

# AGENDA & MINUTES (Unconfirmed) - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING

Friday, November 14, 2003 – 1:00 p.m.

Hyatt Regency Hotel– Albuquerque, NM

**1.00 MEETING CALLED TO ORDER - Nikolich 1 01:00 PM**

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Paul Nikolich called the meeting to order at 1:00 pm. Members in attendance were:

- Paul Nikolich - Chair, IEEE 802 LAN / MAN Standards Committee
- Geoff Thompson - Vice Chair, IEEE 802 LAN / MAN Standards Committee
- 10 Mat Sherman - Vice Chair, IEEE 802 LAN / MAN Standards Committee
- Buzz Rigsbee - Executive Secretary, IEEE 802 LAN / MAN Standards Committee
- Bob O’Hara - Recording Secretary, IEEE 802 LAN / MAN Standards Committee
- Bill Quackenbush - Treasurer, IEEE 802 LAN/MAN Standards Committee
- Tony Jeffree - Chair, IEEE 802.1 - HILI Working Group
- 15 Bob Grow - Chair, IEEE 802.3 - CSMA/CD Working Group
- Stuart Kerry - Chair, IEEE 802.11 - Wireless LANs Working Group
- Bob Heile - Chair, IEEE 802.15 – Wireless PAN Working Group
- Roger Marks - Chair, IEEE 802.16 – Broadband Wireless Access Working Group
- Mike Takefman - Chair, IEEE 802.17 – Resilient Packet Ring Working Group
- 20 Carl Stevenson - Chair, IEEE 802.18 – Regulatory TAG
- Jerry Upton - Chair, IEEE 802.20 – Mobile Broadband Wireless Access
- DJ Johnston - Chair, EC Study Group – Media Independent Handover

The meeting was attended by approximately 30 observers, as well as several IEEE Staff, including Angela Ortiz, Jerry Walker, and Jennifer Longman.

25 **Proposed Agenda**

**r04 AGENDA - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING**  
**Friday, November 14, 2003 - 1:00PM -6:00PM**  
**Hyatt Regency, Albuquerque, NM**

<b>1.00</b>		<b>MEETING CALLED TO ORDER</b>	-	<b>Nikolich</b>	<b>1</b>	<b>01:00 PM</b>
<b>2.00</b>	<b>MI</b>	<b>APPROVE OR MODIFY AGENDA</b>	-	<b>Nikolich</b>	<b>9</b>	<b>01:01 PM</b>
<b>3.00</b>			-			<b>01:10 PM</b>
<b>3.01</b>			-			<b>01:10 PM</b>
<b>3.02</b>			-			<b>01:10 PM</b>
<b>4.00</b>	<b>II</b>	<b>TREASURER'S REPORT</b>	-	<b>Quackenbush</b>	<b>5</b>	<b>01:10 PM</b>
<b>4.01</b>	<b>II</b>		-			<b>01:15 PM</b>

**Category (\* = consent agenda)** -

<b>5.00</b>		<b>IEEE Standards Board Items</b>	-			<b>01:15 PM</b>
<b>5.01</b>	<b>ME</b>	<b>802.16/Conformance02/D4 to RevCom</b>	-	<b>Marks</b>	<b>5</b>	<b>01:15 PM</b>
<b>5.02</b>	<b>ME</b>	<b>802.16/Conformance04 PICS for Frequencies &lt; 11 GHz PAR to NeSCom</b>	-	<b>Marks</b>	<b>5</b>	<b>01:20 PM</b>
<b>5.03</b>	<b>ME</b>	<b>802.16.2-REVa to RevCom</b>	-	<b>Marks</b>	<b>5</b>	<b>01:25 PM</b>
<b>5.04</b>	<b>ME</b>	<b>802.21 PAR on Media Independent Handover to NeSCom</b>	-	<b>Johnston</b>	<b>5</b>	<b>01:30 PM</b>
<b>5.05</b>	<b>ME</b>	<b>802.1F reaffirmation to RevCom</b>	-	<b>Jeffree</b>	<b>2</b>	<b>01:35 PM</b>
<b>5.06</b>	<b>ME</b>	<b>802b to RevCom under Procedure 10</b>	-	<b>Jeffree</b>	<b>2</b>	<b>01:37 PM</b>
<b>5.07</b>	<b>ME</b>	<b>802.1X-REV to RevCom under Procedure 10</b>	-	<b>Jeffree</b>	<b>2</b>	<b>01:39 PM</b>
<b>5.08</b>	<b>ME</b>	<b>802.1D-REV to RevCom</b>	-	<b>Jeffree</b>	<b>2</b>	<b>01:41 PM</b>

5.09	ME	"Key Agreement" PAR to NeSCom	-	Jeffree	5	01:43 PM
5.10	ME	802.17 to Sponsor Ballot	-	Takefman	5	01:48 PM
5.11	ME	802.11i to Sponsor Ballot	-	Kerry	5	01:53 PM
5.12	ME	802.11e to Sponsor Ballot under Procedure 10	-	Kerry	5	01:58 PM
5.13	ME	802.11j to Sponsor Ballot under Procedure 10	-	Kerry	5	02:03 PM
5.14	ME	802.3ak to RevCom under Procedure 10	-	Grow	2	02:08 PM
5.15	ME	802.3al 802.3 10GBASE-T PAR to NeSCom	-	Grow	5	02:10 PM
5.16	ME	802.3ah to Sponsor Ballot under Procedure 10	-	Grow	5	02:15 PM
5.17	ME	802.3am, Maintenance #8 (Revision) PAR to NesCom	-	Grow	5	02:20 PM
5.18	ME	802.16/Conformance03 to Sponsor Ballot	-	Marks	5	02:25 PM
						02:30 PM
						02:30 PM
6.00		<b>Executive Committee Study Groups &amp; Working Groups</b>	-			02:30 PM
6.01	MI	Confirm Vice Chair of 802.17	-	Takefman	5	02:30 PM
6.02	MI	Confirm Vice Chair of 802.1	-	Jeffree	5	02:35 PM
6.03	MI*	Renewal of 802.15.4 study group	-	Heile	0	02:40 PM
6.04	MI*	Approve formation of 802.15 Mesh Network study group	-	Heile	0	02:40 PM
6.05	MI*	Approve formation of 802.15.4 enhancements study group	-	Heile	0	02:40 PM
6.06	MI*	Approve formation of 802.15.3 enhancements study group	-	Heile	0	02:40 PM
6.07	MI*	Approve formation of 802.18 study group on unused TV spectrum	-	Stevenson	0	02:40 PM
6.08	MI*	Approve formation of 802.11 study group on ESS mesh networking	-	Kerry	0	02:40 PM
6.09	MI*	Approve formation of 802.11 study group on wireless performance prediction	-	Kerry	0	02:40 PM
6.10	MI*	Continuation of ECSG on Handoff	-	Johnston	0	02:40 PM
6.11	MI*	Extension of 802.3 10GBASE-T study group	-	Grow	0	02:40 PM
6.12	MI	Approve formation of 802.3 study group on 10Gb/s operation on MMF	-	Grow	5	02:40 PM
6.13	MI*	Approve Formation of 802.3 study group on backplane Ethernet	-	Grow	0	02:45 PM
6.14	MI*	Approve extension of 802.11 WAVE study group	-	Kerry	0	02:45 PM
6.15	MI*	Approve extension of 802.11 fast roaming study group	-	Kerry	0	02:45 PM
						02:45 PM
7.00		Break	-		15	02:45 PM
						03:00 PM
8.00		<b>IEEE-SA Items</b>	-			03:00 PM
8.01	II	Get IEEE802 Program budget review	-	Walker	10	03:00 PM
8.02			-			03:10 PM
8.03			-			03:10 PM
8.04			-			03:10 PM
9.00		<b>LMSC Liaisons &amp; External Interface</b>	-			03:10 PM
9.01	II	802.1 Liaison to ITU/T	-	Jeffree	5	03:10 PM
9.02	ME	Comments on RF Exposure to FCC	-	Stevenson	5	03:15 PM
9.03	ME	Comments on Part 15 to FCC	-	Stevenson	5	03:20 PM
9.04	ME	WAPI Letter to China	-	Stevenson	5	03:25 PM
9.05	ME	RLAN protection criteria to ITU-R	-	Stevenson	5	03:30 PM
9.06	MI	802 comments on ISO/IEC TR 24704	-	Grow	5	03:35 PM
9.07			-			03:40 PM
9.08			-			03:40 PM
9.09			-			03:40 PM
9.10			-			03:40 PM
10.00		<b>LMSC Internal Business</b>	-			03:40 PM
10.01	MI	WG Financial Policy P&P Change	-	Quackenbush	5	03:40 PM
10.02	MI	Initiate Financial Policy P&P Change	-	Quackenbush	5	03:45 PM
10.03	MI	Precedence P&P Change	-	Sherman	5	03:50 PM
10.04	MI	I.D.E.A.L. Press Release	-	Rigsbee	5	03:55 PM
10.05	MI	Miscellaneous Equipment Purchase	-	Rigsbee	10	04:00 PM

