



Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
Title	Minutes of 802.16 Session #7
Date Submitted	2000-05-17 (Revision 1: 2000-07-10)
Source(s)	Scott Marin Voice: 972-852-7109 Fax: 972-852-6760 802.16 Secretary E-mail: smarin@spectrapoint.com
Re:	802.16 Session #7 (Gaithersburg, Maryland, U.S.A., 1-5 May 2000)
Abstract	This document records the minutes of 802.16 meetings held at 802.16 Session #7
Purpose	To record progress and decisions of the Working Group.
Notice	This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate text contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.
Patent Policy and Procedures	<p>The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version 1.0) <http://ieee802.org/16/ipr/patents/policy.html>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."</p> <p>Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <mailto:r.b.marks@ieee.org> as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site <http://ieee802.org/16/ipr/patents/letters>.</p>

**Minutes of 802.16 Session #7
An Interim Session of the IEEE 802.16
Working Group on Broadband Wireless Access
Hilton Hotel, Gaithersburg, Maryland, USA
1 to 5 May, 2000**

Monday, May 1, 2000, Opening Plenary

Opening of Session #7

Call To Order, Welcome, and Introduction of Officers

15:17 Call to order by Roger Marks (See Appendix A for the presentation).

Schedule of meeting for the week

Roger Marks introduced the schedule and meeting locations for the week.

Motion#1, Jay Klein, 2nd Jung Yee, to amend the proposed agenda to have the FEC tutorial after the FEC session.

6 for, 11 against, Motion #1, fails.

Roger Marks proposed to move the regulatory session to Monday at 7:00-8:00.

Without objection, the schedule (Appendix A) was adopted.

Roger Marks announced an editorial meeting on Thursday at noon. IEEE staff editors would be present and all editors from task group documents are encouraged to attend.

Agenda Approval for Opening and Closing Plenaries

Roger Marks introduced the opening plenary agenda (Appendix A). Without objection, the agenda was approved.

Roger Marks introduced the closing plenary agenda (Appendix A). Without objection, the agenda was approved.

Approval of the Minutes from Session #6

Roger Marks asked if anyone had any changes or corrections to the Session #6 minutes (document IEEE 802.16-00/12). Without objection, this document was approved.

Membership and Rights Discussion

Roger Marks reviewed the rules to attain, retain, and lose voting membership as stated in the Chairman's Opening Plenary Presentation (Appendix A).

Roger Marks noted that a new category, called Observer, was established at Session #6, which is anyone what has participated in a recent 802.16 session. Roger Marks also noted that he has not yet modified the web site to permit observers to have access to the password-protected section, but he plans to do so.

Roger Marks reminded the group the participation at IEEE standards activities is by individual and not company.

Roger Marks reminded participants the certain types of discussions are to be avoided to be in compliance with legal and antitrust practices.

Roger Marks discussed the IEEE Sponsor ballot process.

Roger Marks noted that 802.16 has 76 members and that a vote at Session #7 requires a quorum (i.e. 38 members).

Other Announcements

Attendance Book, Voter Stickers, Flash Memory Card, Server

Scott Marin, 802.16 secretary, introduced the attendance book and voter sticker (token) processes and noted that, according to a decision of the Chair, attendance at only 7 of 11 meeting intervals would be required to meet the 75% criteria. The report on attendance for Session #7 is in Appendix C. The Chair commented that the tutorial session is a scheduled session but that the regulatory affairs meeting is not a scheduled session.

Scott Marin introduced the flash memory card as the process for distributing and collecting documents. Roger Marks has put as much of the 802.16 web page and e-mail reflector archives as would fit in 32 Mbytes. As usual, document distribution for the meeting will be via the flash memory card and not hardcopy. George Fishel will keep the flash memory master configuration and be the librarian. Files should be submitted to George.

Scott Marin announced a policy of submitting files at least 2 hours prior to presentation, and there was no objection.

Scott Marin announced that the plenary is being taped to improve the accuracy of the minutes.

Meeting Host, Registration, Logistics, and Wednesday Dinner Information

Roger Marks thanked Hughes Network Systems and specifically Yunsang Park for hosting Session #7. Yunsang Park welcomed everyone to Gaithersburg and urged anyone with logistical issues to see him.

802.16 Chairman's Report and 802.16 Objectives

Roger Marks presented slides (Appendix A) on the objectives, process, and organizational structure of the 802.16 working group. He noted that a study group was approved at Session #6 on "Wireless High-speed Unlicensed Metropolitan Area Networks." He also noted that he has asked the IEEE-SA legal counsel to trademark WirelessHUMAN™ and WirelessMAN™ and has registered the domain names WirelessHUMAN.org and WirelessMAN.org. He noted that the 802.16 web site is at <http://ieee802.org/16>.

IEEE Patent Policy

Roger Marks read the IEEE 802.16 patent policy (see slides in Appendix A presentation).

Roger Marks noted several issues with the patent policy and encouraged everyone to submit information on known patents as required by the policy.

802.16.1 Report by the Air Interface Task Group

Roger Marks, acting for Lou Olsen, summarized the development plan (document IEEE 802.16-99/05) and the schedules for the week, which are hyperlinks in the meeting agenda file <http://ieee802.org/16/meetings/mtg07/agenda.html>.

Roger Marks noted that the selection of drafts is considered a technical vote, which requires a 75% approval to pass.

Roger Marks presented a draft agenda for the PHY discussion
<http://ieee802.org/16//meetings/mtg07/dot1tue.html>.

Motion#2, Gene Robinson, 2nd George Fishel to approve the PHY agenda as presented which has 20 minutes to present and 10 minutes for discussion.

Jay Klein asked for, and was granted, the floor to present an alternative genda for the Monday evening 802.16.1 FEC program (Appendix A).

Motion#3 Jay Klein, 2nd Jim Mollenauer, to amend to accept Jay Klein's proposed agenda for the Monday evening 802.16.1 FEC program.

Friendly amendment proposed by Moshe Ran, to change the agenda presented by Jay Klein. Jay Klein accepted.

11/9 motion#3 passes.

Without objection, Jay's agenda as amended by Moshe Ran is adopted (see Appendix A, Monday Evening Agenda FEC Session)

802.16.2 Report by the Coexistence Task Group

Leland Langston, 802.16.2 Chair, presented a summary of the group and noted recent working meeting in Montreal. (Appendix A).

Rebecca Chan has reformatted the draft coexistence document into IEEE format.

Leland Langston commented that it is necessary to revise the timeline.

802.16.3 Report by the Sub11 Task Group

Brian Kiernan, chairman of 802.16.3, noted that the 802 Executive Committee approved the PAR (<http://ieee802.org/16/tg3/par/index.html>) and that the new task group will have its first official meeting. The title of the PAR is "Telecommunications and Information Exchange Between Systems - LAN/MAN Specific Requirements - Air Interface for Fixed Broadband Wireless Access Systems in Licensed Bands from 2 to 11 GHz" but the task group is commonly referred to as the Sub11 task group.

Brian Kiernan presented the draft agenda for Session #7 (Document IEEE 802.16.3-00-04) which included some joint and some separate meetings with the WirelessHUMAN™ Study Group.

Brian Kiernan commented that the primary purpose of the meeting is to resolve comments submitted in response to the draft Functional Requirements document.

Report of the WirelessHUMAN™ Study Group

Durga Satapathy presented a summary including an agenda for the meetings (see Appendix A).

Durga Satapathy announced plans to participate in joint 802.11 and 802.15 session in Seattle next Monday.

Report from the Regulatory Affairs Committee

Gene Robinson, Regulatory Affairs Committee chair, provided a summary (Appendix A).

Moderator for FEC session

Roger Marks announced that Roger Durand will be the moderator for the FEC session tonight

Charge to groups

Roger Marks charged the task groups per the foil in the chairman's presentation(Appendix A).

ETSI BRAN HIPERACCESS

Roger Marks noted that ETSI BRAN HIPERACCES is meeting alongside 802.16 Session #7.

Roger Marks presented a proposed agreement for working with and sharing information with ETSI.

