

**IEEE 802.11
Wireless Access Method and Physical Specification**

Title: **PHY Report**

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**Report of the IEEE802.11 PHY Group Meeting
Boston, May 6-9**

Secretary- Mike Trompower

Agenda

Approval of minutes

IR PHY HEC - Motion #1

Multirate issues

Comments resolution

Japanese call sign

Straw poll:

1 Leave as is

2 Add call sign in every packet

3 Remove all references to Japan in whole standard

4, 3, 2

Subcommittee to address Japanese call sign issue

DS Motions

FH Motions

HS FH Study group of Full PHY

FCC wish list - Motion #2

Reports
Conformance testing - Carl Andren
Agenda for July
 Process comments
 Japanese call sign
 Conformance testing

Motion 1: To bring clause 16.2.4.6 into alignment with the other PHYs and to specify that the CRC-16 header check field be transmitted MSB to LSB.

Moved by: Jan Boer, 2nd: Stuart Kerry

PHY vote: 4-0-5 Motion passes
Plenary vote: 19-0-4 **Motion passes**

Motion 2: Move to accept the recommendations as outlined in document 96/58 by the FH group to bring to the full WG a request to provide an official 802.11 position on the NPRM 96-8.

Recommendations in 96/58:

1. The 802.11 should reply to the FCC NPRM 96-8 strongly supporting wider channels for FHSS systems.
2. Include language to support a minimum of 20 non-overlapping channels, provided that the total occupied bandwidth including all channels be at least 75 Mhz. with the same transmit power levels presently specified by FCC Part 15.247.
3. Include language asserting that wider channels will allow fair access and perhaps even less interference to other users of the band such as DS and less peak interference levels to narrowband systems.
4. Include language that this will provide harmonization with European CEPT regulatory requirements, worldwide interoperability of products and facilitating US industry worldwide competitiveness

PHY vote: 6-2-3 Motion passes
Plenary vote: 9-6-8 **Motion passes** (procedural)

**Report of the IEEE802.11 FH-PHY Group Meeting
Boston, May 6-9**

Secretary - George Fishel

Approval of Minutes

Agenda

- Comments resolution - Motion #2
- France/Spain hop patterns - Motion #1
- France/Spain references
- Other draft issues
- Multirate (CCA in multirate) - Motion #3 and #4
- 3 Mbps
- Readdress CCA motion - Motion #5
- Agenda for next time
 - Process comments
 - Japanese regulatory

Motion 1: Accept the hop patterns for France/Spain in 96/68.

Moved by: Dean Kawaguchi (Stuart Kerry acting chair), 2nd:

- FH PHY vote: 5-0-0 Motion passes
- PHY vote: 10-0-1 Motion passes
- Plenary vote: 27-0-1 **Motion passes**

Motion 2: Accept the following text changes to the FH section.

Changes made to paragraph 14.3.3.2.1 by changing the time to 22 usec. from 20 usec. and adding the words "synchronous" and "asynchronous" to the text. Additionally, add the sentence to paragraph 14.6.15.3 " that starts synchronously with respect to slot times as specified in subclause 14.3.3.2.1" and "In the presence of any 802.11 compliant 1 Mb/s FH PHY signal above -85 dBm that starts asynchronous with respect to slot times as specified in subclause 14.3.3.2.1, the PHY shall signal busy with 70% probability of detection during the preamble within the CCA assessment window."

Moved by: Art Lashbrook, 2nd: Naftali Chayat.

- FH PHY vote: 3-0-2 Motion passes
- PHY vote: 9-0-2 Motion passes
- Plenary vote: 21-0-7 **Motion passes**

Motion 3: expand the rate field from one bit to two

Four combinations

00 = 1Mb/s

01 = 2Mb/s
10 = reserved -> undefined higher rate A
11 = reserved -> undefined higher rate B

Add statement: Compliant FH PHY devices shall not transmit codes 10 or 11.

Moved by: Naftali Chayat, 2nd: Art Lashbrook.

FH PHY vote: 3-1-0 Motion passes

PHY vote: 10-0-2 Motion passes

Plenary vote: 21-3-7 **Motion passes**

Motion 4: Accept the following text changes to the FH section.