10.06	MI	Selection of future meeting sites	-	Rigsbee	15	04:10 PM
10.07	MI	Approval Face to Face contract for 1/04 and 3/04 meetings	-	Quackenbush	5	04:25 PM
10.08	MI	Software Contract Approval	-	Kerry	15	04:30 PM
10.09	MI	Proposed P&P change on roll call votes	-	Takefman	5	04:45 PM
10.10	MI	Approve operation of 802.11 and 802.15 with joint treasury	-	Kerry	10	04:50 PM
10.11			-			05:00 PM
10.12			-			05:00 PM
10.13			-			05:00 PM
10.14			-			05:00 PM
10.15			-			05:00 PM
10.16			-			05:00 PM
11.00		Information Items	-			05:00 PM
11.01	II	802 Reorganization update	-	Frazier	5	05:00 PM
11.02	DT	ad hoc EC meeting in Vancouver	-	Marks	5	05:05 PM
11.03	II	Indemnification Issue Update	-	Nikolich	5	05:10 PM
11.04	II	P&P Update	-	Sherman	5	05:15 PM
11.05	II	Wireless Bridge Status Report	-	Rigsbee	5	05:20 PM
11.06	II	Face to Face Contract Update	-	Rigsbee	5	05:25 PM
11.07	II	Interim meetings	-	Nikolich	5	05:30 PM
11.08	II	802 News Bulletin	-	Klerer	10	05:35 PM
11.09	II	802 Task Force Update	-	Nikolich	5	05:45 PM
11.10	II	Some in pool not receiving Sponsor Ballot invitations	-	Grow	5	05:50 PM
11.11	DT	Disclosure of member information	-	Kerry	5	05:55 PM
11.12	II	802.11 to China regarding WAPI	-	Kerry	5	06:00 PM
11.13	II	802.19 update	-	Siep	5	06:05 PM
		ADJOURN SEC MEETING	-	Nikolich		06:00 PM
		ME - Motion, External      MI - Motion, Internal				
		DT- Discussion Topic      II - Information Item				
2.00	MI	APPROVE OR MODIFY AGENDA	-	Nikolich	9	01:01 PM

Moved: To approve the agenda.

5 Moved: Heile/Jeffree  
Passes: 10/0/0

3.00			-			01:10 PM
3.01			-			01:10 PM
3.02			-			01:10 PM
4.00	II	TREASURER'S REPORT	-	Quackenbush	5	01:10 PM

**IEEE Project 802**  
**Estimated Statement of Operations**  
**November 2003 Plenary Session**  
**Albuquerque, NM**  
**As of November 14, 2003**

<b>Meeting Income</b>	<i>Estimate</i>	<i>Budget</i>	<i>Variance</i>
Registrations	1,156	1,050	106
Registration income	373,200	332,325	40,875
Deadbeat collections	0	0	0
Bank interest	75	60	15
Other income	17,735	0	17,735
<b>TOTAL Meeting Income</b>	<u><u>391,010</u></u>	<u><u>332,385</u></u>	58,625
<b>Meeting Expenses</b>	<i>Estimate</i>	<i>Budget</i>	<i>Variance</i>
Audio Visual Rentals	10,579	10,000	(579)
Audit	0	0	0
Bank Charges	285	278	(7)
Copying	2,600	3,500	900
Credit Card Discount	10,076	8,973	(1,104)
Equipment Expenses	50	7,000	6,950
Get IEEE 802 Contribution	86,700	78,750	(7,950)
Insurance	0	0	0
Meeting Administration	69,200	64,025	(5,176)
Misc Expenses	7,754	16,000	8,246
Network	38,638	35,888	(2,750)
Phone & Electrical	2,000	2,000	0
Refreshments	66,000	73,500 (1)	7,500
Shipping	4,000	4,000	0
Social	31,000	33,600 (2)	2,600
Supplies	100	500	400
<b>TOTAL Meeting Expense</b>	<u><u>328,982</u></u>	<u><u>338,014</u></u>	9,031
<b>NET Meeting Income/Expense</b>	<u><u>62,028</u></u>	<u><u>(5,629)</u></u>	67,656
Notes (1) Refreshments per registration	57	70	13
(2) Social per registration	27	32	5
Estimated Other Liabilities	0		
November 2003 Operating Reserve	220,259		
Projected March 2004 Operating Reserve	282,287		

4.01	II		-			01:15 PM
<b>Category (* = consent agenda)</b>			-			

5.00		<b>IEEE Standards Board Items</b>	-			01:15 PM
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5.01	ME	802.16/Conformance02/D4 to RevCom	-	Marks	5	01:15 PM
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Moved: to forward 802.16/Conformance02/D4 to RevCom.

Moved: Marks/Stevenson

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Passes: 12/0/1

5.02	ME	802.16/Conformance04 PICS for Frequencies < 11 GHz PAR to NeSCom	-	Marks	5	01:18 PM
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Moved: to forward 802.16/Conformance04 PICS for Frequencies less than 11 GHz to NeSCom.

10 Moved: Marks/Upton

## IEEE-SA Standards Board Project Authorization Request (PAR) Form (2002)

For a review of the Standards Development Process (designed to assist the Working Group, Working Group Chair, Sponsor Chair, and Society Liaison), please click here.

1. Assigned Project Number (Please contact the NesCom Administrator if this is a new PAR):  
P802.16/Conformance04

2. Sponsor Date of Request:

3. Type of Document (Please check one)

- Standard for {document stressing the verb "shall"}
- Recommended Practice for {document stressing the verb "should"}
- Guide for {document in which good practices are suggested, stressing the verb "may"}

4. Title of Document: Draft Standard for Conformance to IEEE 802.16 - Part 4: Protocol Implementation Conformance Statement (PICS) Proforma for Frequencies below 11 GHz.

5. Life Cycle

- Full Use (5-year life cycle)
- Trial Use (2-year life cycle)

6. Type of Project:

- New document
- Revision of existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)
- Amendment to an existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)
- Corrigendum to an existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)
- Revised PAR (indicate PAR Number and Approval Date here: P - (dd-mmm-yyyy))

Is this project in ballot now? No

State reason for revising the PAR in Item #18.

7. Contact information for Working Group Chair (must be an SA member as well as an IEEE and/or Affiliate Member)

Name of Working Group(WG) : IEEE 802.16 Working Group on Broadband Wireless Access

Name of Working Group Chair:

First Name: Roger Last Name: Marks

Telephone: (303) 497-3037

FAX: 303) 497-3122  
EMAIL: r.b.marks@ieee.org

8. Contact Information for Official Reporter, Project Editor or Document Custodian if different from the Working Group Chair (must be an SA member as well as an IEEE and/or Affiliate Member)

Name of Official Reporter (if different than Working Group Chair):

First Name:                      Last Name:

Telephone:

FAX:

EMAIL:

9. Contact information for Sponsoring Society or Standards Coordinating Committee

Sponsoring Society and Committee: Computer Society/Local and Metropolitan Area Networks  
Sponsor Committee Chair:

First Name: Paul              Last Name: Nikolich

Telephone: 857-205-0050

FAX: 781-334-2255

EMAIL: p.nikolich@ieee.org

I acknowledge having read and understood the **IEEE Code of Ethics**

([http://www.ieee.org/portal/index.jsp?pageID=corp\\_level1&path=about/whatis&file=code.xml&xsrl=generic.xml](http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=about/whatis&file=code.xml&xsrl=generic.xml)). I agree to conduct myself in a manner which adheres to the IEEE Code of Ethics when engaged in official IEEE business.

10. Sponsor Balloting Information (Please choose one of the following)

Choose one from the following:

Individual Balloting

Entity Balloting

Mixed Balloting (combination of Individual and Entity Balloting)

Expected Date of Submission for Initial Sponsor Ballot: 23 July 2004 (dd-mmm-yyyy)

Please review the PAR form three months prior to submitting your draft for ballot to ensure that the title, scope and purpose on the PAR form match the title, scope and purpose on the draft. If they do not match, you will need to submit a revised PAR.

Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the balloting pool.

11. Projected Completion Date for Submittal to RevCom: 25 Nov 2004 (dd-mmm-yyyy)

If this is a REVISED PAR and the completion date is being extended past the original four-year life of the PAR, please answer the following questions.

If this is not a revised PAR, please go to question #12

- a. Statement of why the extension is required:
- b. When did work on the first draft begin?:
- c. How many people are actively working on the project?:
- d. How many times a year does the working group meet in person?:
- e. How many times a year does the working group meet using electronic means (i.e. teleconference, e-mail, web-based meetings)?
- f. How frequently is a draft version circulated to the working group?:
- g. How much of the Draft is stable (Format: NN%)?: %
- h. How many significant working revisions has the Draft been through?:
- i. Briefly describe what the development group has already accomplished, and what remains to be done:

## 12. Scope of Proposed Project

[Please detail the projected output including technical boundaries.

