IEEE P802.N-WEST SG
Broadband Wireless Access Study Group
Approved Meeting Minutes
Grosvenor Resort, Lake Buena Vista, Florida

13 to 15 January, 1999

Wednesday, 13 January, 8:30 to 12:30

Opening Plenary

1 Meeting opened by Roger Marks at 8:45 on 13 January 1999 with George Fishel, Acting Secretary, standing by to take notes.

2 Overview by Roger on the current status and history of the N-WEST (National Wireless Electronic Standards Testbed)

    2.1 List of 51 supporting companies that support the N-WEST efforts

    2.2 Tutorial on Broadband Wireless Access on 10 November 1998 at IEEE 802 plenary meeting in Albuquerque NM

    2.3 Two Task groups formed in Albuquerque

        2.3.1 Systems Interface Task Group

        2.3.2 IF Interface Task Group

    2.4 Definition of scope

    2.5 Specific Outputs of Study Group

        2.5.1 PAR for specification of interoperable LMDS system (Local Multipoint Distribution Service)

        2.5.2 PAR on coexistence of BWA with other RF systems.

    2.6 Milestone Schedule

        2.6.1 LMDS PAR submitted to ExCom by February 5th

        2.6.2 First par approved by March 11th

        2.6.3 Second PAR submitted by June 4th

    2.7 Plan for the week

        2.7.1 Meetings on Wednesday, Thursday, and Friday

        2.7.2 Joint Session with BRAN HIPERACCESS

        2.7.3 This Week's Deliverables

            2.7.3.1 PAR on LMDS

            2.7.3.2 Committee Structure

            2.7.3.3 Leaders

            2.7.3.4 Relationship with BRAN HA

    2.8 A Q&A session followed.

3 Introduction of participants and some 60 persons were present in the meeting.

4 Reports on status of Task Groups

    4.1 Report by Jack Van der Star on system Interface Task Group

        4.1.1 System will be Spectral based and will allow the use of orthogonal channels that will allow migration into new technologies as they are developed.

        4.1.2 Interoperability

        4.1.2.1   May be too early to reach a decision on this subject at this time but we must move forward.

        4.1.2.2   Key areas of discussion:

          4.1.2.2.1 IF band plans

          4.1.2.2.2 Radio command Language

          4.1.2.2.3 Connectors, 75 ohm "F" Connector

          4.1.2.2.4 Powering, looking at the DAVIC Specification of 36 volts 1 amp

          4.1.2.2.5 Local Oscillator Reference signals

          4.1.2.2.6 Linear Optics

4.2 Report by Jay Klein on activity in the IF interface study group

    4.2.1 Framework

    4.2.2 Philosophy

    4.2.3 The LMDS case

    4.2.4 Channelization Philosophy

        4.2.4.1   Channel Plan

          4.2.4.1.1 US Plan

          4.2.4.1.2 ETSI Plan

        4.2.4.2   Spectrum use Coordination

          4.2.4.2.1 Sharing Common hub sites

        4.2.4.3   Power control

        4.2.4.4   Antenna

          4.2.4.4.1 Patterns

          4.2.4.4.2 Polarization

        4.2.4.5   Statement of Work in the IF interface study group

5 PAR development activity

  5.1 Roger chaired the session working on development of the LMDS PAR

    5.1.1 Overview of the five criteria that must be contained in a PAR

    5.1.2 Overview of PAR language "shall" and "should"

    5.1.3 5 year life of PAR

    5.1.4 Scope and technical boundaries

    5.1.5 Purpose

    5.1.6 Intellectual property issues and an explanation of how IEEE deals with the issues

    5.1.7 Other PAR issues

  5.2 An example of a current PAR prepared by the WPAN group in IEEE 802.11.

6 Meeting adjourned for lunch at 12:30.

Thursday, 14 January 8:30 to 17:30

PAR Editing Session

1 Meeting opened by Roger Marks at 8:45 on 14 January 1999 with George Fishel, Acting Secretary, standing by to take notes.

2 Roger began by stating that the agenda for the day was to prepare the first PAR to go to ExCom. He presented the criteria for completing the document.

