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SIFS, PIFS, DIFS, and Slot Times Defined

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Abstract: **This paper attempts to end the confusion that exists between the times specified in the PHY sections of the document and how they are applied to the MAC protocol.**

Introduction: The PHY timings that currently exist in the draft standard do not adequately indicate how they are applied to the basic access mechanism. For example, the FH PHY sections provide a time for turn around, but do not positively indicate that the time is related to the SIFS time for the FH PHY. It turns out that clarification is needed, not a change. The current MIB variables are still valid, but some may become redundant. Two important variables, the min and max PHY implementation portion of the SIFS delay are implementation dependent.

Motion **Moved: To unify the timings provided in the PHY sections of the document with those used by the MAC, by adding the new text from 95/81.**

New text added to the end of section 5.2.4

Each PHY specifies three numbers; the SIFS interval (SIFSmax, SIFSmin), and the Slot Time. Both numbers are referenced to the 'air' interface. The PHY MIB also contains several implementation dependent variables. These MIB variables adjust the timing allocations between the MAC and PHY consistent with a fixed SIFS interval and Slot Time. The Slot time is used to provide the PIFS and DIFS intervals using the following equation:

$$PIFS = 1/2 \; DIFS = Slot \; Time$$

Add a new MIB variable "aSIFS" where appropriate in the draft.

SIFS ATTRIBUTE
WITH APPROPRIATE SYNTAX
    Integer;
BEHAVIOR DEFINED AS
    "The time in nanoseconds from a time mark to begin transmitting the first pre-amble bit out on the
    air";
REGISTERED AS
    { iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) SIFSmin(??) };
    { iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) SIFSmax(??) };

For FH: Add new text for section 10.6.13.

10.6.13 SIFS Time

The time for a conformant FH PHY unit to place the start of the first bit on the air, measured from the end of the last bit of a received packet on the air, or a slot boundary, shall be at least 18uS and no more than 20uS usec. At the end of this interval, the rf carrier shall be within 1 dB of its final transmit power level, and within the described modulation specifications. The air interface is defined as the measurement point.

For FH: Add two new rows to table 10-17.

| SIFSmin | 18 usec | Static | Identical for all FH PHYs |
| SIFSmax | 20 usec | Static | Identical for all FH PHYs |

For DS: Add table in section 11.

SIFSmin	5 usec	Static	Identical for all DS PHYs
SIFSmax	10 usec	Static	Identical for all DS PHYs
Slot_Time	20 usec	Static	Identical for all DS PHYs

For IR: Add two new rows to the table in section 12.4.

SIFSmin	TDB usec	Static	Identical for all IR PHYs
SIFSmax	TDB usec	Static	Identical for all IR PHYs
Slot_Time	TDB usec	Static	Identical for all IR PHYs