FOR REVISED DOCUMENTS ONLY – Please detail the projected output including the scope of the original document, amendments and additions. Please be brief (less than 5 lines).]:

This standard represents the Protocol Implementation Conformance Statement (PICS) Proforma, per ISO/IEC Standard 9646-7 (1995) and ITU-T X.296, for conformance specification of base stations and subscriber stations based upon the air interface specified in IEEE P802.16-REVd for frequencies below 11 GHz.

## 13. Purpose of Proposed Project:

[Please include the following:

- The specific aims and reason for the standardization activity, with particular emphasis on the aspects of standardization to be covered, the problems to be solved or difficulties it is intended to overcome;
- Main interests that might benefit from or be affected by the activity, such as industry, consumers, trade, governments and distributors;
- Benefits to be gained by the implementation of the proposed standard; alternatively, the loss or disadvantages if no standard is established within a reasonable time;
- FOR REVISED DOCUMENTS ONLY - Purpose of the original document and reason for the document's revision. Please be brief (less than 5 lines).]:

This document describes the capabilities and options within the air interface specified for frequencies below 11 GHz in IEEE P802.16-REVd. It is to be completed by the supplier of a



product claiming to implement the protocol. It indicates which capabilities and options have been implemented. It allows a user of the product to evaluate its conformance and to determine whether the product meets the user's requirements.

14. Intellectual Property {Answer each of the questions below}

Sponsor has reviewed the IEEE patent policy with the working group?

Yes

Sponsor is aware of copyrights relevant to this project?

Yes

Sponsor is aware of trademarks relevant to this project?

No

Sponsor is aware of possible registration of objects or numbers due to this project?

No

15. Are there other documents or projects with a similar scope?

No

Explanation:

If Yes, please answer the following:

Sponsor Organization:

Project Number:

Project Date:

Project Title:

16. International Sponsor Organization

Is there potential for this document (in part or in whole) to be submitted to an international organization for review/adoption?

No {Yes/No/?? if you don't know at this time}

If Yes, please answer the following questions:

International Committee Name and Number:

International Organization Contact Information:

Contact First Name:

Contact Last Name:

Contact Telephone Number:

Contact FAX Number:

Contact E-mail address:

17. If the project will result in any health, safety, or environmental guidance that affects or applies to human health or safety, please explain, in five sentences or less.

No

18. Additional Explanatory Notes: {Item Number and Explanation}

The standard may include access to an electronic form that will produce data transferable to another party. The standard will include permission to print completed hard copies of the form for documentation purposes.

I acknowledge having read and understood the **IEEE Code of Ethics**

([http://www.ieee.org/portal/index.jsp?pageID=corp\\_level1&path=about/whatis&file=code.xml&xsl=generic.xsl](http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=about/whatis&file=code.xml&xsl=generic.xsl)). I agree to conduct myself in a manner which adheres to the IEEE Code of Ethics when engaged in official IEEE business.

The PAR Copyright Release and Signature Page must be submitted by FAX to +1 732 875 0695 to the NesCom Administrator before this PAR will be sent on for NesCom and Standards Board approval.

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**Passes: 10/0/2**

5 A ruling of the chair was requested to determine if it will be a normal way of operating that items may be presubmitted to the Standards Board without using Procedure 10.

Paul rules that there will be an exception made in this case. However, 802 needs to clarify how it will follow a RevCom presubmittal process in the future through a policies and procedures revision.

10 We will not presubmit items to RevCom without explicit approval of the EC, email ballot is acceptable.

**5.03 ME 802.16.2-REVa to RevCom - Marks 5 01:22 PM**

**Moved: to forward 802.16.2-REVa to RevCom for early consideration.  
Moved: Marks/Jeffree**

15

## Ballot Summary

P802.16.2-REVa/D8 2nd Recirculation  
Closing date: 2003-11-13

This is a recirculation ballot. The report collates the results from the following groups: 0000566 0000642 0000672.

### 1. This ballot has met the 75% returned ballot requirement.

56 eligible people in this ballot group.

47 affirmative votes  
0 negative votes with comments  
0 negative votes without comments  
2 abstention votes

=====

49 votes received = 87% returned  
4% abstention

### 2. The 75% affirmation requirement is being met.

47 affirmative votes  
0 negative votes with comments

=====

47 votes = 100% affirmative

## Ballot Details

### Coordination Responses Only

IEEE/Coord Number	Name	Role	Phone / E-mail	Coordination Ballot Received	Coordination Comment(s) Received
00601054	<a href="#">Bruce Barrow</a>	SCC14		yes	yes
00001001	<a href="#">Editorial Coordinator</a>	Editorial		yes*	yes
00001000	<a href="#">SCC10 Coordinator</a>	SCC10		yes*	yes

### Balloters

Number	Name	Phone / E-mail	Vote	T	E	Graphics	Status Notes	Interest Category
05421045	<a href="#">John Adams</a> Lucent Technologies, Inc. 138 Arnold Blvd., PO Box 712 Barnegat Light, New Jersey 08006 USA		Approve, no comments (Y)	-	-	-		General Interest
05587654	<a href="#">John Barr</a> Motorola 1303 E. Algonquin Road Schaumburg, IL 60196 USA		-	-	-	-		Producer
41549239	<a href="#">Richard Burley</a> The Rectory, Vicarage Hill Loxwood, Billingshurst, West Sussex RH14 0RG England		-	-	-	-		User
01454685	<a href="#">Edward Carley Jr</a> ICN 347 Elizabeth Ave Somerset, NJ 08873 USA		Approve, no comments (Y)	-	-	-		User
41437562	<a href="#">Remi Chayer</a> Harris Corporation - Microwave Communications Division 3 Hotel de Ville Dollard-des-Ormeaux, Quebec H9B 3G4 Canada		Approve, no comments (Y)	-	-	-		General Interest
40327708	<a href="#">Aik Chindapol</a>		Approve, no	-	-	-		General Interest

	Siemens Corporate Research 755 College Road East Princeton, NJ 08540 USA		comments (Y)					
40237493	<a href="#">Keith Chow</a> 28 Hawthorn way Cambridge, Cambs CB4 1AX UK		Approve, no comments (Y)*	-	-	-		General Interest
03210820	<a href="#">Todor Cooklev</a> San Francisco State University, School of Engineering 1600 Holloway Ave. San Francisco, CA 94132 USA		Approve, comments (Y1)	-	1	-		Government
06503270	<a href="#">Jose M. Costa</a> Nortel Networks 3500 Carling Ave., P.O. Box C-3511 Ottawa, Ontario K1Y 4H7 Canada		Approve, no comments (Y)	-	-	-		Producer
41498366	<a href="#">Robert Crutchfield</a> Single with Jesus Ministries 12414 Ledger Lane Houston, Texas 77015 United States		-	-	-	-		User
40199311	<a href="#">Thomas Dineen</a> Dineen Consulting PO Box 361801 Milpitas, CA 95036 USA		Approve, no comments (Y)	-	-	-		Producer
08972887	<a href="#">Dr. Sourav Dutta</a> V S N L 16th Flr, HQ, VSB, M G Road, Fort Mumbai, MH 400001 INDIA		Approve, no comments (Y)	-	-	-		General Interest
08518995	<a href="#">Avraham Freedman</a> Hexagon System Engineering Ltd. 21c Yegi'a Kapai'im St. Petach Tikva, N/A 49001 Israel		Approve, no comments (Y)	-	-	-		General Interest
41441328	<a href="#">Ernesto Garcia</a> RM Loma hermosa 22-b-107 mexico, distrito federal 11200 mexico		Approve, no comments (Y)*	-	-	-		User
41348507	<a href="#">Theodore Georgantas</a> Athena Semiconductors Poseidonos 75 Alimos - Athens, Attika 17455 Greece		Abstain for lack of time (A1)	-	-	-		Producer
41414896	<a href="#">Andrew Germano</a> WiDeFi, Inc. 476 Highway A1A Satellite Beach, Florida 32937 USA		Approve, no comments (Y)	-	-	-		General Interest
01883768	<a href="#">James Gilb</a> Appairant Technologies 15373 Innovation Dr. San Diego, CA 92128 USA		Approve, comments (Y1)	1	1	2		User

