Tentative Minutes of the IEEE P802.11 FH PHY Subgroup

Plenary Meeting
La Jolla, California
March 11-15, 1996

Tuesday, March 12, 1996, 10:30 AM

FH PHY SubGroup

Minutes IEEE 802.11 FH PHY Sub Group Meeting
Tuesday, March 12, 1996

The FH PHY Chair Dean Kawaguchi (Symbol) was on maternity leave and Naftali Chayat (Breezecom) was asked to stand in for Dean. Ian Gifford (M/A-COM) agreed to record the minutes.

Naftali Chayat (Breezecom) Brought the meeting to order 10:35am

AGENDA
1. Approval of Minutes
2. Resolutions of Comments
3. We need to discuss the Japanese Draft comments
4. Conformance testing
5. Higher speed SG
6. "Bounding payload uncertainty limits in PHY".

Wayne Moyers (Consultant) wanted to know if the 3MB SG Proposal was relevant?
Wayne Moyers (Consultant) wanted to know if Johnny Zweig's "Duration Field" was relevant

Naftali Chayat (Breezecom) moved to approve the agenda; Ian second
Vote: 6,0,0; passed

Agenda Item 1.0 Naftali Chayat (Breezecom) deferred to approve the minutes of previous meeting until tomorrow 3/13/96 am. Yea's had it

Agenda Item 2.0 The Resolutions of Comments is related doc.: IEEE P802.11-96/47-7

Comment 12 (C12) or **Section number 14.3.2, 15.2.2 -** Naftali Chayat (Breezecom) asked for a straw poll to replace length in octets with Johnny Zweig's comments on Duration encoded vs. length encoded"
Naftali Chayat (Breezecom) Asked how many were interested in the above poll?
Vote: 5,0,0; Passed

The discussion continued; Replace length in octets with " duration in symbols". Johnny Zweig was requested to attend by Naftali Chayat (Breezecom) and discussed his comments in detail. Johnny was asked if he wanted to withdraw his comments he deferred to the Full WG.

Naftali Chayat (Breezecom) asked for this to be discussed in the Full Plenary and see if this should be in a new PLCP Header Structure…Naftali Chayat (Breezecom) was trying to resolve the no vote…

Issues:
-Stuff symbols inside?

-Number of bits - 13/14?
-Check impact on MAC!

A Straw poll was requested concerning the above issues either to Change 13/3 as the field breaks in PLCP Header or Change 14/2 as the field breaks in PLCP Header; the former one in the straw poll.

Naftali Chayat (Breezecom) moved to adjourn for lunch until 1:00pm 3,0,0

Lunch

Naftali Chayat (Breezecom) Chayat (Breezecom) called the meeting back to order after lunch
Meeting reconvened at 1:45pm. Agenda item 2.0 was resumed after lunch.

Mack Sullivan assumed the responsibility to record the minutes as I an had not returned from lunch.

Naftali Chayat (Breezecom) made a motion; Stuart seconded the motion: To defer the wording placement on Johnny Zweig's no comment, until the evening session.
Vote: 3,0,2; Passed

The matter of the Japanese comments was being discussed when Vic Hayes entered the meeting room.

Vic Hayes says that if you want to say in the standard that it can be used by Japan, Australia, Canada, etc., then we must include relevant specifications covering their regulatory rules. The general caveat of conformance to National Body rules would not show ISO a good faith effort on the Working Group's part.

Stuart says we do not know the Regs because they are so vague. Nathan said can you send the caller ID…Vic says he can answer right away via FAX…does not know English so well.

Naftali Chayat (Breezecom) asked Vic Hayes if the DS PHY had asked to discuss this issue.

Naftali Chayat (Breezecom) moved to table until Wednesday PM; Ian second
Vote:5,0,0; Passed

Naftali Chayat (Breezecom) asked Vic if he wanted to discuss items:

- Japan Caller ID or Call Sign
- Johnny Z. PLCP Header Duration in Symbols of Microseconds

Seq. #	Section number	IEEE P802.11 FH Phy Subgroup Comments
1.	14.8.2.1.5.	Nothing recorded
2.	12.3.4.4	Nothing recorded
3.	13.1.4.4	Nothing recorded
4.	13.1.4.4	Nothing recorded
5.	13.1.4.6	Nothing recorded
6.	13.1.4.6	Nothing recorded
7.	14.2.3	Nothing recorded
8.	14.2.3.1	Nothing recorded
9.	14.2.3.2	Nothing recorded
10.	14.3.2	Nothing recorded
11.	14.3.2, 15.2.2	Nothing recorded