Roger Marks asked for a straw pole. "Who's in favor of standards that are common with ETSI BRAN HyperAccess?" Several people indicated support, 1 opposed.

Roger Marks asked "Who's is in favor of a harmonized standard even if it takes longer to get the 802.16.1 done?" Several people indicated support.

ITU-R Cooperation

Roger Marks noted that a letter (Document IEEE 80216lc-00/03) had been received from ITU-R that recognizes the IEEE 802.16 project and notes willingness to exchange material under certain conditions.

Other Business

Leland Langston noted that Keith Doucet, prior vice-chair of 802.16.2, has resigned, which creates an opening for the vice-chair position.

Future Sessions.

Roger Marks noted that future sessions are on the web site.

Adjournment of Opening Plenary

Without objection, the meeting is adjourned.

Friday, May 5, 2000, Closing Plenary

Opening Remarks

Call to order

8:15 Roger Marks called the meeting to order.

(See Appendix B, for the closing plenary agenda and chairman's presentation)

Approval of Closing Plenary Agenda

Roger Marks presented a modified agenda (Appendix B), which was approved without objection.

Announcements

Documents

George Fishel asked that documents be submitted to the librarian.

Secretary

Regarding Ethernet LAN connectivity at meetings, the consensus was to bring the server and continue to improve the process. An attempt will be made to set up an wireless (802.11) capable server at the July meeting.

Scott Marin announced that the plenary is being taped to improve the accuracy of the minutes.

Legal

Roger Marks reminded attendees of IEEE 802.16 patent policy that was read at the opening plenary.

802.16.1 Air Interface Specification

802.16.1 PHY

Jay Klein reported that a proposal (IEEE 802.16.1pc-00/29), which merges proposals IEEE 802.16.1pc/20r1 and IEEE 802.16.1pc/19, was adopted by 802.16.1 with more the 75% support.

Alan Evens said he would like to call the quorum question regarding yesterday's 802.16.1 meeting.

Roger Marks explained that at least half of the members must be present for a quorum. The 802.16.1 meeting was a task group meeting. The task group doesn't have members. Had the meeting been a working group meeting, there was sufficient attendance for a quorum. At the present, the task group has adopted the draft and the working group has not yet been asked to accept the draft.

802.16.1 MAC

Jung Yee reported an issue with lots of simulation work left to be done. The ad hoc MAC simulation committee, which was formed at last meeting, had an unclear timeline and the work plan needs refinement.

Jung Yee reported good attempts by participants to merge MAC proposals, but neither group made a motion to go forward at the 802.16.1 meeting. Instead, an 802.16.1 motion was adopted to merge proposals and present a merged input at July's meeting Session #8.

Motions

Motion# 4, Gene Robinson, 2nd George Fishel, to go forward and put the existing PHY out for comment before the July meeting.

27 for, 1 against, 1 abstentions, Motion#4 passes.

FEC Ad Hoc Committee

John Liebetreu asked for volunteers to serve on the 802.16.1 FEC Ad Hoc committee, to be conducted mostly by e-mail. Eric Jacobsen and John Liebetreu has agreed to serve as facilitators.

Eric Jacobsen presented a draft call for contributions (document 802.16.1p-00/06) with a 5 June 2000 submission deadline.

The following people expressed interest in the FEC Ad Hoc Committee: Zion Hadad, Jeff Foerster, Tom Kolze, Moshe Ran, Naftali Chayat, Jay Klein, and Lars Lindh.

Eric Jacobsen asked that everyone should register interest by sending him an e-mail.

Roger Marks asked for a volunteer to edit the PHY document. Nobody volunteered.

Interim-Interim meeting in June

Roger Marks asked for interest in holding a interim-interim meeting possibly in Boulder.

Motion#5, Arun Arunachalam, 2nd Jay Klein, to hold an 802.16.1 meeting beginning at 1pm May 30 and ending at 1pm Friday during Memorial Day week (May 30 to June 2)

Jim Mollenauer proposed a friendly amendment to shorten the meeting to start on Tuesday and end on Thursday. The amendment was not accepted by Arun Arunachalam.

16 for, 3 against, Motion#5 passes.

Roger Marks ruled that the meeting is a task group meeting and not an official working group meeting; therefore, the meeting will not count for voting membership.

802.16.2 Coexistence Task Group

Leland Langston presented a summary (Appendix B) and noted that an interim meeting was proposed in Ottawa.

The timeline has changed with a revised release date of the practice in May 2001.

Leland Langston presented a letter to be forwarded to ETSI TM-4 (Appendix B). Roger Marks asked that the correct coexistence title be used in the letter.

Without Objection, the letter is approved for submission to the 802 Executive Committee subject to the corrections requested by Roger Marks.

Leland Langston presented a revision of the 802.16.2 timeline (IEEE 802.16.2-00/02r1) as shown in Appendix B.

802.16.3 Sub11 Task Group

Brian Kiernan presented a summary (Appendix B)

WirelessHUMAN™ Study Group

Durga Satapathy presented a summary report (Appendix B) that included a draft letter for submission to the US Delegation to WRC2000

Roger Marks encouraged the study group to get on the agenda at the July 802 meeting to present a tutorial.

Durga Satapathy presented the draft letter addressed to Dr. Schoettler, Head of the US Delegation to the WRC2000.

Motion#6, Durga Satapathy, 2nd Roger Durand, to approve the letter for submission to Dr. Schoettler.

3 for, 19 against, Motion#6 fails.

Regulatory affairs

Gene Robinson reported that 15 people met, got to know each other, were assigned work assignments, and the objective is to pull together the information for another meeting in July.

Call for Volunteers

Roger Marks asked for volunteers for the following positions:

802.16.2 Vice Chair, no volunteers.

802.16.1 PHY Editor, Jeff Foerster expressed an interest and Roger Marks will take Jeff's offer under advisement.

802.16.1 MAC Chair, Possible interest from Carl Eklund.

Liaison with ETSI BRAN HIPERACCESS

Roger Marks reported that a lunch meeting was held and a draft Annex **Item 4** to the IEEE-SA/ETSI agreement was prepared. Roger Marks reported an evening meeting on Wednesday night was held with ETSI-BRAN-HA members and the draft annex was refined.

Per Emanuelsson, Vice Chair of ETSI BRAN, indicated that ETSI-BRAN-HA approved the document at yesterday's meeting with the change that the right for liaisons to vote has been deleted.

Motion#7, Brian Kiernan, 2 nd Demos Kostas, to accept draft Annex Item 4 as presented with the phrase "including the right to vote" deleted.
--

17 for, 1 against, 2 abstention, Motion#7 passes. New Business

Brian Petry indicated his plans to submit a contribution including database files that explain the document editing process he's been using so that other volunteers can also use the process.

Naftali Chayat offered to hold the January 2001 Session #11 in Tel Aviv, Israel. Roger Marks encouraged Mr. Chayat to submit a specific proposal for consideration at Session #8.

Future Session

July 10-13, 2000, Session #8 with the possibility to meet on Friday, 14 July, as well.

Adjourn

Without objection, Session#7 is closed.