05995253	<a href="#">Brian Kiernan</a> InterDigital Comm Corp 781 Third Ave. King of Prussia, PA 19406 USA		Approve, no comments (Y)*	-	-	-		General Interest
41304605	<a href="#">Pi-Cheng Law</a> Chunghwa Telecom Labs. P.O.Box 6-14 Yang-Mei, Taoyuan 326 Taiwan		Approve, no comments (Y)*	-	-	-		User
08108896	<a href="#">Yeou-Song Lee</a> Anritsu 490 Jarvis Drive Morgan Hill, CA 95037 U.S.A.		Approve, no comments (Y)	-	-	-		User
03062650	<a href="#">Jan-Ray Liao</a> National Chung Hsing University Dept of Electrical Engineering Taichung, Taiwan 402 Taiwan		Approve, no comments (Y)*	-	-	-		General Interest
40255444	<a href="#">Christina Lim</a> Photonics Research Laboratory Dept. of Electrical and Electronic Eng. The University of Melbourne, VIC 3010 Australia		Approve, no comments (Y)	-	-	-		General Interest
01622778	<a href="#">Randolph Little</a> AT&T - retired 111 Berkeley Circle Basking Ridge, NJ 07920-2009 USA		Approve, no comments (Y)*	-	-	-		General Interest
05845615	<a href="#">Gregory Luri</a> CITY OF ST. CHARLES 2 East Main Street ST. CHARLES, IL 60174-1984 USA		Approve, no comments (Y)	-	-	-		User
41273459	<a href="#">Ryan Madron</a> 6083 N. Figarden Dr. PMB 154 Fresno, CA 93722 USA		Approve, no comments (Y)	-	-	-		General Interest
41265401	<a href="#">Nikolai Malykh</a> BiLiM Systems 80, Sedova str. St. Petersburg, RU 193171 Russia		-	-	-	-		User
08122103	<a href="#">Roger B. Marks</a> NIST 325 Broadway, Mail Code 813.00 Boulder,, CO 80305-3328 U.S.A.		Approve, comments (Y1)	1	-	1		Government
40266634	<a href="#">Ingolf Meier</a> Infineon Technologies Flussgasse 9/4/9 Villach, Carinthia A-9500 Austria		Approve, no comments (Y)*	-	-	-		Producer
01271899	<a href="#">George Miao</a> 2 Inverness Drive Marlboro, NJ 07746 USA		Approve, no comments (Y)*	-	-	-		General Interest
40232349	<a href="#">Narayanan Murugesan</a>		Approve, no	-	-	-		General Interest

	Cisco Systems 170 W Tasman Dr San Jose, CA 95134 USA		comments (Y)*					
07446628	<a href="#">Michael Newman</a> csi telecommunications 750 battery street, Suite 350 san francisco, CA 94109 USA		Approve, no comments (Y)	-	-	-		User
07858459	<a href="#">Paul Nikolich</a> consultant 18 Bishops Lane Lynnfield, MA 01940 USA		Abstain for lack of time (A1)	-	-	-		General Interest
02439719	<a href="#">Stephen Palm</a> Broadcom 16215 Alton Parkway Irvine, CA 92618 USA		Approve, no comments (Y)	-	-	-		General Interest
41458692	<a href="#">Ashley Peacock</a> Albany Molecular Research 21 Corporate Cl albany, NY 12084 USA		Approve, no comments (Y)	-	-	-		User
00353235	<a href="#">Subbu Ponnuswamy</a> SP Wireless 1005 Blue Ravine Road, #926 Folsom, CA 95630 USA		Approve, no comments (Y)	-	-	-		General Interest
01453273	<a href="#">Vikram Punj</a> Cypress Semiconductor 6558 Leyland Park Ct San Jose, CA 95120 USA		Approve, no comments (Y)*	-	-	-		Producer
40266494	<a href="#">Eugene Robinson</a> E.A.Robinson Consulting, Inc. 1200 Lake Point Circle McKinney, Texas 75070 USA		Approve, no comments (Y)	-	-	-		General Interest
40318291	<a href="#">Thomas Sapiano</a> Box 386 Kleinburg, Ontario L0J1C0 Canada		Approve, no comments (Y)	-	-	-		General Interest
41497319	<a href="#">John Sarallo</a> Appairtent Technologies Inc. 150 Lucius Gordon Drive West Henrietta , NY 14586 USA		Approve, no comments (Y)	-	-	-		Producer
40283080	<a href="#">John Sargent</a> Wireless Facilities Inc. 1800 Michael Faraday Dr Reston, VA 20190 USA		Approve, no comments (Y)	-	-	-		General Interest
40156964	<a href="#">Neil Shipp</a> Commsonic 45 Belgrave Rd Cambridge, Cambridgeshire CB1 3DE UK		Approve, no comments (Y)*	-	-	-		General Interest
01109156	<a href="#">Gil Shultz</a>		Approve, no	-	-	-		General Interest

	Yazaki 6801 Haggerty Rd Canton, MI 48187 USA		comments (Y)*					
41545744	<a href="#">Yoram Solomon</a> Texas Instruments 141 Stony Cir., Suite #210 Santa Rosa, CA 95401 USA		Approve, no comments (Y)	-	-	-		Producer
41392686	<a href="#">Kenneth Stanwood</a> Ensemble Communications 9890 Towne Centre Dr. San Diego, CA 92121 USA		Approve, no comments (Y)	-	-	-		Producer
41523364	<a href="#">Adrian Stephens</a> Intel Corporation 15 JJ Thompson Ave Cambridge, Cambridge CB3 0FD United Kingdom		Approve, no comments (Y)	-	-	-		Producer
40224483	<a href="#">Carl Stevenson</a> Agere Systems 4991 Shimerville Road Emmaus, PA 18049 USA		Approve, no comments (Y)	-	-	-		Producer
41315013	<a href="#">Mark Tillinghast</a> National Technical Systems 5730 Buckingham Parkway Culver City, California 90230 United States		-	-	-	-		Producer
40110110	<a href="#">Scott Valcourt</a> University of New Hampshire 121 Technology Drive Suite 2 Durham, NH 03824 USA		Approve, no comments (Y)	-	-	-		General Interest
03239332	<a href="#">Joan Viaplana</a> Auna Telecomunicaciones Josep Pla, 15 Arenys de Munt, Barcelona 08358 Spain		Approve, no comments (Y)	-	-	-		General Interest
41278416	<a href="#">Hung-yu Wei</a> Columbia Univ 600, W120th St. New York, NY 10027 USA		Approve, no comments (Y)	-	-	-		General Interest
04702171	<a href="#">Patrick Yu</a> ALi Microelectronics Corp., USA 1856 Tersini Court San Jose, CA 95131 USA		Approve, no comments (Y)	-	-	-		Producer
05907266	<a href="#">Oren Yuen</a> 1504 Steinhart Ave Redondo Beach, CA 90278 United States		Approve, no comments (Y)	-	-	-		User
40223729	<a href="#">apurva mody</a> Georgia Institute of Technology 541, 10th St. NW., #201 Atlanta, GA 30318 USA		Approve, no comments (Y)	-	-	-		User
41454280	<a href="#">charles ngethe</a>		-	-	-	-		User



	KWS langata road Nairobi, Nairobi 00400 kenya						
41249250	<a href="#">Nico van Waes</a> Nokia 313 Fairchild Dr Mountain View, CA 94043 USA		Approve, no comments (Y)	-	-	-	General Interest
41522788	<a href="#">Karl weber</a> siemens zur schanze 5 altdorf, germany 90518 germany		-	-	-	-	User
<b>Comment Totals *</b>				2	2	3	
<p>(*) You have at least these many comments: each unstructured binary file (i.e., Word) is counted as a single G file, which may consist of one or hundreds of individual T and E comments.</p> <p>* This ballot cast this ballot in the current circulation of this recirc ballot.</p>							

**Summary of Eligible Voters by Interest Category**

Interest Category	Affirmative(s)	Negative(s) with Comments	Negative(s) without Comments	Abstention(s)	Not Returned	Total
User	10	0	0	0	5	15
Producer	10	0	0	1	2	13
General Interest	25	0	0	1	0	26
Government	2	0	0	0	0	2
<b>Voting Tally</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>7</b>	<b>56</b>

<b>Abstention details:</b>	2 for lack of time (A1)	0 for lack of expertise (A2)	0 for other reasons (A3)
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An opinion was expressed that a target date for submission be included in motions such as these.  
Roger indicated that he would submit this for early consideration as soon as he has completed the submittal package.

5 **Passes: 12/0/0**

5.04 ME 802.21 PAR on Media Independent Handover to NeSCom - Johnston 5 01:25 PM

## IEEE-SA Standards Board Project Authorization Request (PAR) Form (2002)

For a review of the Standards Development Process (designed to assist the Working Group, Working Group Chair, Sponsor Chair, and Society Liaison), please click here.

1. Assigned Project Number (Please contact the NesCom Administrator if this is a new PAR):  
**P802. 21**

2. Sponsor Date of Request: 14 November 2003

3. Type of Document (Please check one)

- Standard for {document stressing the verb "shall" }  
 Recommended Practice for {document stressing the verb "should" }  
 Guide for {document in which good practices are suggested, stressing the verb "may" }

4. Title of Document: Draft Media Independent Handover Services

5. Life Cycle

- Full Use (5-year life cycle)  
 Trial Use (2-year life cycle)

6. Type of Project:

- New document  
 Revision of existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)  
 Amendment to an existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)  
 Corrigendum to an existing document (indicate Number and year existing standard was published in box to the right) (####-YYYY)  
 Revised PAR (indicate PAR Number and Approval Date here: P - (dd-mmm-yyyy)

Is this project in ballot now? No

State reason for revising the PAR in Item #18.