12.	14.3.2, 15.2.2	Naftali questioned this comment by asking the group this question: How are we going to address the large number of conflicts/concerns identified by the Japanese relative to their countries regs? General discussion ensued. Motion: Was made that second by Nathan that we present this issue to the MAC Group for them to handle. Also that we do not make any mods to the PHY frame structure. After some discussion asked for a straw poll. Who within the FH Sub Group would like the PHY to handle this issue by allocating a field for this Japanese Call Sign. More discussion ensued where upon Stuart moved to call the question on the above motion. Vote: 7,0,0; Passed Vote: on the Motion: 4,2,2
13.	14.3.2.2.1	Issue 13 was previously dispositioned.
14.	14.3.2.2.2 14.3.2.3 15.2.3.6 15.2.4 7.1.3.7 16.2.4.6	Issue 14 Editorial was accepted Naftali made the motion to let the editors handle the required changes Vote: 6,0,1; Passed
15.	14.3.3	Ron Mahany (RM) comments Naftali Chayat (Breezecom) moved to accept the comment seconded by Mack Sullivan Vote: 8,0,2; Passed
16.	14.3.3.2.1	RM Comments "Delete the reference to 20μs after the slot time" Naftali Chayat (Breezecom) asked if there was any discussion? Nathan offered his interpretation of RMs comments…"Jim MacDonald may have written a paper… Naftali Chayat (Breezecom) feels reluctant to just accept Naftali Chayat (Breezecom) moved postpone until 3/13/96; Nathan seconded All those in favor to postpone C16 after clarification by author Vote: 7,0,2; passed
17.	14.3.3.2.1	RM Comments "PHY Tx start must be time bounded to preserve system timing" Naftali Chayat (Breezecom) moved to accept as worded in the comments seconded by Jeff Abramowitz (3Com) Vote: 2,0,6; Passed
18.	14.3.3.3.1	Nothing recorded
19.	14.3.3.3.1	RM Naftali Chayat (Breezecom) moved to accept as worded in the comments second Stuart Vote: 4, 0,2; Passed
20.	14.4.2.2, 9.2.1, 9.3.2.2, 9.4, 15,2,3,5	Naftali commented that this was editorial and would not be treated here. Vote: None
21.	14.4.2.2,9.2.1 , 9.3.2.2, 9.4, 15,2,3,5	Nothing recorded
22.	14.6.13, 14.6.14.5	Nothing recorded

	General	
23.	14.6.14.1	Japan "Ministerial Ordinance & Nominal Transmit Power" Nathan moved; second Stuart; Regulatory issue not applicable Vote: 4,0,4 Rejected
24.	14.6.14.1	Japan "Ministerial Ordinance & Nominal Transmit Power" Nathan moved; second Stuart; Regulatory issue not applicable Vote: 4,0,4 Rejected
25.	14.6.14.2	Japan "Transmit Power 10mW/MHz..." Naftali Chayat (Breezecom) offered an interpretation of the Japanaese comment...local regulations Stuart moved; Nathan second; Regulatory issue not applicable Vote 5,0, 3; Rejected
26.	14.6.14.2	Japan "Transmit Power 10mW/MHz..." Naftali Chayat (Breezecom) offered an interpretation of the Japanaese comment...local regulations Stuart moved; Nathan second; Regulatory issue not applicable Vote 5,0, 3; Rejected
27.	14.6.14.3	Japan "Regs" Stuart moved to reject; Art second; Regulatory issue not applicable Vote:4,0,3; Rejected
28.	14.6.14.3	Japan "Regs" Stuart moved to reject; Art second; Regulatory issue not applicable Vote:4,0,3; Rejected
29.	14.6.14.4	Input Signal Range 14.6.15.1 vs. 14.6.14.4 Naftali Chayat (Breezecom) Moved to accept as worded in the comment General vote Vote: 5,0,3; Passed
30.	14.6.14.4	Transmit spectrum shape Art moved to accept with new text: Transmitter shall pass a spectrum mask test. The duty cycle between Tx and Rx is nominally 50% and the transmit frame length is nominally 400 usec. The adjacent channel power is defined as the sum of the power measured in a 1 MHz band. For a pseudo random data pattern, the adjacent channel power , shall be either less than -70 dBm or a function of the offset between channel number N and the assigned transmitter channel M. Where, M is the actual transmitted center frequency, and N a channel separated from it by integer numbers of MHz. ; seconded by Nathan Vote: 5,0,2; Passed
31.	14.6.14.5	Japan "Regs" Naftali Chayat (Breezecom) moved to reject; second Stuart Vote: 5,0,3; Passed
32.	14.6.14.5	Japan "Regs" Naftali Chayat (Breezecom) moved to reject; second Stuart Vote: 5,0,3; Passed
33.	14.6.15.4	Naftali commented that this was editorial and would not be treated here. Vote: None
34.	14.6.15.5	Naftali commented that this was editorial and would not be treated here. Vote: None
35.	14.6.15.7	Japan "Regs"