Respectfully,

Scott Marin
802.16 Secretary

Appendix A, Opening Plenary Presentations Agenda for the Week

	Morning		Afternoon	Evening		
Mon 5/1			802.16 Opening Plenary 15:00-17:00 Crystal Ballroom	Turbo Product Code Tutorial 19:00-20:00 Crystal Ballroom	Special FEC Session 20:30-22:00 Crystal Ballroom	
				Regulatory Affairs Committee 19:30-20:30 Boardroom		
Tue 5/2	802.16.1 PHY Discussions: Darnestown/Gaithersburg		802.16/BRAN Joint Meeting 19:00-20:30 Salon A/B/C		COFDM Tutorial 20:30-22:00 Salon A/B/C	
	802.16.2: Rockville					
	802.16.3/ WirelessHUMAN: AN: Salon B/C	802.16.3: Salon B				
		WirelessHUMAN : Salon C				
BRAN-HA Opening Plenary 8:00-10:00: Salon A	BRAN-HA PHY : Salon A					
	BRAN-HA DLC : Potomac					
Wed 5/3	802.16.1 MAC Discussions: Darnestown/Gaithersburg		Reception and Dinner <i>hosted by</i> <i>Hughes Network Systems</i> 18:15-21:30 Grand Ballroom			
	802.16.2: Rockville					
	802.16.3/ WirelessHUMAN : Salon B/C					
	BRAN-HA PHY : Salon A					
BRAN-HA DLC : Potomac						
Thu 5/4	802.16.1 Modeling Discussions: Darnestown/Gaithersburg		802.16.1 Selection of Drafts: Salon A/B/C			
	802.16.2: Rockville					
	802.16.3: Salon B WirelessHUMAN AN: Salon C	802.16.3/ WirelessHUMAN AN: Salon B/C				
		BRAN-HA PHY : Salon A				
	BRAN-HA PHY : Salon A					BRAN-HA PHY : Darnestown/Gaithersburg
BRAN-HA DLC : Potomac						
Fri 5/5	802.16 Closing Plenary 8:00-10:30 Crystal Ballroom	802.16/ BRAN-HA Joint Meeting 11:00-12:30 Crystal Ballroom				

Opening Plenary Agenda

802.16 Session #7: Opening Plenary Meeting Agenda

Monday, 1 May 2000, 15:00-17:00

Opening of Session #7		15:00
Call to Order	Marks	I
Welcome	Marks	I
Schedule of meetings for the week	Marks	V
Thursday Editorial Meeting: noon	Marks	I
§02.16 Opening and Closing Plenary Agendas	Marks	V
Membership and Voting		15:10
Rights of membership	Marks	I
Obtaining and Retaining Membership	Marks	I
Individuality and Anti-Trust	Marks	I
Voting and Quorum Requirements	Marks	I
Members and Potential Members	Marin	I
Voting Procedures and Voting Tokens	Marin	I
Other Announcements		15:20
Attendance list	Marin	I
Librarian: Document collection and distribution: flash card, CD, Ethernet	Fishel	I
Registration	Marks	I
Logistics: rooms, breaks, etc.	Park	I
Wednesday Social and Dinner	Park	I
IEEE 802.16 Patent and Copyright Policies (deferred to Chair's Report)	Marks	I
Approvals		15:33
Minutes of Session #6 (IEEE 802.16-00/12)	Marks	V
Chair's Report		15:35
§02.16 Status Report	Marks	I
Intellectual Property Policies and Procedures	Marks	I
§02 and IEEE-SA Updates	Marks	I
§02.16.1	Olsen/Marks	15:45
Status and Plans		I
Agenda Approval		V
§02.16.2	Langston	16:00
Status and Plans		I
Agenda Approval		V
§02.16.3	Kieman	16:15
Status and Plans		I
Agenda Approval		V
WirelessHUMAN™ Study Group	Satpathy	16:30
Status and Plans		I
Agenda		I
Regulatory Affairs Committee	Robinson	16:40

Closing Plenary Agenda

802.16 Session #7: Closing Plenary Meeting Agenda

Friday, 5 May 2000, 08:00-10:30

<i>Opening</i>		08:00
Call to Order	Marks	I
Approval of Modified Closing Plenary Agenda	Marks	V
<i>Announcements</i>		08:05
Registration	Marks	I
Attendance	Fishel	I
Documents	Fishel	I
Logistics	Park	I
Other	Marks	I
<i>802.16.1</i>	Olsen	08:15
Review of Activities		I
Motions approved by 802.16.1		V
Other motions regarding 802.16.1 draft		V
Plans		D
<i>802.16.2</i>	Langston	09:00
Report		I
Plans and Timetable (including Letter Ballot schedule)		I
Motions		V
<i>802.16.3</i>	Kiernan	09:15
Report		I
Plans		I
Motions		V
<i>WirelessMAN™ Study Group</i>	Satapathy	09:30
Report		I
Plans		I
Motions		V

Chair's Opening Plenary Presentation

IEEE 802.16 Session #7: Opening Plenary Meeting

IEEE 802.16 Presentation Submission Template (Rev. 8)

Document Number:

None

Date Submitted:

2000-05-01

Source:

Roger Marks
NIST
325 Broadway, MC 813.00
Boulder, CO 80303

Voice: +1-303-497-3037

Fax: +1-303-497-7828

E-mail: marks@nist.gov

Venue:

Session #7, Opening Plenary

Base Document:

None

Purpose:

This presentation is to be inserted in the Session #7 minutes.

Notice:

This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release:

The contributor grants a free, irrevocable license to the IEEE to incorporate text contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.

IEEE 802.16 Patent Policy:

The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version 1.0) <<http://ieee802.org/16/jpr/patents/policy.htm>>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."

Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <<mailto:r.marks@ieee.org>> as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site <<http://ieee802.org/16/jpr/patents/letters>>.

IEEE 802.16 Working Group on Broadband Wireless Access (BWA)

Session #7 Opening Plenary

1 May 2000

3:00-5:00 pm

Session Opening

- Call to Order
- Welcome

802.16 Officers

- Chair: Roger Marks
- Vice Chair: Lou Olsen
- Secretary: Scott Marin

Welcome

- Record attendance
- Many new participants
- 802.16 Culture (ala IEEE 802 culture)
 - Engineering Membership
 - Seeking Technical Consensus
 - Open (even by 802 standards)
 - Procedural and Fair
 - Contribution-Driven
- 802 is extremely successful
 - 802 is following the model
 - excellent record of progress

Schedule and Agenda

- Schedule of meetings for the week
 - Chair asks for unanimous consent to approve
- Presentation of 802.16 Opening and Closing Plenary Agendas
 - Chair asks for unanimous consent to approve

Approval of Minutes

- **Chair asks unanimous consent to approve Document IEEE 802.16-00/12 (Minutes of Session #6)**

Definitions (in brief)

- **Participation:** attended at least 75% of the meetings held during in Session
- **802.16 LMSC Plenary Session:** 802.16 Session coinciding with an 802 LMSC Plenary Session (March, July, and November)
- **Recent 802.16 Session:** one of the previous four 802.16 LMSC Plenary Sessions, excluding the current one, or another 802.16 Session that took place with the period of time spanned by those four sessions

Rights of All

- **To receive meeting notices and minutes.**
- **To subscribe to the 802.16 Email Reflector.**
- **To examine documents, unless copyright concerns prohibit it.**
- **To contribute documents in response to a Call for Contributions in accordance with rules therein.**
- **To attend and participate in 802.16 meetings, if registered.**

Acquiring Membership

- Membership is granted at each 802.16 LMSC Plenary Session to those in attendance who have participated in at least two recent 802.16 Sessions, one of which was an 802.16 LMSC Plenary Session. At that time, full membership rights begin immediately upon the request of the qualifying potential member.
- At the end of each 802 LMSC Plenary Session, membership is lost by those who have not participated in at least two recent 802 Sessions, one of which was an 802 LMSC Plenary Session.

Observers

- **Those who have participated in a recent 802.16 session.**

Exclusive Rights of Membership

- **To make or second a motion at any meeting of 802.16 or its subsidiaries.**
- **To vote, if and only if present, at any meeting of 802.16 or its subsidiaries.**
- **To vote by email on any issue involving 802.16 or its subsidiaries.**
- **To lodge complaints about Working Group operation with the Executive Committee.**
- **To petition the Executive Committee in writing.**

Rights of Members & Observers

- To examine the votes of Working Group members.
- To examine the member contact database.
- To examine draft standards.
- To submit comments as part of the letter ballot process.

Legal and Anti-Trust

- Any discussions that relate to the validity or cost of patent use shall be avoided.
- Any discussions or any material relating to an ongoing litigation shall be avoided.
- Any discussions of pricing or issues that would violate US antitrust laws shall be avoided.