7. Contact information for Working Group Chair (must be an SA member as well as an IEEE and/or Affiliate Member)

Name of Working Group(WG) : **802. 21**

Name of Working Group Chair:

First Name: **David** Last Name: **Johnston**

Telephone: 503 264 3855

FAX: 503 264 3483  
EMAIL: david.johnston@ieee.org

8. Contact Information for Official Reporter, Project Editor or Document Custodian if different from the Working Group Chair (must be an SA member as well as an IEEE and/or Affiliate Member)

Name of Official Reporter (if different than Working Group Chair):

First Name: Last Name:

Telephone:

FAX:

EMAIL:

9. Contact information for Sponsoring Society or Standards Coordinating Committee

Sponsoring Society and Committee: C/LM

Sponsor Committee Chair:

First Name: Paul Last Name: Nickolich

Telephone: 781 334-6524

FAX: 781 334-2255

EMAIL: p.nickolich@ieee.org

I acknowledge having read and understood the **IEEE Code of Ethics**

([http://www.ieee.org/portal/index.jsp?pageID=corp\\_level1&path=about/whatis&file=code.xml&xsl=generic.xsl](http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=about/whatis&file=code.xml&xsl=generic.xsl)). I agree to conduct myself in a manner which adheres to the IEEE Code of Ethics when engaged in official IEEE business.

10. Sponsor Balloting Information (Please choose one of the following)

Choose one from the following:

Individual Balloting

Entity Balloting

Mixed Balloting (combination of Individual and Entity Balloting)

Expected Date of Submission for Initial Sponsor Ballot: 14 November 2005 (dd-mmm-yyyy)

Please review the PAR form three months prior to submitting your draft for ballot to ensure that the title, scope and purpose on the PAR form match the title, scope and purpose on the draft. If they do not match, you will need to submit a revised PAR.

Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the balloting pool.

11. Projected Completion Date for Submittal to RevCom: 31 May 2006 (dd-mmm-yyyy)

If this is a REVISED PAR and the completion date is being extended past the

original four-year life of the PAR, please answer the following questions.  
If this is not a revised PAR, please go to question #12

- a. Statement of why the extension is required:
- b. When did work on the first draft begin?:
- c. How many people are actively working on the project?:
- d. How many times a year does the working group meet in person?:
- e. How many times a year does the working group meet using electronic means (i.e. teleconference, e-mail, web-based meetings)?
- f. How frequently is a draft version circulated to the working group?:
- g. How much of the Draft is stable (Format: NN%)?:            %
- h. How many significant working revisions has the Draft been through?:
- i. Briefly describe what the development group has already accomplished, and what remains to be done:

## 12. Scope of Proposed Project

[Please detail the projected output including technical boundaries.

FOR REVISED DOCUMENTS ONLY – Please detail the projected output including the scope of the original document, amendments and additions. Please be brief (less than 5 lines).]:

This standard defines extensible 802 media access independent mechanisms that enable the optimization of handover between heterogeneous 802 systems and may facilitate handover between 802 systems and cellular systems

## 13. Purpose of Proposed Project:

[Please include the following:

- The specific aims and reason for the standardization activity, with particular emphasis on the aspects of standardization to be covered, the problems to be solved or difficulties it is intended to overcome;
- Main interests that might benefit from or be affected by the activity, such as industry, consumers, trade, governments and distributors;
- Benefits to be gained by the implementation of the proposed standard; alternatively, the loss or disadvantages if no standard is established within a reasonable time;
- FOR REVISED DOCUMENTS ONLY - Purpose of the original document and reason for the document's revision. Please be brief (less than 5 lines).]:

The purpose is to improve the user experience of mobile devices by facilitating handover between 802 networks whether or not they are of different media types, including both wired and wireless, where handover is not otherwise defined and to make it possible for mobile devices to perform seamless handover where the network environment supports it. These mechanisms may also be useable for handovers between 802 networks and non 802 networks.

14. Intellectual Property { Answer each of the questions below }

Sponsor has reviewed the IEEE patent policy with the working group?

Yes

Sponsor is aware of copyrights relevant to this project?

No

Sponsor is aware of trademarks relevant to this project?

No

Sponsor is aware of possible registration of objects or numbers due to this project?

Yes

15. Are there other documents or projects with a similar scope?

No

Explanation:

If Yes, please answer the following:

Sponsor Organization:

Project Number:

Project Date:

Project Title:

16. International Sponsor Organization

Is there potential for this document (in part or in whole) to be submitted to an international organization for review/adoption?

No{ Yes/No/?? if you don't know at this time }

If Yes, please answer the following questions:

International Committee Name and Number:

International Organization Contact Information:

Contact First Name:

Contact Last Name:

Contact Telephone Number:

Contact FAX Number:

Contact E-mail address:

17. If the project will result in any health, safety, or environmental guidance that affects or applies to human health or safety, please explain, in five sentences or less.

18. Additional Explanatory Notes: {Item Number and Explanation}

4 We define handover as the maintenance of sessions and/or service flows while connectivity is moved from one point of attachment to another.

12 &13 The scope and purpose are derived from the need to address the following three problems that were identified during the study group phase:

- #1 Detection of a useable attachment to a network is impacted by the ambiguous indicators of network attachment in certain 802 MACs. Thus there is a need to develop a standard that allows a mobile terminal to optimize detection of a useable attachment to a network above the LLC.
- #2 The information necessary to make effective handover decisions is lacking in part because the 802 networks provide insufficient information to the upper layers. Thus there is a need to develop a standard that permits information exchange between mobile terminals and/or networks to enable mobile terminals and/or networks to make more effective handover decisions.
- #3 There is no standardized mechanism in 802 for information exchange between mobile terminals and network attachment points. This impacts the ability to make informed decisions to select between disparate network attachment points or to initiate handover between heterogeneous network types or between administrative domains within a single network type. Thus there is a need to develop a standard that permits mobile terminals and network attachment points to access information on which to base effective handover decisions.

14. There is the possibility of requiring a new ethertype to support a protocol to exchange handover related information in a media access independent manner.

I acknowledge having read and understood the **IEEE Code of Ethics** ([http://www.ieee.org/portal/index.jsp?pageID=corp\\_level1&path=about/whatis&file=code.xml&xsl=generic.xml](http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=about/whatis&file=code.xml&xsl=generic.xml)). I agree to conduct myself in a manner which adheres to the IEEE Code of Ethics when engaged in official IEEE business.

The PAR Copyright Release and Signature Page must be submitted by FAX to +1 732 875 0695 to the NesCom Administrator before this PAR will be sent on for NesCom and Standards Board approval.

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IEEE-SA Standards Board  
Working Guide for the Project Authorization Request (PAR) Form

This guide has been prepared to assist in the submittal of the PAR for consideration by the New Standards Committee (NesCom) and approval by the IEEE-SA Standards Board as an IEEE Standards Project. Submitters should also refer to the latest edition of the IEEE-SA Standards Board Operations Manual.

A PAR must be received by the IEEE-SA Standards Department at least 40 calendar days before the next IEEE-SA Standards Board meeting. Submittal deadlines for the year 2003 are available on our website at <http://standards.ieee.org/board/nes/2003nescalendar.pdf>. Please note that the PAR may be approved via our continuous processing program. For more information on this program, please go to our website at <http://standards.ieee.org/faqs/contproc.html>.

#### 1. Assigned Project Number

New Standards Projects: Leave blank.

Standards Revision/Update: Enter document number from existing document.

Note: New project numbers are assigned by the IEEE Standards Department. Please confer with IEEE staff if a specific project number is desired.

#### 2. Sponsor Date of Request

Enter the date when the PAR is submitted to the IEEE-SA.

#### 3. Type of Document

For the submitter's reference, standards are documents with mandatory requirements and are generally characterized by the use of the verb "shall."

Recommended practices are documents in which procedures and positions preferred by IEEE are presented and are generally characterized by the use of the verb "should."

Guides are documents in which alternative approaches to good practice are suggested, but no clear-cut recommendations are made. They are generally categorized by the use of the verb "may."

#### 4. Title of Document

Enter the title of the document.

The project title should include the type of document. For example:

1. Standard Test Method for...
2. Recommended Practice for...
3. Guide for...

The title should not contain the acronym "IEEE". This is added to the title when published.



All acronyms should be spelled out.

## 5. Life Cycle

A document can be designated trial-use or full-use.

A document can be designated for trial use when a draft satisfies the standards-developing group (i.e., subcommittee or working group), but needs input from a very broad constituency. This is a preferred alternative to the widespread distribution of unapproved drafts. Such a draft requires a letter ballot of the sponsor and approval by the IEEE-SA Standards Board as a trial-use document. Trial-use documents are effective for not more than two years from the date of publication. In the absence of comments received in the trial period, the document is subject to adoption as a full-use document upon receipt of written recommendation from the sponsor and approval by the IEEE-SA Standards Board.

## 6. Type of Project

Indicate whether this work will result in a new document, a revision of an existing document (indicate document number and year), an amendment (formerly supplement) to an existing document (indicate document number and year), or a corrigendum (indicate document number and year). Amendments are additions to existing documents and may contain substantive corrections and/or errata to the document. Corrigenda are substantive corrections and/or errata to a document.

If this is an update to an existing PAR, indicate the original PAR number, approval date and ballot status.

If this is a PAR revision, provide a short explanation of the changes to the original PAR. Rationale MUST be submitted with the PAR revision request under Item #18.