		Naftali Chayat (Breezecom) moved to reject as regulatory issue; second Ian Vote: 4,0,5 Passed
36.	14.6.15.7	Japan "Regs" Naftali Chayat (Breezecom) moved to reject as regulatory issue; second Ian Vote: 4,0,5 Passed
37.	14.6.2	Naftali commented that this was editorial and would not be treated here. Vote: None
38.	14.6.4	Table 35 Naftali Chayat (Breezecom) said after we rejected these two comments Art moved to modify the table to be in accordance with Japanese requirements Move to modify Table 35 Minimum of 10 Channels and write Not Applicable. Naftali Chayat (Breezecom) Moved Ian second Remove Vote: 4,0,1; Passed
39.	14.6.4	Table 35 Naftali Chayat (Breezecom) said after we rejected these two comments Art moved to modify the table to be in accordance with Japanese requirements Move to modify Table 35 Minimum of 10 Channels and write Not Applicable. Naftali Chayat (Breezecom) Moved Ian second Remove Vote: 4,0,1; Passed
40.	14.6.6	Japan "Regs" Related to 10 channels vs. 23 channels… Stuart moved to reject as regulatory issue; second Nathan Motion on floor to delete min of 10 channels rejecting the comment second Nathan Vote: 5,2,2; Passed Naftali asked for a point of clarification on the no votes >Revisted reject Japan as regulatory Naftali moved to confirm the previous vote Art seconds Vote: 6,0,4; Passed General Discussion ensued on C38&39 vs. C40&41…"what are we voting?" Naftali moved; second Art Stuart called the question Wayne seconded "Deleting number 10 channels in the third row of the table to Not Applicable" Vote: 5,0,1; Question called Vote: 4,3,2; Passed Naftali asked if we under Majority Rule? #2 Vote: 4,3,0; Passed; this issue will go to the next level i.e., WG
41.	14.6.6	Japan "Regs" Related to 10 channels vs. 23 channels… Stuart moved to reject as regulatory issue; second Nathan Motion on floor to delete min of 10 channels rejecting the comment second Nathan Vote: 5,2,2; Passed Naftali asked for a point of clarification on the no votes >Revisted reject Japan as regulatory Naftali moved to confirm the previous vote Art seconds Vote: 6,0,4; Passed General Discussion ensued on C38&39 vs. C40&41…"what are we voting?" Naftali moved; second Art Stuart called the question Wayne seconded "Deleting number 10 channels in the third row of the table to Not Applicable" Vote: 5,0,1; Question called

		Vote: 4,3,2; Passed Naftali asked if we under Majority Rule? #2 Vote: 4,3,0; Passed; this issue will go to the next level i.e., WG
42.	14.6.7	Japan "Regs" Rejection Naftali Chayat (Breezecom) moved to remove the regulations in the standard; Stuart second Vote: 5,0,4; Passed
43.	14.6.7	Naftali commented that this was editorial and would not be treated here. Vote: None
44.	14.6.8	Naftali commented that this was editorial and would not be treated here. Vote: None
45.	14.6.8	Japan "Regs" Rejection Naftali Chayat (Breezecom) movd to remove;Stuart second Vote: 6,0,3; Passed Point of clarifications; Delete Japanese Naftali Chayat (Breezecom) moved to reafirm previous Stuart; Point of information is Wayne Moyers (Consultant) out of order Wayne Moyers (Consultant) moves to reject the comments
46.	14.6.8	Japan "Regs" Rejection Naftali Chayat (Breezecom) movd to remove;Stuart second Vote: 6,0,3; Passed Point of clarifications; Delete Japanese Naftali Chayat (Breezecom) moved to reafirm previous Stuart; Point of information is Wayne Moyers (Consultant) out of order Wayne Moyers (Consultant) moves to reject the comments
47.	14.6.9	Japan "Regs" Rejection Art moved to reject the regulatory comment in the standard; Nathan second Vote: 7,0,3; Passed
48.	14.6.9	Japan "Regs" Rejection Art moved to reject the regulatory comment in the standard; Nathan second Vote: 7,0,3; Passed
49.	14.7.2 14.6.10	"These two sections are inconsistent in terminology and content." Naftali said by know we agreed to add the 2MB and the next minimum deviation I feel that the previous documentation is inaccurate in 1MB. So we are not changing the minimum deviation definition which…we are leaving as it is. Wayne moved that the additional specification on the 1MB modulation that is contained within the 2MB definition section be correctly included within the section 14.6 as per the commenter"s point.; Stuart second Wayne calls the question and noted that RM's comment is qualitative; Stuart second. Vote: 5,0,0; Passed We agree and will make the necessary changes in the 1MB section to reflect the relevant overlooked criteria that were contained only in the 2MB section. VI. 14.6.10 An incoming bit stream at 1 Mb/sec will be converted to symbols as shown in TableXX below:

		1 Mbit/sec, 2-GFSK Symbol Carrier Deviation 1 1/2 * h2*Fclk 0 -1/2 * h2*Fclk *Note: These deviation values are measured using the center symbol of 7 consecutive symbols of the same value. The instantaneous deviation will vary due to Gaussian pulse shaping. h2, the deviation factor of 2GFSK (measured as difference between frequencies measured in the middle of 0000 and 1111 patterns encountered in the SFD, divided by 1 MHz) will nominally be 0.32. Naftali says that we are voting separately on 14.7.2. RM Comment is asking for a slight wording change explain the accuracy of h2 & h4. Naftali moved that we do not accept the wording as 14.7.2 as an editorial change - correct the sentence only. Naftali moved Wayne second. Vote: 5,0,0; Passed.
81.	All, 14.6.1.2	Naftali commented that this was an editorial and would not be treated here Vote: none
82.	14.6.10	Naftali moved to accept these comments; Ralph Second Vote: 5,0,0; Passed

Agenda Item 3.0 Naftali Chayat (Breezecom) moved to set aside 15 minutes to prepare a Japanese e-mail

Japanese MPT FH Phy SG Questions:
1. Can Call Sign be included in a Data section of a Special purpose packet that is sent once any time after power up?

2. Transmitted power: can we transmit at 1.2 * 230 mW instantaneous power given that we hop over 23 MHz bandwidth and utilize 1 MHz wide channels?

3. The 802.11 proposes specific hopping sequences over 23 channels for use in Japan. Do these specific sequences violate Japanese regulations concerning frequency hopping?

The e-mail was sent to Mr. Kazushige Fujita, Section chief, Land Mobile Communications Division, Telecommunications Bureau, Ministry of Posts and Telecommunications, Japan at 1:00am PCT on Wednesday, March 13, 1996 by Ian Gifford and was copied to Vic Hayes for filing purposes.

Naftali Chayat (Breezecom) moved to adjourn today; Nathan second

Naftali Chayat (Breezecom) moved to reconvene at 3/12/96 9:00pm; Ian second

Dinner

Naftali Chayat (Breezecom) Brought the meeting to order 9:05pm
Naftali moved to discuss the Mack Sullivan comments.
Stuart moved to table this issue until Mack's presentation; Wayne second
Vote: 5,0,0; Passed

Resumed agenda item 2.0 discussion as documented above.

Naftali Chayat (Breezecom) adjourned the meeting at 11:00pm

ATTENDANCE (Varied over the duration)

Wayne Moyers
Naftali Chayat
Ian Gifford
Nathan Silberman
Mack Sullivan
Keith McKechnie
Brad Herrin
Art Lashbrook
Johnny Zweig
Akira Miura
Johnny Zweig
Keith Anderson
George Fishel
Stuart Kerry
Ralph Yeager

Wednesday, March 13, 1996, 8:50 AM

FH PHY SubGroup

Minutes IEEE 802.11 FH PHY Sub Group Meeting
Wednesday, March 13, 1996

Art Lashbrook (XIRCOM) agreed to record the minutes for this portion of the session.