Sponsor Ballot Pool/Group

- Balloting **Pool** is being constructed
- Future 802.16 draft standards will be balloted by a Balloting **Group** drawn from members of the 802.16 Balloting **Pool**.
- To join the 802.16 Balloting **Pool**, use the form on the web.
- Members of IEEE Standards Association [IEEE or CS + \$10] can participate in Ballot **Group** without paying special fee

Individuality

- In IEEE standards meetings, participation is by individual
 - you do not represent a company or organization
- Membership belongs to the individual, not an organization, and may not be transferred.

IEEE and IEEE SA Membership

- Members are encouraged to join IEEE, IEEE Standards Association, and IEEE Computer Society
- Such membership is not required for Working Group membership or voting

Current Membership

- 76 Members

Quorum

- Quorum Requirement
 - At least 38 Members
 - 46 Members preregistered for Session #7

Secretary's Announcements

- **Scott Marin**
- **Membership**
- **Voting tokens**
- **Attendance list**

Librarian's Announcements

- **George Fishel**
- **Document collection**
- **Document distribution**
 - Flash RAM PC card
 - CD ROM
 - Ethernet
 - Wireless LAN?

Patent Policy & Procedures

–Deferred to Chair's Report

Attendance List

- **Participation recorded at each "meeting interval"** (morning/afternoon/evening)
 - Self-declared; "substantially all" of meeting
 - Session "Participation" requires participation at 75% of meeting intervals (will accept 7/11)
- **Attendance recorded in parallel meetings**
 - voting credit for presence at either
- **Attendance is public record**
 - attendance will be reported on web
 - contact info will not be posted (just company)

Logistics

- **Yunsang Park**
 - Host
- **Hughes Network Systems**
 - Corporate Host
- **Registration**
- **Meeting Rooms**
- **Breaks**
- **Wednesday dinner**

Chair's Status Report

802.16 Mission

- "to develop standards and recommended practices to support the development and deployment of fixed broadband wireless access systems"

Basic Process

- **PAR: Project Authorization Request**
 - Guiding document for IEEE standards development project
 - First 802.16 PAR written in Jan. 1999
- **IEEE 802 Oversees Our Work**
- **Working Group produces Draft in accordance with PAR**
 - Working Group Letter Ballot
- **Sponsor Letter Ballot**
 - Reviews draft
 - Open to interested individuals

Resources

- <http://ieee802.org/16>
- **Reflector**
 - Sign up on web
 - Read archives on web

802.16 Status Report

- Large, growing interest and attendance
 - November 1999: 107 sign-ins, 90 “participants”
 - January 2000: 118 sign-ins, 92 “participants”
 - March 2000: 126 sign-ins, 107 “participants”
 - This Session: ~150 preregistrants (plus 16 for ETSI BRAN HIPERACCESS)

802.16 Rules

- **Subject to IEEE 802 Rules**
 - OPERATING RULES OF IEEE PROJECT 802 LAN MAN STANDARDS COMMITTEE (LMSC)
- **Robert’s Rules of Order**

802.16 Projects

- **802.16.1 (Standard)**
 - Air Interface for Fixed Broadband Wireless Access Systems (10-66 GHz)
- **802.16.2 (Recommend Practice)**
 - Coexistence of Broadband Wireless Access Systems
- **802.16.3 (Standard) [approved 30 March]**
 - Air Interface for Fixed Broadband Wireless Access
 - Licensed bands, 2-11 GHz

802.16 Study Group

- **Wireless High-Speed Unlicensed Metropolitan Area Networks**
- **WirelessHUMAN™** standard
 - WirelessHUMAN.org
- **Note also:**
 - WirelessMAN™** family of standards
 - WirelessMAN.org

IEEE 802.16 Patent Policy (cont.)

- IEEE 802.16 interprets "in the opinion of the standards-developing committee" as "in the opinion of the members of the Working Group." Early disclosure to the Working Group participants of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and to increase the likelihood that the draft publication will be approved for publication. IEEE 802.16 strives to make such information available as soon as possible for consideration by individual members in their voting decisions. However, in its meetings and electronic forums, IEEE 802.16 does not permit discussions concerning the validity or applicability of intellectual property claims. The only role a patent claim plays in Working Group discussions concerns ensuring compliance to the IEEE 802.16 Patent Policy and Procedures.
- Justification for the inclusion of technology is limited to the technical merits of the technology.

IEEE 802.16 Patent Procedures

- 2. Written contributions to IEEE 802.16 standards development will not be accepted without an acknowledgement of familiarity with the IEEE 802.16 Patent Policy and Procedures. This acknowledgement will be part of the mandatory contribution cover sheet and will read:

“The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version #) ...

Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site.”

IEEE 802.16 Patent Policy

- IEEE 802.16 operates under the Patent Policy of the IEEE Standards Association, as set forth in Clause 6 of the IEEE-SA Standards Board Bylaws. This policy includes the statement:
- "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."

IEEE 802.16 Patent Procedures

- New; developed in consultation with the IEEE-SA Standards Board Patent Committee (PatCom)
- 1. Anyone, whether participating in IEEE 802.16 or not, should notify the Chair of any patents (granted or under application, and regardless of the assignee or the patent nationality) that may cover technology that is under consideration by or has been approved by IEEE 802.16. Such notification should be in written or electronic form (email is preferred) and need not make any statement concerning enforcement or licensing. The Chair will presume that such notification is intended for public release and will, as soon as practical, post it to the web along with other Patent Notices On File with IEEE 802.16. The Chair and the Working Group will take no position regarding the validity or applicability of any patents.

IEEE 802.16 Patent Procedures

- 3. The Chair, once formally notified and once a potentially relevant draft standard exists, shall write to the identified party and request that a Letter of Assurance be filed with the Chair for forwarding to the IEEE-SA Patent Committee, in accordance with the instructions in the IEEE-SA Standards Board Operations Manual. A sample request letter and response letter are available. When the Patent Committee has accepted the letter as a Letter of Assurance, information regarding the letter will be indexed in the Records of IEEE Standards-Related Patents.

802.16.1

–Air Interface for Fixed Broadband Wireless Access Systems

- **Chair: Lou Olsen**
- **Vice Chair: Roger Marks**
- **Editors:**
 - Brian Petry
 - Jim Mollenauer

802.16.2

–Coexistence of Broadband Wireless Access Systems

- Chair: Leland Langston
- Vice Chair: open
- Editor: Rebecca Chan
- Secretary: Reza Arefi

WirelessHUMAN™ Study Group

- **Wireless High-Speed Unlicensed Metropolitan Area Networks**
- **Chair: Durga Satapathy**
- **Secretary: Sanjay Moghe**

- Chartered by IEEE 802 at Session #6
- To coordinate with 802.11 and 802.15
- All present can vote in Study Group meetings

802.16.1 (cont.)

- Following “Development Plan for 802.16.1 Air Interface Standard” (IEEE 802.16-99/05)
 - [approved by Letter Ballot #1]
- First proposals at Session #4
 - 19 PHY, 15 MAC
- Massive Consolidation down to:
 - 2 Merged MAC Proposals
 - 2 Merged PHY Proposals
- Scheduled to choose drafts this week

802.16.3

- **Broadband Wireless Access Systems in Licensed Bands from 2 to 11 GHz**
- **Chair: Brian Kiernan**
- **Vice Chair: Carl Bushue**
- **Secretary: Dean Chang**
- **Functional Requirements**
 - Brian Petry
 - George Fishel

Regulatory Affairs Committee

- **New**
- **Chair: Gene Robinson**

- Meeting tonight:
 - 7:00-8:00 pm
 - The Boardroom

Charge to Task Groups

- Complete the task on your agenda
 - Agenda changes require a majority
 - Update agenda on bulletin board
- Prepare for next meeting
 - Call for Contributions, etc.
- Prepare for Closing Plenary
 - All motions to be in writing
- Document everything
 - submit documents before you leave
 - provide document index on bulletin board
- Presentations to Librarian 2 hours in advance

Future 802.16 Sessions

July 10-13, 2000: Session #8

–La Jolla, California with 802

- September 11-15, 2000: Session #9
 - Denver, Colorado, with RAWCON2000
- November 6-9, 2000: Session #10
 - Tampa, Florida with 802

ETSI BRAN HIPERACCESS

- Accepted our invitation to co-locate their meeting (18.5) here; starts Tuesday
- Two joint meetings
 - Tuesday pm
 - Friday am
- Goal
 - make an agreement this week on a process leading to a common standard with 802.16 (probably regarding only 802.16.1)
 - 802.16 approval scheduled for Closing Plenary

Adjournment

- Chair asks unanimous consent to adjourn this meeting of Working Group 802.16 until the Closing Plenary at 8:00 am on Friday, 5 May 2000.

