, this</u> <u>value is defined in Table 75ag.</u> <u>For all other PHYs, the duration of</u> <u>8 symbol periods.</u>

Replace subclause 6.12c.6.4 with the following:

### 6.12c.6.4 CCA specifications

The detection time, aCCATime, for clear channel assessment (CCA) for the MR-OQPSK is shown in Table 75ag. The ED threshold shall correspond to a received signal power of at most  $-90$  dBm, when applying CCA Mode 1 or CCA Mode 3 (see 6.13.9).

Add the following editing instruction:

**Table 75ag—CCA duration for MR-OQPSK PHY**

Frequency band (MHz)	aCCATime (us)
470-510	1024
779-787	512
868-870	1024
902-928	512
950-958	1024
2400-2483.5	512

*Change Table 85 as shown. Rows that are not shown are unchanged.*

**Table 85—MAC sublayer constants**

Constant	Description	Value
aUnitBackoffPeriod	The <del>number of symbols</del> time forming the basic time period used by the CSMA-CA algorithm.	<del>20</del> $aTurnaroundTime + aCCATime$

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