Naftali Chayat (Breezecom) Brought the meeting to order at 8:50 am

Discussion of comments provided by Mack Sullivan on behalf of Proxim:

14.	Section 6	Issues: • What is feasible? The inputs are based on a specific implementation. The specifications were debated before and previously relaxed. • Relaxation of the specifications will create additional interference and reduce the network throughput. Moved by Bill Huhn not to accept the proposal to relax the specifications Second by Nathan Silberman Vote: 4, 1, 1; Passed
9.	Section 6	MAC group reportedly rejected this item. No action by this body.

Corrections to Yesterday's Minutes:

- Mihir Ravel was in attendance. His name was not listed.
- The language within the box on page 2 was modified to delete "according to the decision made, prior to lunch" and remove the box.
- Modify text of comments 17, 19 and 29. Change text to: "moved to *accept as worded in the comments*"
- Comment 30: Text as approved was not recorded. Nathan provided a copy of the text which was approved. "For a *pseudo random data pattern,* the adjacent channel..."
- These changes were made in the above text.

Unresolved from the evening session:

1. RM comment number 16
2. Language for JZ's proposals to change the means of reporting duration

Regarding participation by non-voting members yesterday:
Nathan Silberman proposed that we must clarify votes made yesterday in which non-voting members participated. This occurred for a period of time until Vic clarified the rules for the subgroup.

Moved by Nathan to approve motions proposed or seconded or voted upon by non-voting members yesterday. Seconded by Ian.
Vote: 6, 0, 0 ; Passed

16.	14.3.3.2.1	Issues: • CCA functions: initiate reception & prevent transmission • 16 uS prior to end of the slot is sufficient to avoid undesirable transmissions, however this precludes faster implementations • This issue was debated in the past. Need more information to understand past rationales. We don't know the impact of this decision. Naftali moved to reject the change since further explaination is required. Seconded by Ralph. Vote: 7, 0, 0; Passed

Japanese Regulations:
Waiting for comments back from the Japanese regulatory body before proceeding.

Hopping Sequences for France and Spain:
Request by Stuart to defer this issue until a report has been generated.

FCC - NPRM and wish list:
Symbol requested wider channels for FH at 2.4 GHz. FCC response contained in document 60396 was reviewed.

Rationale presented in the objections to the proposed wider channels are invalid because:
- Interference should not be worse since the power specral density will be spread out over a wider range.
- RF utilization will be lower with higher data rates for the same load requirements.
- Instantaneous power received by narrowband systems will be lower, average power will be the same.
- If fewer numbers of channels are utilized, the regulations could require that a wide aggregate bandwidth (75 MHz?) be required.

Wider channels would perhaps be accomidated by a new PHY PMD.

Moved by Wayne Moyers that the FH Subgroup, as the assigned technical experts within 802.11, ask that the PHY and full 802.11 WG adopt the following motion items:
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 reguirements, worldwide interoperability of products and facilitating US industry worldwide competitiveness

Seconded by Stuart Kerry
Unaminous consent to vote on all items as a single motion.
Vote: 8, 0, 0; Passed

Moved by Nathan Silberman to include language that we support similar changes to the FCC Part 15.247 regulations for the 5.7 GHz band.
Seconded by Akira Miura. Vote: 6, 0, 1; Passed

Hopping Sequences:
- New hopping sequences are acceptable to the FCC.
- FCC does not permit synchronization of adjacent BSS hopping sequences to avoid collisions.

Recess called for Lunch by Naftali and confirmed by unanimous consent.

ATTENDANCE (Varied over the duration)
Naftali Chayat
Art Lashbrook
Bill Hahn
Ian Gifford
Mihir Ravel
Ralph Yeager
Stuart Kerry
Brad Herrin
Keith McKechnie
Akira Miura
Nathan Silberman
Mike Laudon
Keith Amundsen
Wayne Moyers
George Fishel
Mack Sullivan

Thursday, March 14, 1996, 8:35 AM

FH PHY SubGroup

Minutes IEEE 802.11 FH PHY Sub Group Meeting
Thursday, March 14, 1996

Art Lashbrook (XIRCOM) agreed to record the minutes for this portion of the session.

