# IEEE P802.11
# Wireless LANs

## Proposed Changes to Support Channel Agility

**Date:** January 13, 1999

**Author:** Bob O'Hara
Informed Technology, Inc.
1750 Nantucket Circle, Suite 138
Santa Clara, CA 95054
Phone: 1 408 986 9596
Fax: 1 408 727 2654
e-mail: bob@informed-technology.com

## Abstract

The following changes related to the MAC and HR/DSSS PHY MIB are proposed to address the comments to draft 1.last regarding interoperability of the FH Interoperability Mode option.

7.2.3.1 Beacon frame format

| Order | Information | Note |
|---|---|---|
| 1 | Timestamp | |
| 2 | Beacon interval | |
| 3 | Capability information | |
| 4 | SSID | |
| 5 | Supported rates | |
| 6 | FH Parameter Set | 1 |
| 7 | DS Parameter Set | 2 |
| 8 | CF Parameter Set | 3 |
| 9 | IBSS Parameter Set | 4 |
| 10 | TIM | 5 |
| NOTES | | |
| 1—The FH Parameter Set information element is ~~only~~ present within Beacon frames generated by STAs using frequency-hopping PHYs.<br>2—The DS Parameter Set information element is ~~only~~ present within Beacon frames | | |

7.2.3.9 Probe Request frame format

**Table 12—Probe Response frame body**

| Order | Information | Note |
|---|---|---|
| 1 | Timestamp | |
| 2 | Beacon interval | |
| 3 | Capability information | |
| 4 | SSID | |
| 5 | Supported rates | |
| 6 | FH Parameter Set | 1 |
| 7 | DS Parameter Set | 2 |
| 8 | CF Parameter Set | 3 |
| 9 | IBSS Parameter Set | 4 |

NOTES
1—The FH Parameter Set information element is ~~only~~ present within Probe Response frames generated by STAs using frequency-hopping PHYs.
2—The DS Parameter Set information element is ~~only~~ present within Probe Response frames generated by STAs using direct sequence PHYs.
3—The CF Parameter Set information element is only present within Probe Response frames generated by APs supporting a PCF.
4—The IBSS Parameter Set information element is only present within Probe Response frames generated by STAs in an IBSS.

### 1.1.2 HR/DSSS PHY functions

The 2.4 GHz HR/DSSS PHY architecture is depicted in the ISO/IEC basic reference model shown in Figure 11 of IEEE Std 802.11-1997. The HR/DSSS PHY contains three functional entities: the PMD function, the physical layer convergence function, and the layer management function. Each of these functions is described in detail in the following subclauses. For the purposes of MAC and MAC Management when channel agility is both present and enabled (see 1.3.2 and Annex C), the HR/DSSS PHY shall be interpreted to be both a direct sequence and a frequency hopping physical layer.

### 1.3.2 HR/DSSS PHY MIB

Add two attributes to the MIB: dot11ChannelAgilityPresent and dot11ChannelAgilityEnabled in the dot11PHYOperationGroup.

Bit 7 of the Capabilities Information Field shall be used to indicate the usage of channel agility by the HR/DSSS PHY. This bit shall be set to 1 when channel agility is in use and shall be 0 otherwise.

**Annex D**

```
Dot11PhyOperationEntry ::= SEQUENCE {
            dot11PHYType              INTEGER,
            dot11CurrentRegDomain     Integer32,
            dot11TempType             INTEGER
            dot11ChannelAgilityPresent  Boolean
            dot11ChannelAgilityEnabled  Boolean}


dot11ChannelAgilityPresent OBJECT-TYPE
        SYNTAX Boolean
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "This attribute indicates that the PHY is capable of
        channel agility."

    ::= {   dot11PhyOperationEntry 4 }


dot11ChannelAgilityEnabled OBJECT-TYPE
        SYNTAX Boolean
        MAX-ACCESS read-only
        STATUS current
        DESCRIPTION

        "This attribute indicates that the PHY channel
        agility functionality is enabled."

    ::= {   dot11PhyOperationEntry 5 }
```