  2.1 Definitions were given for:

    2.1.1 Scope = what

    2.1.2   Purpose = why

2.2 Working through PAR form line by line.

2.3 It was determined that, for item #4 on the PAR form, this should be a standard and not a recommendation.

---

3 Motion #1: The document produced will be a standard. Motion by Brian Petry. Seconded by: Jim Mollenauer

---

4 Discussion on the motion

5 Motion to the floor for vote

6 Motion #1 approved by unanimous vote

    6.1 Debate started on the title for the new standard. It soon became evident that opinion varied widely on what should be contained in the title

---

7 Motion # 2 to move on into the scope of the document and come back to the title later. Motion by: Jim Mollenauer Seconded by: Frank Brand

---

8 Discussion on the motion

9 Motion to the floor for vote

10 Motion #2 Approved 32-8-6

11 Motion #4

12 Discussion on the scope statement for the project.

    12.1 Frank Brand made a presentation on a possible scope statement.

---

13 Motion #3: the scope statement presented be a starting point for the scope statement Motion by: Frank Brand Seconded by: George Eisler

---

14 Motion #3 to the floor for a vote

15 Motion carries 31-3-1

---

16 Motion #4: to have "air interface" replace "RF physical" and data link. Motion made by: Hossein Izadpanah Seconded by: Jay Klein

---

17 Motion #4 to the floor for a vote

18 Voice vote motion carries with one nay vote.

    18.1 A motion was proposed to add "components of" and withdrawn

---

19 Motion #5: to remove the RF layer

---

20 Motion #5: carries unopposed by voice vote.

---

21 Motion #6: change the "data link" to "media access control layer" Proposed by: Jim Mollenauer Seconded by: Ray Sanders.

---

22 Motion #6 carries by voice vote.

23 Motion #7: to add the words "point to multi-point" to the scope statement. Proposed by: Jay Klein Seconded By: Brian Petry.

24 Motion #7 carries to add the line 24-3-10

24.1 This is the status of the scope statement at this point:

25 Scope: This standard includes specifications for the air interface, including the physical layer media access control layer for fixed point to multi-point, wireless, broadband access system operation above 10 GHz. In addition, a recommendation is made for the band plan for LMDS block A.

26 Motion #8: to drop "LMDS" from the text and change "band plan" to "optimum"

26.1 No second on motion; Motion #8 dropped

27 Coexistence issues

27.1 Question:
    27.1.1 Separate PARs for:
        27.1.1.1   Coexistence
        27.1.1.2   Global justification of bandwidth
    27.1.2 First PAR focuses on LMDS spectrum
    27.1.3 What is the meaning of coexistence?

27.2 Coexistence – Identifying emissions rules or etiquette and development of guidelines, etc. to guide near term development and the developing N-WEST standard will accept these emissions as a given environment and successfully operate in their presence.

    27.2.1 Plan of work should be developed by tomorrow
        27.2.1.1   First PAR will focus on LMDS with a single PHY.
        27.2.1.2   Focus limited

28 Motion #9: To exclude satellite platforms from the standard. Motion by: Brian Petry Seconded by: Rami Hadar

29 Motion #9 Passes by unanimous voice vote.

30 Motion #10: PAR will specifically include stratospheric platforms. Motion by: Gene Robinson and Seconded by: Jim Mollenauer

31 Motion #10 fails as technical 16-14-4 75% needed on technical motions.

32 Motion #11: To exclude stratospheric platforms from standard. Motion by: Brian Petry and Seconded by: Allan Evans.

33 Motion #11 fails 1-31-0

33.1 Frequency Banding

---

34 Motion #12: To strike the last sentence in the proposed scope that reads "In addition, a recommendation is made for the band plan for LMDS Block A." Motion by: Doug Gray and seconded by: Roy Hebert

---

35 Motion #12

---

36 Motion #13: that we limit the maximum frequency in the PAR to 66 GHz. Motion by: Gene Robinson and seconded by: Asif Rahman

---

37 Motion # 13: The chair ruled the voice vote passed with 2 opposing votes.

37.1.1 Discussion on the lower limit of frequency band followed. Current lower limit is at 10 GHz.

38 Meeting adjourned for the day at 17:15.

Friday, 15 January, 8:30 to 17:30
PAR Editing Session

39 Meeting opened by Roger Marks at 8:30 on 15 January 1999 with Scott Marin, Acting Secretary, standing by to take notes.