Naftali Chayat (Breezecom) Brought the meeting to order at 8:35 am

Multirate Issues:
Naftali reported on matters arising from the Wednesday night multirate meeting:

- The group agreed to adopt the "Smart DIFS" approach which had been proposed by Wim in 1994.
- The group agreed to reject Johnny Zweig's proposal to change the "duration" from units of octets to units of microseconds because:
    - CCA is just slightly worse than duration
    - "duration" version cannot encode 4096 long packets required by MAC
    - proposal was withdrawn by Johnny

Moved to Naftali to reconsider the PLCP header encoding issue. Seconded by Ralph.
Vote: 4, 0; Passed

Moved to accept the results of the multirate meeting regarding PLCP headers and to reject the motion passed in the PHY FH group yesterday to base duration on the number of symbols.
Vote: 4, 0, 0; Passed

Unsupported Rates:
Naftali reported the need to reopen RXERROR types issue. In the case of good header not understood there is a need to indicate RXSTART and then RXERROR (unsupported_rate). Another error would be carrier_loss. CRC32 errors checked by the MAC.

There are different error types which must be provided to the MAC.

Moved by Naftali to reconsider the RXERROR types issue. Seconded by Nathan. 4, 0, 0; Passed

14.3.3.3.1. text was modified with the following language:

> ... procedure with TIME_REMAINING=0.
>
> If the PLCP header was decoded without a CRC error but with an unsupported rate, then the PLCP shall immediately complere the receive procedure with a *PHY_RXEND.indicate(RXERROR=unsupported_rate)* to the MAC, and return to the CS/CCA procedure with TIME_REMAINING=0.
>
> If any error was detected during the reception of the packet PLCP_PDU, the PLCP shall immediately... with a *PHY_RXEND.indicate(RXERROR=carrier_lost) to the MAC...*

Note that TIME_REMAINING is set to 0 if an unsupported rate is detected since the duration is unknown. The hardware should ideally then provide indication of when the channel is no longer busy. The implementation of this was of concern to the group.

Figure 69 must be changed as follows:
1. To reflect exit due to unsupported_rate, need a new box with RXERROR=unsupported_rate inside. Enter this box from the "Start Receive Procedure" box if RXERROR=unsupported_rate. Exit from this box goes to the "Complete RX Procedure" box.
2. Change RXERROR=error_type to RXERROR=carrier_lost in whitener_decoding box.

Table 24, subclause 12.3.4.3.:
1. Change PHY_RXSTART to PHY_RXEND in the last row.
2. Add Unsupported_Rate to error types.
3. Check if Format_Violation is not equivalent.

ACTION ITEM: Check that zero value for TIME_REMAINING does not cause CCA machine to indicate channel idle. Check modification of CCA machine to deal with this separately.

It was agreed to be desirable to create a new state in the CCA state machine which deals with this problem.

14.3.3.3.1. text was further modified with the following language:

> ... procedure with TIME_REMAINING=0.
>
> If the PLCP header was decoded without a CRC error but with an unsupported rate, then the PLCP shall immediately complere the receive procedure with a *PHY_RXEND.indicate(RXERROR=unsupported_rate)* to the MAC, and return to the CS/CCA procedure to state MONITOR_PACKET.
>
> If any error was detected during the reception of the packet PLCP_PDU, the PLCP shall immediately... with a *PHY_RXEND.indicate(RXERROR=carrier_lost) to the MAC...*

Change Figure 67, CS/CCA State Machine:

14.3.3.2.1. text was modified with the following language:

> ...lead to the successful reception of a frame.
>
> If the receive procedure encountered an unsupported_rate error, it will return to CS/CCA state machine into a MONITOR_PACKET state. In this state it will indicate channel_busy until CS/CCA machine detects channel is no longer busy. Antenna will not be switched during this procedure. After detecting channel idle the CS/CCA state machine shall enter CS/CCA assessment state.
>
> The TIME_REMAINING may be...

Moved by Naftali to accept the above changes. Vote: 4, 0, 0; Passed

12.3.5.12.2. must be modified to reflect the above changes. The editors are asked to make this change.

Japanese Regulations:
No reply from the Japanese regulatory body to date.

Volunteer requested to:
1. Verify that language in the document is not in conflict with the Japanese regulations.
2. To obtain additional information from the Japanese regulatory body.

No volunteers were appointed. This issue will be raised in the full PHY meeting.

Spain & France Hopping Sequences:
Tabled until the next interim session. Vote: 4,0; Passed.
To be discussed via E-Mail.

Session of the FH Subgroup adjourned by unaminous consent at 10:35.

ATTENDANCE (Varied over the duration)
Naftali Chayat
Art Lashbrook
Ralph Yeager
Stuart Kerry
Keith McKechnie
Akira Miura
Nathan Silberman
Wayne Moyers
George Fishel
Mack Sullivan