## 7. Contact Information for Working Group Chair

Indicate the Name, Telephone Number, FAX Number and E-mail address of the Working Group (WG) Chair. The Working Group Chair must be an SA member as well as an IEEE and/or Affiliate Member. IEEE/IEEE-SA membership number is required.

## 8. Contact Information for Official Reporter, Project Editor or Document Custodian

Indicate the Name, Telephone Number, FAX Number and E-mail address of the Official Reporter, Project Editor or Document Custodian if different from the Working Group Chair. The Official Reporter must be an SA member as well as an IEEE and/or Affiliate Member. IEEE/IEEE-SA membership number is required.

## 9. Contact Information for Sponsoring Society or Standards Coordinating Committee

Enter the name of the sponsoring society and the name of the sponsoring committee (i.e., Power Engineering/Switchgear, not PE/SWG) responsible for the development and coordination of the

project and for the maintenance of the document after approval by the Standards Board. The name entered here should not be confused with the name of the group writing the document. If the project is sponsored by two or more committees, enter all committee names and indicate that the work is a jointly sponsored project. When a Standards Coordinating Committee (SCC) is developing the document, enter the SCC number and name as the sponsor (i.e., Standards Coordinating Committee 4 - Thermal Rating).

#### 10. Sponsor Balloting Information:

Is the balloting group for this project expected to be composed of individuals, of entities (persons representing corporations/government bodies/academic institutions, or SDO's), or a combination of both? See Section 5.4.1 in the IEEE-SA Standards Board Operations Manual for further explanation.

For the expected date of submission for initial balloting entry, enter the date the draft document is planned to be submitted to the IEEE for balloting. Make the entry in numerical dd-mmm-yyyy format.

Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the balloting pool.

#### 11. Projected Completion Date for Submittal to RevCom

Enter the date the draft document is planned to be submitted to RevCom for processing. Make the entry in numerical dd-mmm-yyyy format (not to exceed four years from the date of PAR submission). Cutoff dates for submitting draft documents to RevCom are generally in February, May, August and October. Check the appropriate calendars for the specific date as the draft matures. Use a best estimate for the PAR.

#### 12. Scope of Proposed Project

The submittal should clearly and concisely define the scope of the document. The scope generally describes "what" will be done, i.e. the technical boundaries of the project. For example:

"Scope: This project will develop a standard protocol for the control of printers. This protocol will be independent of the underlying datastream or page description language used to create the printed page. This protocol will be usable by all classes of printers. This project is limited to management and control of printers and will not include management or control of printing systems or subsystems."

The Scope of a revision to a document or a revision to the Scope of an existing PAR shall represent the new Scope. If the Scope is different from the original Scope, provide an indication of the differences in Item #18.

#### 13. Purpose of Proposed Project

The submittal should clearly and concisely define the purpose of the document. The purpose generally describes "why" a project will be done. For example:

"Purpose: There is currently no defined, independent standard for controlling printers. Each vendor builds some control into the underlying page description language or datastream. Without an independent, openly defined protocol, applications and operating systems cannot automatically determine the type of printer being addressed. This protocol will provide a minimum implementation subset which will allow automatic identification and configuration of printers and vendor extensibility to provide for growth and product differentiation."

The purpose of the document should be consistent with the description of the document in Item 3, the title in Item 4, and the scope in Item 12. If the title of the document is "Guide for...", it is inconsistent if the purpose states "This document will describe standard criteria..."

The scope, purpose and/or title indicated on the PAR should agree in principle with the scope, purpose and/or title stated in the document at the time of submittal to the IEEE-SA Standards Board.

If this is a PAR to revise the document, explain here why changes are being made to the document. This may be due to a change in industry, the introduction of new technology, etc.

The Purpose of a revision to a document or a revision to the Purpose of an existing PAR shall represent the new Purpose. If the Purpose is different from the original Purpose, provide an indication of the differences in Item #18.

#### 14. Intellectual Property

If an IEEE standards-developing committee chooses to include patented technology in its document, early disclosure of these patents is valuable. Early disclosure notifies the standards developers and the IEEE of the patent in the most timely manner and gives participants the greatest opportunity to evaluate the benefits the patented technology may offer a draft document. However, the standards developers should not take any action that could be interpreted as requiring any participant in the development process to undertake a patent search of its own portfolio or of any other. The objective is to obtain early disclosure concerning the existence of patents, where known.

If the proposed document uses copyrighted material, copyright releases must be obtained by the working group and included in the final package submitted to the IEEE-SA Standards Board. Additionally, remember that during development of your approved project, the proper IEEE copyright notices must be maintained on all drafts.

If the proposed document uses any trademarked terms, permission for use must be obtained from the owner. Refer to Section 6 of the IEEE-SA Standards Board Operations Manual for IEEE patent, copyright, and trademark policies.

If the proposed document will require the unique identification of objects or numbers by the IEEE for use in industry, this should be indicated. An example of this type of registration is the unique manufacturer ID, known as Organizationally Unique Identifier (OUI).

15. Are there other documents or projects with a similar scope?

Identify any document(s) or project(s) of similar scope(s), both within or outside of the IEEE, and explain the need for an additional document in this area.

16. International Sponsor Organization

If the project is intended to be submitted to the appropriate international technical committee as the basis of or for inclusion in an international document, or if this document is intended to be adopted as the international document, this should be noted here. It is important for all working group members to be aware of international activity within their area of technical expertise.

17. If this document is intended to contain subject matter that addresses significant health, safety or environmental issues that affects or applies to human health or safety, please identify the issues in less than five lines

If this document contains any intended significant health, safety or environmental issues, as they apply to human health, then please explain this. This does NOT apply to safety of the equipment, building, etc. not directly related to human health.

18. Additional Explanatory Notes:

If this is a revised PAR or a PAR for the revision of a document, a short explanation of the changes to the original PAR and rationale MUST be submitted under this item.

If you know of any further information that may assist NesCom in recommending approval for your project, please include this information here.

Copyright Form (separate page)

The copyright form, the last page in the electronic PAR form (and a separate page), must be submitted by FAX to the IEEE-SA office before the PAR can be approved. In order to comply with US copyright law, the IEEE and its legal counsel request that a copyright agreement be signed by the Official Reporter, who is usually the chair of the working group. This signed copyright agreement is an official part of the IEEE Standards Project Authorization Request (PAR). The PAR will not be submitted to the IEEE-SA Standards Board until the copyright agreement is signed by the proper person.

If you have any questions, please contact the NesCom Administrator.

## 802 Handoff ECSG

### CRITERIA FOR STANDARDS DEVELOPMENT (FIVE CRITERIA)

#### *Broad Market Potential*

*A standards project authorized by IEEE 802 shall have a broad market potential. Specifically, it shall have the potential for:*

- a) Broad sets of applicability.*
- b) Multiple vendors and numerous users.*
- c) Balanced costs (LAN versus attached stations).*

**An 802 handover standard would be applicable to 802 media types, both wired and wireless. For example handover between 802.3 and 802.11 within a single mobile station is a plausible application of such a standard.**

**A key requirement for generalized seamless handover is that handover can occur between administrative domains either within the same technology, or between different technologies. Thus the standard will be applicable to vendors of network services as well as vendors of multiple equipment types.**

**A wide variety of vendors currently build numerous wired and wireless products for the network equipment market segments. It is expected that the majority of those vendors, and others, will participate in the standards development process and subsequent commercialization activities.**

**50 individuals from 30 different organizations have attended the study group sessions**

**The likely mechanisms through which 802 handover can be achieved are message passing protocols that are implemented within 802 compatible devices. Handover mechanisms common in existing mobile systems, such as 802.11 and cellular systems indicate that software will be the most common implementation medium for these protocols. This is unlikely to represent a major factor in the unit cost of networking devices adopting a handover standard, whether for LAN equipment or attached stations.**

**This standard shall facilitate optimization of Mobile IP handover, however this does not preclude the standard from being used to optimize handovers of other layer 3 protocols.**

**Neither security algorithms nor security protocols shall be defined in the specification. This does not preclude the propagation of authentication or authorization information to support network detection and selection.**

#### *Compatibility*

*IEEE 802 defines a family of standards. All standards shall be in conformance with the IEEE 802.1 Architecture, Management and Interworking documents as follows: 802. Overview and Architecture, 802.1D, 802.1Q and parts of 802.1f. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with 802. Each standard in the IEEE 802 family of standards shall include a definition of managed objects which are compatible with systems management standards.*

- 1. The proposed project will be developed in conformance with the 802 Overview and Architecture.**
- 2. The proposed project will be developed in conformance with 802.1D, 802.1Q, 802.1f.**
- 3. Managed objects will be defined consistent with existing policies and practices for 802.1 standards.**

**Consideration will be made to ensure compatibility with the 802 architectural model including at least 802, 802.2, 802.1D, 802.1f, 802.1Q, and 802.1X.**

**Consideration will be made to ensure that compatibility is maintained with 802 security mechanisms and that existing security is not compromised.**

### ***Distinct Identity***

*Each IEEE 802 standard shall have a distinct identity. To achieve this, each authorized project shall be:*

- a) Substantially different from other IEEE 802 standards.*
- b) One unique solution per problem (not two solutions to a problem).*
- c) Easy for the document reader to select the relevant specification.*