40 Frequency banding continued
40.1 The current US allocation is in the 27 to 32 GHz band.

---

41 Motion #14: to adopt the scope statement as presented and modified. Motion made by Leland Langston and seconded by: Gene Robinson

---

42 Motion #14 carries by voice vote.

43 Title
43.1 Discussion on title continues from the previous day.

---

44 Motion #15: Proposal for title "Standard For Broadband Wireless Access Systems" Proposed by: Gene Robinson and seconded by Tom Magill.

---

45 Motion #15 passes 24-0-0

46 Purpose
46.1 The purpose statement should contain why we are producing the standard.
46.2 29 companies hold licenses for the technology in the US.
46.3 The technology has been proposed in 28 countries.
46.4 Current purpose:

47 Purpose:

48 To enable rapid worldwide deployment of innovative, cost effective and interoperable equipment and systems.

49 Patents and IP PAR item 8

    49.1 Roger requests that all companies submit patent disclosure information in accordance with IEEE rules.

    49.2 A list of companies will be inserted for item 8.

    49.3 Roger requests proposals for task groups.

    49.4 Session breaks for lunch.

Friday 15 January, 1999, Orlando Florida 13:15

50 Meeting opened by Roger Marks at 13:15 on 15 January 1999 with Scott Marin, Acting Secretary, standing by to take notes.

51 Discussion: changes to draft scope

52 Motion#16: Jim Mollenauer/Gene Robinson to add the term "Multiple Services" into the scope.

53 Motion#16:Voice Vote: passes by all

    53.1 Discussion: e-mail finalization of the project authorization request (PAR). Discussion points: N-WEST reflector. Should not open discussion to revisiting items voted on and passed during the Orlando meeting. Is an e-mail version of a meeting official and possible? Let's get on with finalizing the PAR.

    53.2 Discussion: listed some potential Task Groups: Internet Protocol (IP), Media access layer (MAC), Systems, RF interface, Terminal/Indoor Unit, Physical (PHY), Coexistence

    53.3 Discussion: PAR

    53.4 Discussion: study group leadership

---

54 Motion #17: Remi Chayer/Allan Evans, Motion to accept Roger Marks as official reporter.

---

55 Motion#17: Voice passes by all.

    55.1 Roger to list title as Chairman of study group on PAR

    55.2 Discussion. Misc. PAR paragraphs

    55.3 PAR choice select: Full-use 5-year cycle. No disagreement.

    55.4 Target completion date to IEEE RevCom:

---

56 Motion #18: Gene Robinson/Jim Mollenauer, to accept the date of Jan 31, 2001 as the target date for submission to IEEE RevCom.

---

57 Motions#18:Voice vote; some opposed. Show of hands: 16/4/3. Passed.

---

58 Motion#19: Jim Mollenauer/Gene Robinson. To accept scope as currently captured in Roger Marks' Laptop.

---

59 Motion#19: Voice passes by all.

    59.1 Discussion on Purpose section of PAR:

    59.2 Discussion: other standards of similar scope

60 Motion #20: Jim Mollenauer/George Eisler, to include only ETSI BRAN Hyperaccess in section 9.

61 Motion #20: Voice passed by all.

62 Motion #21: Gene Robinson/Jim Mollenauer, to adopt the purpose as currently captured in Roger Marks' laptop.

63 Motion #21:Voice passed by all.

   63.1 Discussion: Paul Khanna has volunteered as Liaison with ETSI BRAN.
   63.2 Discussion: copyright. ETSI specs are now freely available on web. Copyrights can restrict adoption of standards.

64 Motion #22: Jim Mollenauer/ Brian Petry to approve the PAR, as captured in Roger Marks' laptop, subject to the completion by e-mail of items not yet let voted on. (The following paragraphs have been voted on: Date-to-RevCom, Scope, Title, Purpose, and related-standards-groups have previously been accepted, other items may have been voted on as noted in George Fishel's minutes).

