
IEEE 802.11
Wireless Access Method and Physical Specification

DSSS PHY Adhoc Group Meeting
Monday January 10 - Thursday January 13

802.11 DS PHY Adhoc meeting Monday 10 January 1994

Rommel Atienza secretary, Paul Struhsaker chairman

Motion: Micheal Soderstrand moves to accept the minutes from the last DS Phy

Maurice France seconds

9 for, 3 abstain

the motion passes

2 paper are presented to the DS phy

94/04 by Hussein Mehdi

94/02 by Zhen Wan

Jan Boer (DS PHY cochair) asks that NCR be stricken as a reference in document 94 /02. Kamilo Feher notes that the words "joint work" should be replaced by "based inputs and previous submissions" to properly credit NCR and Telxon's differential encoding table used in document 94/02

The meeting is adjourned

802.11 DS PHY Adhoc meeting 11 January 1994 (AM)

Rommel Atienza secretary, Paul Struhsaker chairman

Paul S presented a list of joint FH/DS sub-issues, most of these items were covered by regulatory agencies in the countries in which 802.11 would operate. The only true joint issue was DS PHY item 20a dealing with Listen Before Talk (LBT) thresholds for Clear Channel Assessment (CCA)

A good deal of discussion on the issue of CCA ensued. The basic consensus of the group was that the only real joint issue for the FH and DS PHY group was CCA

Motion: Jan B moves have CCA and the MAC/PHY interface be accepted as the principle common area for discussion in the joint PHY meeting.

Hussein M seconds

11 for, 0 against, 1 abstains

motion passes

Paul S presents a methodology for the DS PHY group to meet the 802.11 full working group November 1994 deadline for development of a draft standard. The 5 major points of Paul's (with final group modifications) is a follows:

- 1) The Templet, document 93/232, will be updated and distributed for each meeting by Jan Boer
- 2) A Draft DS PHY Proposal will be created, updated, and distributed for each meeting by Tom T and Paul S of AIRONET
- 3) At each Plenary or Interim session, the templet and the draft proposal will be reviewed, edited, and revised by the DS PHY group

- 4) Continue DS Phy group efforts to close all open DS PHY sub-issues
- 5) Work with the full PHY and MAC groups to close sub-issues which interface to these working groups

Motion: Maurice F move to accept the methodology for achieving the DS PHY's goals
Jan Boer seconds
6 for, 0 against, 2 abstains
The motion passes

The group now moves to closing sub-issues

Motion: Jan B moves to accept and close item 3c as specified in document 93/232
Hussein M seconds
11 for, 0 against, 0 abstain
The motion passes 3c is closed

discussion over sub-issue 10b results in the following changes:
42 db at 10-5 BER changed to 37 db at 10-5 BER
42 db be changed to 39 db
Motion: Kamilo F moves to accept changes and close sub-issue 10b
Maurice F seconds
11 for, 0 against, 0 abstain
the motion passes sub-issue 10b is closed

discussion on appendix item 14 (encoding tables) to read:
"Modulation parameters for DQPSK, DOQPSK, and DBPSK"
modify appendix: "Table 1 Mapping for DQPSK and DOQPSK "
modify sub issue 14 a to be titled "DOQPSK offset" with value to be "0.5 chip in Q transmit path"

Motion: Tom T moves to accept changes to item 14 and close the sub-issue
Jeff R seconds
11 for, 0 against, 0 abstain
the motion passes sub-issue 14 is closed

Motion Jeff R reopen item 18a, amend OQPSK to DOQPSK and close the sub-issue
Tom T seconds
12 for, 0 against, 1 abstain
the motion passes sub-item

discussion on items 23 and 24 over expanding these sub-issue definitions to ensure 802.11 radios do not have extraneous RF inband and out of band noise. This results in the following definitions for sub-issue 24:

24: Switch Time RX to TX
less than 10 usec
time from transition of exposed Rx/TX control line till 90% full power is measured at the antenna

24a: TX power on ramp
greater than 5 usec
"the 10% to 90% TX power on ramp shall be greater than 5 usec"
Motion: Kamilo F moves to accept and close 24 and 24a(NOTE: after some friendly amendments are included)
Jan Boer seconds
15 for, 0 against, 0 abstain
the motion passes sub -issues 24 and 24a are closed

Adjourn for Lunch

802.11 DS PHY meeting 11 January 1994 PM

Paul Struhsaker secretary, Jan Boer chairman

discussion moves to item 23. There is debate among the members as to exact terminology and specific numbers for the issue. This results in the following definitions and descriptions:

23: TX power down

less than or equal to 5 usec

" Time from transition of the exposed RX/Tx control line till - 70dbm output power measured at the antenna port"

23a: TX power ramp down

-40 db in no less than 3 usec

23b: Minimum Tx to Rx turnaround time 25 usec

"no more than 25 usec measured transition of RX/TX control line"

Motion: Paul S moves to close 23

Maurice F seconds

5 for , 0 against, 0 abstain

the motion passes subissue 23 is closed

Motion: Paul S moves to close 23a

Maurice F seconds

5 for , 0 against, 0 abstain

the motion passes subissue 23a is closed

Motion: Paul S moves to close 23b

Maurice F seconds

4 for , 1 against, 0 abstain

the motion passes subissue 23b is closed

The discussion moves to CCA again. Maurice F is convinced a long term (1 sec to 5 00 msec) RSSI measurement versus short term (10 usec) with an offset (5 to 10 db) for a CCA test would be acceptable to the full PHY group. After more discussion the group decides to present this idea to the full PHY group. Paul S will present .

Maurice offers to write a submission for the full PHY group on this subject to back up our initial proposal. Several people in the group offer to help. Maurice says he will use Email to coordinate. The group concensus is that this will be our big push of an equitable CCA which 802.11 needs badly.

The meeting is adjourned

802.11 DS PHY meeting 12 January 1994 AM

Paul Struhsaker secretary, Jan Boer chairman

discussion moves to item 26, a number of changes and edits of the sub-issue ensue this results in the following:

26: Frame Capture Ratio
10 db

Given a continuous interferer at -50 dbm an error rate of 10^{-5} shall be maintained from a desired packetized signal source of -40dbm where both signals are of like DS modulation

Paul S move to close the issue as described Kamilo F seconds
9 for, 0 against, 0 abstain
the motion passes item 26 is closed

discussion of sub-issue 27. The major principle issue here was to change the E_b/N_o to 17 db for $Ber = 10^{-5}$ and to make sure that everyone understood the E_b/N_o definition. Kamilo F gave an excellent explanation of the subject and directed every one to look at his book on Micro radio testing written in conjunction with HP as a reference.

27 BER at specified E_b/N_o
17 db for $BER = 10^{-5}$

Motion: Paul S moves to close sub-issue 27 as described
Kamilo F seconds
9 for, 0 against, 0 abstain
motion passes sub-issue 27 is closed

Motion: Paul S moves to delete sub-issues 28 and 29 as DS PHY issues (they are joint MAC PHY issues)
Tom T seconds
7 for, 0 against, 0 abstain
the motion passes sub-issues 28 and 29 are deleted

Motion: Tom T move to close sub-issue 30 as presented in 93/232
Maurice F seconds
7 for, 0 against, 0 abstain
the motion passes sub-issue 30 is closed

discussion of sub-issue 31. this results in the following definition

31: VSWR
"devices shall withstand no damage and remain unconditionally stable over the range $0 \leq VSWR \leq \infty$ "
remove the comment currently in the sub-issue

Motion: Maurice F move to close the sub-issue as edited
Paul S seconds
5 for, 0 against, 1 abstains
the motion passes, sub-issue 31 is closed

Motion: Maurice F moves to close sub-issue 22
Paul S seconds
5 for, 0 against, 0 abstain
the motion passes, sub issue 22 is closed

Motion: Paul s moves to create sub-issue 22a
22a: Inband spurious emissions on Receive
-TBD dBm
Maurice F seconds
5 for, 0 against, 0 abstain

the motion passes, sub-issue 22a is created and remains open

Motion: Paul S open sub-issue 12 modify the current sub-issue as follows and close

title: Channel Spectrum Mask

remarks: includes all transmit spectral products, Maurice seconds

5 for, 0 against, 0 abstain

the motion passes, sub-issue 12 is closed as modified

Informal discussions between members commences

The meeting is adjourned

We meet again at the Plenary session in March

The following people attended the DS PHY meeting over the course of the January session:

Paul Struhsaker Aironet (Telxon)

Jan Boer AT&T (NCR)

Jeff Rackowitz INTERMEC

Maurice France TGF ENGINEERING

Kamilo Feher UC DAVIS

Michael Soderstrand UC DAVIS

William Chan UC DAVIS

Rommel Atienza UC DAVIS

Wei Gao UC DAVIS

Hussein Mehdi UC DAVIS

Steve Ludvik Teledyne

Zheu Wan UC Davis

Dean Kawaguchi Symbols

Tom Tsoulogainis Aironet (Telesystems)