- 1. Existing 802 standards provide handover within 802 networks. There are no 802 standards to support handover between heterogeneous network types.**
- 2. The need for layer 2 triggers is arising out of fast mobile IP work and cellular networks. 802 has no standards to meet these requirements at layer 2.**
- 3. Existing 802 standards provide diverse mechanisms for detection and selection of network attachment points. There are no standards to enable detection and selection of network attachment point in a media access independent way within 802.**

### ***Technical Feasibility***

*For a project to be authorized, it shall be able to show its technical feasibility. At a minimum, the proposed project shall show:*

- a) Demonstrated system feasibility.*
- b) Proven technology, reasonable testing.*
- c) Confidence in reliability*

**Handover is a common mechanism, present in many systems such as cellular systems or 802.11 ESSs. Mobile IP, in both v4 and v6 forms, has shown that roaming across heterogeneous systems is possible. Work in the IETF SEAMOBY, TRIGTRAN, CAPWAP/LWAPP projects has highlighted the need for greater interaction between 802 MAC and PHY layers and a roaming layer 3 in order to coordinate smoother, faster handovers. Accordingly it is clear that roaming within the confines of different 802 technologies is feasible and that approaches that might be adopted for roaming at higher layers are feasible. Since the IETF has published in draft form, a role that 802 networks can play in higher layer (above the LLC) handover it is clear that it is possible to incorporate such mechanisms into the 802 framework.**

**The proven ability to handover within 802.11 networks, within cellular networks and within IP networks has proved a minimum set of capabilities for mobile technologies.**

**The nature of message passing protocols is such that the timing and passage of the messages is subject to observation and testing. Methods of testing interruptions to established sessions while being handed over are well established in telephony and data networking practices.**

**Neither security algorithms nor security protocols shall be defined in the specification. This does not preclude the propagation of authentication or authorization information to support network detection and selection.**

**This standard will provide services both across an 802 link and to upper layers to**

- **Facilitate the optimization of detection and selection of networks**
- **Provide a source of extensible and semantically defined information to facilitate optimized handover decision making**
- **Provide a mechanism to access this information over an 802 link.**
- **Provide triggers to upper layers**

### ***Economic Feasibility***

*For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated), for its intended applications. At a minimum, the proposed project shall show:*

- a) Known cost factors, reliable data.*
- b) Reasonable cost for performance.*
- c) Consideration of installation costs.*

**Handover procedures have been implemented within cellular networks, mobile IP networks and in media access dependent ways in 802 networks.**

**Cellular systems and 802.11 systems provide real world examples of handover mechanisms within homogeneous networks at layers 1 and 2 (PHY and MAC),**

**whereas mobile IP provides an example of a successful implementation of a layer 3 handover mechanism across heterogeneous networks.**

**These have been proven to be cost effective solutions.**

**The functionality that would be described in the specification represents a marginal increment to the feature set and cost of networking devices and does not represent an originating cost.**



**Moved: to forward the PAR for 802.21 on Media Independent Handoff to NeSCom for approval.**

**Moved: Marks/Kerry**

5 802.16 has a directed position by unanimous vote to support this PAR.

Confusion was expressed about “media independent”, since this is working at a level which is different from that which is used by other groups, such as “media independent interface”. These comments were not submitted to the study group earlier in the week.

10

An opinion was expressed that there is a serious problem with the scope. The work seems to be more appropriately called “MAC independent handoff”.

15

A point was raised that the motion presupposes that the work will be placed in a new working group, without any explicit discussion on the topic.

It was pointed out that the PAR was distributed to the EC according to the 30-day advance rule, including the scope, title, and placement. Comments on these topics were to be provided to the study group by Tuesday evening.

20

An opinion was expressed that the traditional place for work that bears on the architecture, and this does bear on the architecture, is 802.1. 802.1 would work to address the concerns expressed by the study group.

**Passes: 8/2/3**

25

**5.05 ME 802.1F reaffirmation to RevCom - Jeffree 2 01:45 PM**

**Moved: 802.1 requests approval from the EC to forward the 802.1F Reaffirmation to RevCom.**

**Moved: Jeffree/Thompson**

30

An opinion was expressed that 802.1F is a prime example of a standard that should be moved to “senior” status, rather than need to continue to require reaffirmation. Geoff pointed out that he is working with the Standards Board to make this status a reality.

The chair of 802.3 expressed gratitude for the effort of 802.1 to keep this standard alive.

35

**Passes: 13/0/0**

**5.06 ME 802b to RevCom under Procedure 10 - Jeffree 2 01:47 PM**

**Moved: 802.1 requests conditional approval from the EC to forward 802b to RevCom following successful completion of its upcoming Sponsor recirculation ballot.**

40

**Moved: Jeffree/Rigsbee**

**Passes: 13/0/0**

**5.07 ME 802.1X-REV to Sponsor Ballot under Procedure 10 - Jeffree 2 01:49 PM**

45

**Moved: 802.1 requests conditional approval from the EC to forward 802.1X-REV to sponsor ballot following successful completion of its WG recirculation ballot.**

**Moved: Jeffree/Stevenson**

**Passes: 13/0/0**

50

**5.08 ME 802.1D-REV to RevCom - Jeffree 2 01:53 PM**

**Moved: 802.1 requests conditional approval from the EC to forward the 802.1D-REV to RevCom following successful completion of the Sponsor recirculation that is currently in progress.**

**Moved: Jeffree/Stevenson**

55

Tony will not submit this to RevCom if there are any additional balloters that support this one negative balloter.

**Passes: 13/0/0**

5

**5.09 ME "Key Agreement" PAR to NeSCom - Jeffree 5 01:56 PM**

**Moved: 802.1 requests permission from the EC to forward the 802.1af key agreement PAR to NeSCom**

**Moved: Jeffree/Marks**

**Passes: 13/0/0**

10

**5.10 ME 802.17 to Sponsor Ballot - Takefman 5 01:59 PM**

**Moved: 802.17 requests the EC to forward 802.17 to Sponsor Ballot.**

**Moved: Takefman/Quackenbush**



# IEEE 802.17 Resilient Packet Ring

Request for Approval to Forward  
802.17 D3.0 to Sponsor Ballot

Michael Takefman, Chair

# D2.7 Summary

- Passed with Approve 62, Disapprove 6, Abstain 2
  - Comment resolution on D2.7 yielded no changes to the draft
  - 4 technical binding comments
    - Commenter explicitly flagged comments as an old issue that he had raised before and did not want to delay start of sponsor, however he wanted them included in the sponsor ballot package
    - The chair concurs these comments do not represent a new issue
    - The issue revolves around support for ITU-T X.87 with RPR as the MAC layer in a non bridged environment causing bridges to flood excessively
  - 29 editorial comments / 68 technical non-binding comments
    - No substantive technical issues were raised
    - Minor improvements that were not significantly impacting understanding or implementation
    - All comments were rejected or withdrawn with the consent of the commenter

# WG Ballot History

Draft	Approve	Disapprove	Abstain	Pass Rate
D2.3	50	16	4	75.8%
D2.4	54	12	4	81.8%
D2.5	57	10	3	85.1%
D2.6	60	7	3	89.6%
D2.7	62	6	2	91.2%

- Return Rate 86%, Abstain Rate 5.7% to 2.9%

# Disapprove Voters

Voter	Unresolved TB Rejects	Unresolved TB Accept Modify
Kshitij Kumar	2	2
Vahid Naragi	2	
Nader Vijeh	1	1
Robert Castellano	5	
David James	6	
Harmen van As*		

\* Comment resolved with suggested remedy – commenter does not reply to email

# Plan Moving Forward

- Start Sponsor Ballot
  - late November / early December
  - CR begins @ January interim
    - continues in March, April, May, June ...
- Revcom submittal
  - June 2004 meeting / September 2004 meeting

# 802.17 WG Motions

- Move to rename P802.17 D2.7 to P802.17 D3.0 and remove change-bars.

M: Alexander                      S: Lemon

– Y:27                      N:0                      A:0

- Move to request 802 EC to forward 802.17 D3.0 to Sponsor Ballot.

M: Alexander                      S: Lemon

– Y:27                      N:0                      A:0





# EC Motion

- Move to forward 802.17 D3.0 to Sponsor Ballot

M: Takefman                      S:

– Y:                                  N:                                  A:

Summary of D2.7 Recirculation Ballot

D2.7 closed on Wednesday morning at 11am ABQ time.

5  
There were no new disapprove voters and the final tally of votes was Approve 62, Disapprove 6, Abstain 2 yielding an approve ratio of 91.2% and a return ratio of 86%. One disapprove voter had his one comment resolved as requested, but has not returned email queries as to his satisfaction.

10  
There were 101 comments received on D2.7, which include 4 Technical Binding, 68 Technical Non-binding, and 15 29 Editorial comments.

No changes were made to the draft as all comments were rejected or withdrawn as:  
20 - no substantive technical issues were raised  
- the comments were minor improvements that were not significantly impacting understanding or implementation

The WG voted 27:0:0 (Y:N:A) to forward the draft to sponsor ballot. Three of the six outstanding negative voters voted to approve forwarding the draft (the other three commentors were not present).