802.16.1 Monday Evening Agenda

as modified:

Topic: Special FEC Session

Chair: Roger Durand

2000 Presentation of 802.16.1pc-00/22
 "An Amendment to Mode B of 802.16.1pc-00/19" (Moshe Ran)

2015 Presentation of 802.16.1pc-00/23
 "FEC Alternatives for BWA Burst Communications" (Jay Klein)

2055 Presentation of 802.16.1pc-00/26
 "Comments on IEEE 802.16.1pc-00/23" (David Williams)

2110 Presentation of 802.16.1pc-00/25
 "Metrics and Techniques for Evaluation of FEC Systems" (Eric Jacobsen)

2130 General Discussion

2200 Adjourn

802.16.2 Coexistence Report

IEEE 802.16.2: Coexistence Task Group
 Report
 1 May 2000
 by Leland Langston
 Coexistence Task Group Chair

Overall Status

- Practice Document Completed to a sufficient degree to define key parameters.
- Document reformatted to be consistent with IEEE document formats.
- Period since Albq. Mtg. focused on modeling and simulation of parameters contained in practice
- Coexistence group met in Montreal two weeks ago to review document and modeling results.

Montreal Meeting Summary

- Jack Garrison presented results of his modeling efforts for both same geographic area-adjacent frequency, and same frequency-adjacent geographic area. Highlighted problems with each.
- Phil Whitehead presented results of his modeling and simulation of MP-MP systems coexistence with other systems. Results favorable provide power levels are limited.
- Andy McGregor presented various OOB emissions masks and developed a proposal for a modified mask.

Montreal Meeting (cont)

- Paul Thompson presented some recommendations for what the practice document should strive to be.
- Briefly discussed frequency plans. No agreement, and some members believe no recommended frequency plan should be included.
- The results of modeling and simulation reveal significant inconsistencies within our current practice document.
- Action items included development of revised OOB emissions mask, revised antenna RPE masks and additional modeling efforts.

Results (from 36 BTA boundary points over 1000 random distributions)

Summary

- The BTSs produce unacceptable psfd levels at 60 km, even when the EIRP is 20dB below the maximum allowable.
- With the constrained power levels, the psfd limit of -114 dBw/MHz-m² is exceeded by 7-12 dB by BTSs.
- The total STS interference exceeds the psfd limit by up to 20 dB in main-beam coupling situations, and over 5 db for sidelobe-only coupling.
- STS interference may not be an issue since STS units will be installed much closer to the ground and the path will be more like to contain blockages.
- BTS interference is an issue which must be addressed.

Possible Alternatives

- Reduce maximum allowable BTS EIRP.
- Lower reference height for psfd measurement point.
- Constrain BTS antenna height
- Develop frequency-segmentation plan for use along boundaries.
- Agree on band plan which avoids BTS-BTS interference.
- Constrain deployment geometries along boundaries.
- Always coordinate.

IEEE802.16.3 Plenary Report May 01, 2000 4

Planned Activity for Coexistence Group in Wash DC, 2-4 May 2000

- Presentation and discussion of revised antenna mask, spectral masks, OOB emissions and modeling results.
- Resolution of current inconsistencies within the practice document.
- Revision of coordination process.

IEEE802.16.3 Plenary Report May 01, 2000 5

WirelessHUMAN Study Group Background

- WirelessHUMAN study group was proposed and accepted at IEEE 802.16 March 2000 Meeting
- Distinguishing Features
 - IEEE 802.11 – optimized for LANs primarily using ISM bands requiring spread-spectrum
 - IEEE 802.15 – optimized for PANs (relatively small range) and focused on ISM bands
 - IEEE 802.16.3 – optimized for licensed bands from 2 to 11 GHz
 - WirelessHUMAN will address public network access in license exempt bands.

IEEE802.16.3 Plenary Report May 01, 2000 4

WirelessHUMAN Objectives

- Identify license exempt bands suitable for fixed broadband MAN access – e.g. 5-6 GHz bands
- Investigate feasibility of developing an Air Interface Standard for the identified bands
- Investigate feasibility of using common MAC/PHY with IEEE 802.11 / IEEE 802.16.3
- Investigate relationship with 802.11, 802.15 and other standards groups

IEEE802.16.3 Plenary Report May 01, 2000 5

Existing Support for Active Participation

• Durga P. Satapathy	Sprint (Chair)
• Sanjay Moghe	RF Solutions (Secretary)
• Amarpal Khanna	Agilent Technologies
• Demos Kostas	Adaptive Broadband
• Valentine Rhodes	Intel
• Mika Kasslin	Nokia
• David Trinkwon	Transcomm Inc.
• Marianna Goldhammer	Breezecom
• Nafali Chayti	Breezecom
• Roger Durand	Cabletron
• Avi Freedman	Innowave ECI
• Dean Chang	BNA Systems
• Amos Dotam	WavelP
• Hadad Zion	Runcom
• Michael Stewart	Escape
• Stanley A. Reble	Microrl, Inc.

IEEE802.16.3 Plenary Report May 01, 2000 6

Key Issues

- What are the existing regulations in the various unlicensed bands, and what unlicensed bands may be appropriate for WirelessHUMAN systems?
- What mechanisms for interference avoidance/suppression, resource sharing, and ensuring adequate performance exist in unlicensed bands?
- What are the unique system design issues/requirements of WirelessHUMAN systems from a MACPHY layer perspective?
- Should the Study Group write a PAR to proceed with a standard? If so, should it try for July or wait until November?

IEEE802.16.3 Plenary Report May 01, 2000 7

Current Progress

- Signed up over 16 industry & academia representatives
- Established joint work plan with IEEE 802.16.3
- Received Four Contributions
- Scheduled representation at IEEE 802.11/802.15 Joint Interim Meeting in Seattle, May 8-12.

IEEE802.16.3 Plenary Report May 01, 2000 8

WirelessHUMAN™ Study Group

WIRELESSHUMAN STUDY GROUP CHAIR REPORT TO IEEE 802.16.3 PLENARY MEETING

Document Number: 802.16.00X3
 Title: WirelessHUMAN Study Group Chair Report to IEEE 802.16.3 Plenary Meeting
 Date Submitted: 2000-04-11
 Sources: Durga P. Satapathy
 [Sprint]
 1710 College Blvd., Suite 1436B
 Overland Park, KS 66210
 Voice: (913) 534-4191
 Fax: (913) 534-4522

IEEE802.16.3 Plenary Report May 01, 2000 1

WIRELESSHUMAN STUDY GROUP CHAIR REPORT TO IEEE 802.16.3 PLENARY MEETING

Purpose: This report for IEEE 802.16 Study Group on Public MAN for Broadband Fixed Wireless Access - License Exempt Bands.
 Notice: This document has been prepared to assist the IEEE 802.16.1 is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor reserves the right to add, amend or withdraw material contained herein.
 Release: No contribution acknowledges and accepts that its contribution may be made public by IEEE 802.16.
 IEEE Patent Policy: The contributor is familiar with the IEEE Patent Policy, which is set forth in the IEEE-SA Standards Board Bylaws and includes the statement: "IEEE standards may include the known use of patents (including patent applications) if it can be introduced justifiably in the opinion of the standards development committee and provided the IEEE reserves its right to sue the patent holder that it will license applications under reasonable terms and conditions for the purpose of implementing the standard."