65 Motion #22: Passed 20/0/2

66 Discussion: 802 Five Criteria (5Cs).
   66.1 Jim Mollenauer showed draft 5Cs
   66.2 Discussion: 5Cs Balanced cost.
   66.3 Discussion: compatibility: George Eisler submitted text: The proposed standard will conform to 802 with the possible exception of the Hamming distance.
   66.4 Discussion: size of BWA coverage area is a Metropolitan area
   66.5 Discussion: economic feasibility

67 Motion #23: George Eisler/ Leland Langston, motion to accept the 5Cs as currently saved on Jim Mollenauer's laptop

68 Motion #23: Voice vote passed by all.

69 Discussion task groups:
   69.1 Jay Klein volunteered as a leader for the PHY
   69.2 Jim Mollenauer volunteered as MAC leader.
   69.3 Gene Robinson proposed a three-group structure: Systems, RF interface, and Terminal/Indoor Unit.

70 Motion #24: Allen Evan/Jim Mollenauer, to form the co-existence group.

71 Motion #24: Voice passed with one nay.

72 Motion #25: Jim Mollenauer/Allen Evan, to form the systems requirement task group.

73 Motion #25: Voice vote passed by all.

74 Motion #26: Jay Klein/ Asif Rahman, Motion to <u>not</u> form an IF interface group at this time.

75 Motion #26: Passes 16/0/2

76 Motion #27: Gene Robinson/Leland Langston, to form a PHY group that works on an air interface tasks including frequency plans 28 GHz and channelization/band plan.

77 Motion #27: passed 7/5/2

78 Motion #28: Jim Mollenauer/ Leland Langston, to form a MAC group.

79 Motion #28:11/2/1 passes.

80 Motion #29: Gene/ Remi Chayer: for Leland Langston to coordination Co-existence group.

81 Motion #29: Voice passes by all.

82 Motion #30: Jim Mollenauer/ Allan Evans: for Gene Robinson to coordinate systems group.

83 Motion #30: Voice vote, unanimous. Pass.

84 Motion #31: Gene Robinson/Brian Petry: for Jim Mollenauer to coordinate the MAC group.

85 Motion #31: Voice vote, unanimous. Pass.

86 Motion #32: Remi Chayer/Leland Langston, for Jay Klein to coordinate the PHY group.

87 Motion #32: Voice vote, unanimous. Pass.

88 Motion #33: Jim Mollenauer/ Leland Langston, for Scott Marin to be Secretary of 802.N-WEST Study Group.

89 Motion #33: Voice vote, unanimous. Pass.

90 Motion #34: Leland Langston/Remi Chayer, to appoint Paul Khanna as liaison from 802.N-WEST to ETSI BRAN.

91 Motion #34: Voice vote, unanimous. Pass. (Note: earlier in the day, ETSI BRAN passed a similar motion for Paul to be the liaison from ETSI BRAN to 802.N-WEST)

92 Discussion: marketing/communications/public relations.
   92.1 Discussion: people on groups: 802.N-WEST participant should give business cards and/or somehow get word to the task group leaders that you'd like to participate.

93 Discussion: work plan: Task group leaders should put out an open call for system requirements and other contributions. 802.N-WEST members should submit contributions at least one week before the next meeting to allow time for distribution and review.

94 Discussion: Contributions received by Systems and Co-existence task groups should be distributed to the MAC and PHY groups.

95 Discussion: document process: move toward 802 documentation procedure, including Adobe format. Keep documents in Microsoft Word for now. System Requirements and Coexistence Groups should number documents.

96 Discussion: Send minutes, notes, and files of record to Roger Marks ASAP. Roger will post on web page. (Action required, at a minimum, by: Scott Marin (minutes), George Fishel (minutes), Jim Mollenauer (5Cs), Roger Marks (PAR).

97 Discussion: Future meetings. 802 meeting schedule posted on web: March, Austin TX (the next 802.N-WEST meeting has been set in conjunction with this meeting). Additional 802.N-WEST meetings have not yet been set, but will meet with 802 in July (Montreal) and November (Hawaii). Other options, with offers of free space: WCA'99 (New Orleans, July 12-14), RAWCON (Denver, August 1-4; meet on August 5-6). Possibility: MTT Conference (Anaheim, June 14-18).

98 Motion #35: Remi Chayer/Gene Robinson, to adjourn

99 Motion #35: Voice vote, unanimous. Adjourned at 17:20.

Acting Secretaries:
  George Fishel grfishel@amp.com
  Scott Marin smarin@boschtelecominc.com