“If the receive procedure encountered an unsupported rate error, the PLCP shall keep the CS/CCA state at BUSY for the duration of the frame by either:

- 1) **detecting higher rate signals with equivalent performance to that which is specified in 14.6.15.3 or**
- 2) **setting the countdown timer to the value corresponding to the TIME REMAINING adjusted by the actual data rate or by the highest known data rate if the rate is beyond the set of known rates.”**

Also, delete the “monitor packet” block from Figure 77 and in the Receive State Machine paragraph 14.3.3.3.1 will be modified to read “If the PLCP header was decoded without a CRC error but encountered an unsupported rate , then the PLCP shall immediately complete the receive procedure with a *PHY_EXEND.indicate (EXERROR=unsupported_rate)* to the MAC, and return the CS/CCA procedure with TIME REMAINING set to the byte/bit count remaining and the DATA RATE set the value in the PLCP header.

Moved by: Art Lashbrook, 2nd: Stuart Kerry

FH PHY vote: 3-0-1 Motion passes

PHY vote: 5-1-5 Motion passes

Motion sent back by WG to the PHY

There were three motions passed in the FH PHY meeting. Presented as one motion in the PHY by instruction of the FH group.

Motion 5: Accept the following changes for multi-rate support and CCA:

- 1) the PLCP rate field was expanded to three bits to indicate rates from 1.0 to 4.5 Mbps in 0.5 Mbps steps
- 2) the text was modified to reflect changes in the CCA detection algorithm and the addition of the capability of holding CCA BUSY for the calculated duration of an unsupported rate.
- 3) the text was modified in the receive procedure to pass the byte count and data rate of an unrecognized rate to the CCA procedure.

PHY vote: 6-0-0 Motion passes

Plenary vote (PHY group, Johnny Z.): 15-0-3 Motion passes

Text changes:

Bit	Parameter Name	Parameter Values	Description
0	Reserved	Default = 0	Reserved
1	Reserved	Default = 0	Reserved
2	Reserved	Default = 0	Reserved
1:3	PLCPPDU_BITRATE	000=1.0Mbps, 001=1.5Mbps, 010=2.0, 011=2.5, 100=3.0, 101=3.5, 110=4.0, 111=4.5Mbps	This field indicates the bit rate of the PLCP_PDU from 1 Mbps to 4.5 Mbps in 0.5 Mbps increments

Added paragraph in CS/CCA:

If the receive procedure encountered an unsupported rate error, the PLCP shall keep the CS/CCA state at BUSY for the duration of the frame by setting the countdown timer to the value corresponding to the calculated time based on the information in the PLCP header and the 33/32 expansion factor.

Changed paragraphs in receive:

If the PLCP header was decoded without a CRC error but encountered an unsupported rate, then the PLCP shall immediately complete the receive procedure with a *PHY_RXEND.indicate(RXERROR=unsupported_rate)* to the MAC, and return to the CS/CCA procedure with the byte/bit count remaining and the data rate value contained in the PLCP header.

If an error was detected during the reception of the packet PLCP_PDU, the PLCP shall immediately complete the receive procedure with a *PHY_RXEND.indicate(RXERROR=carrier_lost)* to the MAC, and return to the CS/CCA procedure with the byte/bit count remaining and the data rate value contained in the PLCP header.

**Report of the IEEE802.11 DS-PHY Group Meeting
Boston, May 6-9**

Agenda:

- Minutes (accepted)
- Multi-rate issues
- Conformance testing (resulting in update of document 96/66A)

Passes two motions in Wednesday plenary:

Motion 2: (Jan Boer / Mike Trompower)

Move that the full PHY approve the section 15 text additions relating to multirate as described in document 96/65 r1 and the minutes of the DS PHY group. The change is the interpretation of the DS PHY PLCP to be in microseconds. The interface to the MAC is still in bytes.

PHY vote: 8-0-2 **Motion passes**

Plenary vote: 14-0-8 Motion passes

Motion 3: (Jan Boer / Mike Trompower)

Move that the full PHY approve the section 15 text additions relating to conformance testing as described in document 96/65 r1, documents 96/66 and 96/67 r1 and the minutes of the DS PHY group. Text changes are the addition of two 'optional' PLME primitive commands to facilitate conformance testing.

PHY vote: 11-0-1 **Motion passes**

Plenary vote: 12-1-10 Motion passes

Agenda for July:

- Letter ballot comment processing
- Conformance testing

See you in the Netherlands!

**Report of the IEEE802.11 IR-PHY Group Meeting
Boston, May 6-9**

No active IR group members present at this meeting. One change made to IR section in the full PHY meeting (see motion #1).