IEEE802.16.3 Plenary Report May 01, 2000 2

IEEE 802.16 Plenary Report
Wireless High-Speed Unlicensed Metropolitan Area Network (Wireless HUMAN)

Durga P. Satapathy

IEEE802.16.3 Plenary Report May 01, 2000 3

WIRELESS WIRELESS WIRELESS	
Date	Time
2-May	8:00 Joint meeting 802.16.3 & WMAN ANSG Introduction and member sign up Review of Goals and Objectives Discussion and Acceptance of Agendas 1:00 Introduction to WMAN 802.16e-003 Contribution from Jon Pahl 1:20 Lunch Break 1:30 WIRELESS WIRELESS WIRELESS System requirements 802.16e-001 Contribution from Mita Kasim and Nico Van Waas Break 10 min 802.16e-002 Contribution from Vijaya Gallager Dinner Break 5:30
3-May	8:00 Joint Session with 802.16.3 1:20 Lunch 1:30 Joint Session with 802.16.3 Dinner Break 5:30
4-May	8:00 802.16e-004 Overview of UNI Regulations Contribution from Jamie Ormelius 9:00 Discussion of WIRELESS WIRELESS WIRELESS 1:00 Joint wrapup meeting 802.16.3 & WMAN SG 1:20 Lunch Break

IEEE802.16.3 Plenary Report May 01, 2000 9

Regulatory Affairs Committee

- Formulate the objectives and process for the 802.16 Regulatory Affairs Committee.
- Provide focal point for 802.16 regulatory activities
- Provide coordination with 802 regulatory activities.
- Coordinate national, international and world regulatory issues for 802.16.
- Achieve acceptance of 802.16 Standards for regulatory policy and rules formation.
- Establish 802.16 as a representative for broadband terrestrial wireless interests regarding regulatory issues.

Appendix B, Closing Plenary Agenda and Presentations

Closing Plenary Meeting Agenda (Revised)

802.16 Session #7: Closing Plenary Meeting Agenda

Friday, 5 May 2000, 08:00-10:30

<i>Opening</i>		<i>08:00</i>
Call to Order	Marks	I
Approval of Modified Closing Plenary Agenda	Marks	V
<i>Announcements</i>		<i>08:05</i>
Registration	Marks	I
Attendance: 154 (record [prev. 130?])	Marks	I
Documents	Fishel	I
Logistics	Park	I
Other	Marks	I
<i>802.16.1</i>	Marks	<i>08:15</i>
Review of Activities		I
Motions		V
FEC Ad Hoc Committee: Call for Contributions	Jacobsen, Liebetreu	V
Plans		D
PHY Draft Editing and Comment Generation		D
PHY Modeling		D
MAC Modeling		D
<i>802.16.2</i>	Langston	<i>09:00</i>
Report		I
Plans and Timetable (including Letter Ballot schedule)		I
Motions: Liaison Letter Approval		V
<i>802.16.3</i>	Kiernan	<i>09:15</i>
Report		I
Plans		I
Motions		V
<i>WirelessHUMAN™ Study Group</i>	Satapathy	<i>09:30</i>

Chair's Closing Plenary Presentation

IEEE 802.16 Session #7: Closing Plenary Meeting

IEEE 802.16 Presentation Submission Template (Rev. 8)

Document Number:

None

Date Submitted:

2000-05-05

Source:

Roger Marks
NIST
325 Broadway, MC 813.00
Boulder, CO 80303

Voice: +1-303-497-3037

Fax: +1-303-497-7828

E-mail: marks@nist.gov

Venue:

Session #7, Closing Plenary

Base Document:

None

Purpose:

This presentation is to be inserted in the Session #7 minutes.

Notice:

This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release:

The contributor grants a free, irrevocable license to the IEEE to incorporate text contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.

IEEE 802.16 Patent Policy:

The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version 1.0) <<http://ieee802.org/16/jpr/patents/policy.htm>>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."

Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <<mailto:r.marks@ieee.org>> as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site <<http://ieee802.org/16/jpr/patents/letters>>.

IEEE 802.16 Working Group on Broadband Wireless Access (BWA)

Session #7
Closing Plenary
5 May 2000
8:00-10:30 am

Session Opening

- **Call to Order**
- **Welcome**

IEEE 802.16 Patent Policy

- IEEE 802.16 operates under the Patent Policy of the IEEE Standards Association, as set forth in Clause 6 of the IEEE-SA Standards Board Bylaws. This policy includes the statement:
- "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."

IEEE 802.16 Patent Policy (cont.)

- IEEE 802.16 interprets "in the opinion of the standards-developing committee" as "in the opinion of the members of the Working Group." Early disclosure to the Working Group participants of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and to increase the likelihood that the draft publication will be approved for publication. IEEE 802.16 strives to make such information available as soon as possible for consideration by individual members in their voting decisions. However, in its meetings and electronic forums, IEEE 802.16 does not permit discussions concerning the validity or applicability of intellectual property claims. The only role a patent claim plays in Working Group discussions concerns ensuring compliance to the IEEE 802.16 Patent Policy and Procedures.
- Justification for the inclusion of technology is limited to the technical merits of the technology.

IEEE 802.16 Patent Procedures

- New; developed in consultation with the IEEE-SA Standards Board Patent Committee (PatCom)
- 1. Anyone, whether participating in IEEE 802.16 or not, should notify the Chair of any patents (granted or under application, and regardless of the assignee or the patent nationality) that may cover technology that is under consideration by or has been approved by IEEE 802.16. Such notification should be in written or electronic form (email is preferred) and need not make any statement concerning enforcement or licensing. The Chair will presume that such notification is intended for public release and will, as soon as practical, post it to the web along with other Patent Notices On File with IEEE 802.16. The Chair and the Working Group will take no position regarding the validity or applicability of any patents.

IEEE 802.16 Patent Procedures

- 2. Written contributions to IEEE 802.16 standards development will not be accepted without an acknowledgement of familiarity with the IEEE 802.16 Patent Policy and Procedures. This acknowledgement will be part of the mandatory contribution cover sheet and will read:

“The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version #) ...

Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site.”

Future 802.16 Sessions

July 10-13, 2000: Session #8

–La Jolla, California with 802

- September 11-15, 2000: Session #9
–Denver, Colorado, with RAWCON2000
- November 6-9, 2000: Session #10
–Tampa, Florida with 802

IEEE 802.16 Patent Procedures

- 3. The Chair, once formally notified and once a potentially relevant draft standard exists, shall write to the identified party and request that a Letter of Assurance be filed with the Chair for forwarding to the IEEE-SA Patent Committee, in accordance with the instructions in the IEEE-SA Standards Board Operations Manual. A sample request letter and response letter are available. When the Patent Committee has accepted the letter as a Letter of Assurance, information regarding the letter will be indexed in the Records of IEEE Standards-Related Patents.

Adjournment

- Chair asks unanimous consent to adjourn this meeting of Working Group 802.16 until the Session #8 Opening Plenary on Monday, 10 July 2000.

802.16.2 Report

802.16.2 Coexistence Task Group Report 1-5 May 2000

- 13 (17) People Participated
- 4 Contributions Presented/Discussed
- Reviewed latest modeling results. These are in agreement with previous results which indicate inconsistencies in current document.
- Interim Meeting planned for Week of 5 or 12 July 2000 (Tentative)
- Timeline changed: Release for IEEE 802 approval now scheduled for May 2001.

802.16.2 Coexistence Task Group Report 1-5 May 2000 (cont)

- Current working copy of coexistence practice document will be posted 9 May 2000
- Comments on current document solicited
- Several teleconferences were planned to facilitate progress between meetings.
- Critical schedule driver is to reach agreement on key parameters and coordination process. Target Date for completion: July 2000
- Begin letter ballot process Nov 2000
- Revised letter to ETSI TM-4 (to be forwarded by Roger).

Draft Reply to ETSI

Liaison Letter from IEEE 802.16 to TM4
Roger Marks, Chair

Dr. Roberto Macchi
Chairman ETSI WG-TM4
mailto: Roberto.Macchi@ICN.SIEMENS.IT

Dear Dr. Macchi,

On behalf of IEEE 802.16 I thank you for your valuable inputs contributed to our Sessions 6 and 7. IEEE scope is not limited to North America and your contributions will help the IEEE achieve global applicability of the 802.16 Coexistence Practice document.

The presentation (IEEE 802 16lp-00/07), by the TM4 Liaison Officer Barry Lewis at our Session #6, of the DETR/TM 04069 TM4 work item (Rules for Co-existence of P-P and P-MP systems using different access methods in the same frequency band) helped us to better understand that draft report. We found the substance of the report extremely interesting, and it is particularly relevant to the efforts of the 802.16.2 Task Group that is working to develop a recommended practice for the radio co-existence of Broadband Fixed Wireless Access systems. We have included a summary of your work item in our current draft co-existence document.

We will reciprocate by providing the TM4 working party with a current working copy of the 802.16 .2 Coexistence Practice when it is sufficiently stable. We will also provide a summary of this document to TM4 at the earliest possible date.

We will continue the work of finalizing the Coexistence Practice document at 802.16 meetings taking place in July and September (see <http://iee802.org/16/meetings/> ..).

Roger B. Marks
Chair, IEEE 802.16 Working Group on Broadband Wireless Access

Cc Jim Carlo
Chair, IEEE 802

Revised 802.16.2 Timeline

Date	Days	Meeting Location	MileStone
08-Oct-99			1 st Rough draft posted
22-Oct-99	14		Meeting 4 contribution deadline
04-Nov-99	13		Comments due
08-Nov-99	4	#4: Kauai, HI	
17-Dec-99	39		2 nd Rough draft posted
3-Jan-00	17		3 rd Rough draft posted
10-Jan-00	7	#5: Dallas, TX	
17-Jan-00			4 th Draft posted
20-Jan-00			Teleconf at 10:00 am CST
27-Jan-00			Teleconf at 10:00 CST
3-Feb-00			Teleconf 10:00 am CST
24-Feb-00			4 th Draft Posted; Call for comments
28-Feb-00			Closing date for comments
06-Mar-00	56	#6: Albuquerque, NM	Work completed on practice doc; major holes/problems ident.
10-Mar-00	4		5 th Draft Posted; Call for comments
		Telecon (date TBD)	Complete initial model for evaluating coexistence
		Telecon (date TBD)	Evaluation of antenna section of practice
19-20-Apr-00	2	#6A: Montreal, Canada	Interim mtg to revise drft doc and review modeling results
24-Apr-00			6 th Draft Posted; Call for comments
01-May-00		#7: Washington DC	Review model and initial results; revise practice doc
8-May-00			7 th Draft (with edit tracking) and 8 th Draft (clean) Posted; call for comments
15-May-00		Teleconference	-Discuss the 8 th Draft discussion proposals needed by sections
26-May-00		Teleconference	-review contributions including simulation results -agenda for next interim meeting -publish 9 th Draft
12-June-2000		#7A Boulder, CO/Ottawa [TBD]	- Fill in TBD and blanks in the 9 th Draft
14-June-2000			-generate and circulate preliminary 10 th Draft
26-June-2000		Teleconference	-address issues from 12 June 2000 meeting
2-Jul-00			Publish 10 th Draft
10-Jul-00		#8: La Jolla, CA	-review/finalize contents including coordination process -finalize organization of structure (organization) of final draft
28-Jul-00		Teleconference	Review 10 th Draft -including coordination process -general recommendation for mitigation
10-Aug-00		Teleconference	Continue review of 10 th Draft
22-Aug-00		#8A Boulder, CO (Tentative)	Complete 11 th Draft -circulate among coexistence members, request comments
29-Aug-00		Teleconference	Review comments on 11 th Draft
11-Sept-00		#9: Denver, CO	12 th Draft, request for comments
17-Oct-00		Teleconference	Final review of comments
02-Nov-00			Publish final draft
06-Nov-00		#10: Tampa, FL	Draft Complete – Task Group, Release for letter ballot (802.16)
15-Dec-00			Completion of first ballot results in
9-Jan-01		Teleconference	Review comments
22-Jan-01		#11	Resolve comments
29-Jan-01			Begin re-circulation
15-Feb-01			Second round balloting complete
22-Feb-01			Draft Complete – Working Group, Electronic Request for sponsor ballot (802)
12-Mar-01		#12	Sponsor ballot approval - Draft Standard
15-Mar-01			Begin sponsor ballot
16-Apr-01			First sponsor ballot completed
30-Apr-01			Begin re-circulation
07-May-01			Re-circulation completed
10-May-01			Complete official draft document
XX-May-01		#13	Coexistence Party
			Submit to IEEE SA

802.16.3 Report

IEEE 802.1.3 Session #7 Summary

Brian G. Kiernan
InterDigital Communications Corp.

- Meetings
 - Tuesday AM - Joint session with WHUMAN
 - Discussions of objectives of both groups
 - Agenda Revisions and Approval
 - Introduction to 802.16.3 Draft Development Plan
 - Tues. PM through Thurs. AM
 - Functional Requirements Document Comments
 - Thurs AM - Development Plan and Work Method

IEEE 802.1.3 Session #7 Summary

- Functional Requirements Document
 - 122 comments resolved/abled
 - 29 comments open for resolution at Session # 8
 - New Call for Comments for the sections addressed at Session #7
 - Call for Contributions for Specific Document Sections
 - System Reference Model
 - Voice Services and QOS (Ad Hoc established)
 - Internet Protocol Service Properties
 - Traffic Models and Target Market Characteristics

IEEE 802.1.3 Session #7 Summary

- 802.16.3 Development Plan
 - Hybrid approach
 - “ETSI Style” on Major Characteristics (“Top 10 List”) with IEEE voting process
 - “IEEE 802.16.1 Style” after Major Characteristics are established and agreed upon
 - E-mail forum established to create draft Plan for Session 8
 - Calls for Contributions
 - “Top 10” Characteristics List, both MAC & PHY, and suggested Evaluation Criteria
 - Specific Contributions on: RF Bands and Channelization, Modulation, and Access Method - with Rationale

WirelessHUMAN™ SG Report 1-5 May 2000

- Enlisted over 30 members
- Reviewed 4 contributions
- Drafted WirelessHUMAN system characteristics
- Preliminary PHY/MAC layer assessment
- Drafted letter to U.S. Delegation to WRC-2000 regarding CEPT proposal
- Formulated plan of action for detailed study

Preliminary Assessment

- 802.16.3 PHY
 - TBD
 - Commonality in propagation characteristics
- 802.16.3 MAC
 - TBD
 - Potential synergies

Preliminary Assessment

- 802.15 PHY
 - Frequency Hopping
 - Current limitations on bit rates (1 Mbps)
 - Designed for 2.4 GHz ISM bands
- 802.15 MAC
 - Optimized for ad-hoc networking
 - Designed for limited range applications
 - Includes support for CBR

WirelessHUMAN™ System Characteristics

- Metropolitan Area Network
- Services: voice, video & data
- Fixed/Nomadic Wireless Service Provider Application
- Operate in Unlicensed Frequency Bands (initial focus on outdoor UNII bands)
- Operation in presence of other unlicensed devices
- MAC/PHY efficiency to support MAN environment
- Cost and performance for residential/SOHO/SME/customers
- QoS support (in-system & external interference)
- standardized registration/authentication
- ease of use & installation

Preliminary Assessment

- 802.11a PHY
 - Optimized for LAN peer-to-peer traffic and bandwidth requirements
 - Optimized for indoor multipath; needs evaluation for outdoors
 - No provision for dynamic frequency selection and power control
- 802.11 MAC
 - MAC designed for ISM bands (Needs Evaluation)
 - assumption of negligible propagation delay
 - enforces Listen Before Talk (LBT) rule
 - Designed for bursty traffic, not for voice/CBR applications
 - Centralized control (suitable for WirelessHUMAN)

Preliminary Assessment

- 802.16.1 MAC
 - Not designed for interference in unlicensed bands
 - Designed for enterprise applications
 - Potential synergies based on common MAN requirements
- 802.16.1 PHY
 - Not designed for interference in unlicensed bands
 - Designed for above 11 GHz
 - Designed for LOS scenarios only

Preliminary Assessment

- HiperAccess PHY
 - Single carrier approach
 - Above 11 GHz
 - 28 MHz channel bandwidth
- HiperAccess MAC
 - TDMA based
 - Connection-oriented
 - guaranteed QoS
 - fixed length frame size and transmission slots
 - Supports FDD mainly, allows TDD for unpaired bands
 - Supports dynamic asymmetry for TDD
 - Adaptive modulation
 - Uses Convergence Layer to support multiple protocols

Plan of Action for Detailed Study

- Study Group Email Reflector
- Conference Calls
 - 802.11/802.15/HiperAccess tutorials
- Call for contribution for detailed analysis
- Feedback from Seattle meeting on 8th May
- Present tutorials at July meeting

Draft Letter

05/03/00

To: Dr. Gail Schoettler, Chairman US Delegation to WRC-2000

Subject: ECP proposal to WRC-2000 for allocation of 5150-5350 MHz and 5470-5725 MHz for Mobile Services

Dear Dr. Schoettler,

The IEEE 802.16 WirelessHUMAN (High-speed Unlicensed Metropolitan Area Network) Study Group would like to bring to your attention the potential adverse impact of the European Common Proposal (ECP) to be submitted to WRC-2000 by CEPT. The CEPT proposal seeks to gain global allocation of the frequency ranges 5150-5350 MHz for mobile services in support of radio local area network (RLAN) applications. In particular, the proposal requires that these bands be designated for the exclusive use of Radio Local Area Network (RLAN) systems (e.g. HIPERLAN Types 1 and 2 as defined by European Telecommunications Standards), and that devices in 5150-5350 MHz bands be restricted to indoor use. In addition, the proposal places several constraints on device operation in these bands with the intent of rendering these bands suitable for RLAN operation.

Preliminary Assessment

- HIPERLAN-2 PHY
 - Similar to 802.11a
- HIPERLAN-2 MAC
 - TDD based
 - ATM based solution
 - Support multiple CoS
 - centralized control
 - Assumes short propagation delay
 - Includes power control and dynamic frequency selection
 - Includes ARQ mechanism
 - Uses Convergence Layer to support multiple protocols

ECP/CEPT Proposal to WRC-2000

- Impact on UNII band 5250-5350 MHz
 - Restrict to indoor use
 - Restrict band exclusively for radio LANs
- CEPT requested support from 802.11
- WirelessHUMAN members oppose proposal
- WCAI opposes proposal
- Issue owned by FCC
- Issue open till WRC 2002/2003

In the U.S., the 5150-5350 MHz bands form part of the Unlicensed National Information Infrastructure (U-NII) spectrum allocated by the Federal Communications Commission (FCC). The FCC concluded that public interest would be better served by allowing outdoor use in the 5250-5350 MHz band to facilitate medium range communications as needed for campus networks, hospitals etc. The UNII band allocation has been a major step taken by the FCC to promote the operation of unlicensed devices and allow for spectrum sharing and coexistence of a diverse set of such devices. The proposed exclusive use of RLANS can render the efforts and investments of manufacturers and service providers in the UNII band entirely useless, and preempt the development of new products and services, thereby undermining the original intent of the FCC.

Insufficient notice has been allowed for due diligence as to the impact and ramifications of the proposed changes. At a minimum, the timing of the CEPT proposal deprives U.S. wireless industry of the opportunity of participating in this global mobile service initiative. The global allocation of the 5250-5350 MHz for RLANS systems is clearly an issue that deserves the benefit of discussion. We therefore urge you to convey our objections to the European Common Proposal at the WRC-2000 meetings.

Respectfully,

Dr. Durga P. Satapathy
Chairman
IEEE WirelessHUMAN (Wireless High-speed Unlicensed Metropolitan Area Network)
7101 College Blvd., Suite 1400, Overland Park, KS - 66210
Ph: (913) 534-6338 Fax: (913) 534-6522
d.p.satapathy@ieee.org

Appendix C, Attendance at Session #7

802.16 Session #7 was an interim session. It was attended by 158 people. Attendance of at least 7 of 11 meeting intervals was required for the 75% criteria for participation. Please contact the 802.16 secretary if you feel your attendance has been recorded incorrectly.

The follow 116 people attended 7 or more intervals:

Aboukarr, Bakri	Hammons, Jr., A. Roger	Reible, Stanley
Abu-Dayya, Adnan	Hilberman, Dan	Rhodes, Valentine
Arefi, Reza	Huang, Robert	Ribner, David
Arunachalam, Arun	Hunter, Wayne	Robinson, Gene
Avivi, Eli	Izadpanah, Hossein	Rzeszewski, Ted
Baldo, Paolo	Jacobsen, Eric	Sanders, Ray
Bao, Jay	Jamali, Hamadi	Satapathy, Durga
Baragar, Ian	Jansson, Leif	Sater, Glen
Baseghi, Behshad	Jevremovic, Vladan	Scaringi, Vito
Benyamin-Seeyar, Anader	Jorgensen, Jacob	Schafer, David
Brown, Chris	Kang, Inchul	Shenhav, Chaim
Bushue, Carl	Kasslin, Mika	Shirali, Chet
Buskila, Baruch	Kiernan, Brian	Stamatelos, George
Chan, Rebecca	Kim, John	Stambaugh, Karl
Chang, Dean	Kirac, Ahmet	Struhsaker, Paul
Chayer, Rémi	Klein, Allan	Stuber, Gordon
Choi, Hoon	Klein, Jay	Sundelin, Andrew
Chopra, Rahul	Kolze, Thomas	Tateishi, Kimiya
Clavelin, Cyril	Kostas, Demosthenes	Thompson, Paul
Coles, Ron	Kumagai, Tomoaki	Trinkwon, David
Condie, Mary	Langston, J. Leland	Van der Star, Jack
Dallas, Panos	Lavie, Israel	van Waes, Nico
Doherty, Edward	Leiba, Yigal	Vu, Phuong
Dotan, Amos	Lewis, Barry	Wachira, Muya
Durand, Roger	Licardie, Sergio	Wang, Chao-Chun
Eklund, Carl	Liebetreu, John	Whitehead, Philip
Etemad, Kamran	Lindh, Lars	Williams, David
Evans, Allan	Lu, Willie	Ye, Huanchun
Fishel, George	Marin, J. Scott	Yee, Jung
Florea, Adrian	Marks, Roger	Zhang, Wei
Foerster, Jeffrey	Meyer, Ronald	Zuniga, Juan Carlos
Fulton, Thomas	Mody, Apurva	
Furukawa, Hiroshi	Moghe, Sanjay	
Gallagher, Vijaya	Mollenauer, James	
Garrison, G. Jack	Monk, Anton	
Germon, Richard	Nadiv, Ron	
Goldhammer, Marianna	Nudler, Avi	
Grell, Conrad	Ohlson, John	
Grier, Ian	Ohmoto, Ryutaro	
Gurantz, Itzhak	Oros, Nicholas	
Hadad, Zion	Park, Yunsang	
Halachmi, Baruch	Petry, Brian	
	Ran, Moshe	

The following 42 people attended between 1 and 6 intervals:

Ackley, Sherman
Arnstein, Donald
Audeh, Malik
Azaren, Daniel
Balech, Jean-Pierre
Bishop, Lamar
Bourlas, Yair
Chayat, Naftali
Choi, Hokyu
Chu, Narisa
Cigard, Craig
Crilly, William
Curtis, Kevin
DeCamp, Joe
DiFonzo, Daniel

Doucet, Keith
Fazel, Khaled
Guillemette, Phil
Haklai, Jehuda
Journe, Thierry
Langley, John
Leung, Nikolai
Martin, Christophe
Matthews, Ham
Moayeri, Nader
Nagdev, Sanjay
Pawlowski, Chris
Peha, Jon
Penther, Bertrand
Pihlaja, Juha

Rakib, Shlomo
Rosenblatt, Jeff
Salman, Phillips
Serizawa, Mutsuma
Stanwood, Ken
Sumi, David
Takatori, Hiroshi
Thomson, Stuart
Unger, David
Varma, Subir
Whiting, Robert
Yang, Kebing