25  
The 4 technical bindings came from a single commenter (Robert Castellano) and he marked the comments as not being a new issue. I concur that the issue raised was one that the group rejected in the previous draft. Robert marked the comments as an old issue as he wanted the draft to progress, but wanted his comments included in the sponsor ballot package so that the sponsor ballot group could see his issue (and perhaps increase support for his viewpoint).

30  
The issue revolves around optional parameters in the MA\_DATA.request primitive that were included to support ITU-T standard X.87 in using 802.17 as their MAC layer in a non-bridging environment. The issue at hand is that if an X.msr node (or a non compliant 802.17 node) was placed into a ring with an 802.1D/Q bridge, extra flooding would occur. The WG felt that this behavior was acceptable given the very fact that the X.msr node is not intended to be used with bridges. A liaison has been sent to the ITU-T Q7/17 to determine if the requirement for these optional parameters still exist. Should the ITU-T Q7/17 group determine that the parameters are not required they will be removed as part of sponsor ballot.

55

**Passes: 13/0/0**

**5.11 ME 802.11i to Sponsor Ballot**

**- Kerry**

**5 02:04 PM**

- 5 Moved: to approve IEEE 802.11 Working Group TGi Draft 7.0 to go to Sponsor Ballot.  
Moved: Kerry/Heile**

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**IEEE P802.11  
Wireless LANs**

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**IEEE 802.11i Draft 7.0, No voter response package**

**Date:** November 11, 2003

**Author:** Dave Halasz  
IEEE 802.11i Task Group Chair  
dhala@cisco.com

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**Abstract**

This document lists the outstanding negative votes, for the IEEE 802.11i Draft 7.0, and a statement of why these unresolved negative votes could not be resolved. There are three remaining no voters with a total of four comments. The comments were rejected by the task group and the resolutions were affirmed by the Working Group. No new disapprove comments were received in the last recirculation. The voters and their reason for voting no are,

**Summary of outstanding no votes (Paraphased)**

Simon Barber

In the IEEE 802.11 header, wants address 3 and address 4 encrypted.

Rejected: They are protected. Encrypting would be an architectural change.

Wants authentication before association.

Rejected: Relying on IEEE 802.1X, which places it in dataframes. This makes it consistent with Ethernet implementations.

Ken Clements

Wants changes reflected in Annex C. (Formal description of MAC operation)

Rejected: Task Group left Annex C in the standard. But the IEEE 802.11i amendment MAC operation description is in the normative text.

Russ Housley

Wants key identifiers synchronized with future work in the IETF.

Rejected: The task group does not want to be reliant on external standards bodies, to move forward. If external activity does progress during Sponsor Ballot then the task group may reconsider.

There were no new “no votes” on the last recirculation. The last recirculation had 14 no votes. From the 14 no voters, no new technical comments have been received. After the last recirculation, the IEEE 802.11 Task Group Chair followed up with outstanding no voters. Of the 14 no voters, 11 changed their votes to yes. The vote change was in the form of an email to the IEEE 802.11 WG Chair, IEEE 802.11 WG 2<sup>nd</sup> Vice Chair and the IEEE 802.11i Task Group Chair.

From the last IEEE 802.11i recirculation, the Task Group wishes to roll all editorial comments labeled, “To be addressed at Sponsor ballot” into the Sponsor Ballot response. This is to save time on producing an eventual amendment.

When Letter Ballot 62 closed, there were 14 no voters. After following up with the 14 no voters, there are now 3 no voters.

**Remaining no voters on IEEE 802.11i, Draft 7.0**

The remaining no voters, on IEEE 802.11i Draft 7.0 are the following,

Simon Barber  
Ken Clements  
Russ Housley

**Background information**

Working Group Letter Ballot 52, was with Draft 3.0 of IEEE 802.11i.  
Working Group Letter Ballot 57, was with Draft 4.0 of IEEE 802.11i.  
Working Group Letter Ballot 60, was with Draft 5.0 of IEEE 802.11i.  
Working Group Letter Ballot 61, was with Draft 6.0 of IEEE 802.11i.  
Working Group Letter Ballot 62, was with Draft 7.0 of IEEE 802.11i.

**Voting results summary**

LB52 Approve 209, Disapprove 65, Abstain 21, Return 93%  
Passed w/76% & 2074 comments  
LB57 (re-circ.) Approve 218, Disapprove 61, Abstain 19, Return 93%  
Passed w/78% & 1467 comments  
LB60 (re-circ.) Approve 243, Disapprove 36, Abstain 20, Return 93%  
Passed w/87% & 850 comments  
LB61 (re-circ.) Approve 257, Disapprove 21, Abstain 21, Return 93%  
Passed w/92% & 811 comments  
LB62 (re-circ.) Approve 264, Disapprove 14, Abstain 21, Return 93%  
Passed w/95% & 230 comments

**Outstanding negative vote history and why these negative votes could not be resolved is contained in the following pages.**

Simon Barber

**LB52**

Comment/Explanation	Recommended Change	Task Group Response
SA and DA are not encrypted in TKIP or CCMP. SA or DA can end up as address 3 or addresses 3 and 4. In this case they can be encrypted. Not encrypting them reveals information about the link that can then be used in a future attack, such as a broadcast frame replay attack.	Add a protection mechanism for address 3 and 4. Either include them in the encrypted data, or provide a separate mechanism to cover them.	Reject. They are protected in CCMP by integrity check.
RSN authentication should occur before association.	add an EAPoL MMPDU in place of the existing authentication mechanism.	Rejected. The decision of the Task Group was to not go down this path.

**LB57 – No comments, no response****LB60 – Comments re-entered**

Task Group Response
Reject. Address privacy has not been a defined service for Tgi. This is a large architectural change.
<p>From the minutes of the IEEE 802.11 TGi Ad-Hoc of August 2003:  Comment 745 rejection</p> <ol style="list-style-type: none"> <li>1. The 1999 802.11 standard makes the assumption that there is no session oriented information until after 802.11 Association. A security association cannot be constructed without the presence of a session.</li> <li>2. Pre-authentication would not be forwardable across the DS if authentication were to occur using 802.11 MAC authentication frames. This would limit the flexibility of pre-authentication design.</li> <li>3. The task group felt it was advantageous to utilize the existing 802.1X EAPOL frames for authentication rather than invent new 802.11 specific frames for this purpose. When 802.11 1999 was passed, there was no standard for 802 authentication. However, since then 802.1X has been passed and 802.11i has decided leverage that standard.</li> <li>4. The task group felt it was important to remove authentication from the MAC since 802.11 is not the appropriate place to define authentication mechanisms.</li> </ol> <p>Straw Poll by Dave Halasz  For the four reasons stated above, comment 745 should be rejected.</p> <p>Discussion:  None</p> <p>Result: 15-0-1</p>

**LB61 – No comments, no response****LB62 – No comments, no response**

Follow up after LB62
Dave Halasz discussed the two remaining comments with Simon Barber on November 11, 2003. The TGi chair explained the task group's position and explained that the comment about Authentication before Association may be addressed by future work out of the IEEE 802.11 Fast Roaming Study Group. At this time, Simon Barber mentioned that the two comments had not been addressed. Furthermore, the two comments are the reason why he is still voting no.

Ken Clements

**LB52**

Comment/Explanation	Recommended Change	Task Group Response
Although primarily concerned with section 8, changes in the draft to section 11 operations that are specified in Annex C have not been propagated to updates of Annex C. The draft is incomplete without the normative updates to Annex C.	Make the necessary changes to Annex C to reflect the changes in MAC layer operation specified by the text of the draft.	This draft deletes Annex C

**LB57 – No comments, no response**

In IEEE 802.11i draft 5.0, the following was added,

### **Annex C (normative) Formal description of MAC operation**

*Insert the following text at the end of the text portion of the text portions introducing Annex C.3 and Annex C.4:*

This annex describes the security behavior of only Clauses 8.2.2 and 8.2.3.

**LB60 – Comment re-entered****Comment/Explanation**

The reason for my no vote is the same as last LB, i.e. lack of formal specifications of the changes to the operation of the 802.11 MAC layer.

**Task Group Response**

While the claim this comment makes is true, there is no evidence that the lack of a formal description makes any difference in practice.

Indeed, the evidence is to the contrary. The text of the TGi draft is sufficiently detailed and complete as to permit independent implementations. This claim may be verified by empirical observation.

Wi-Fi Protected Access (WPA) is based on an earlier version of the TGi draft, D3.0. Tgi draft D3.0 was sufficiently detailed to permit independent interoperable implementation of 802.11X supplicants from 4 different vendors, RADIUS servers from 2 different vendors, station NICs from 9 different vendors, and access points from 4 different vendors.

This claim may be verified by consulting [http://www.wi-fi.org/OpenSection/Certified\\_Products.asp](http://www.wi-fi.org/OpenSection/Certified_Products.asp).

Aside from key caching and incorporation of the group key into the 4-Way Handshake, the changes to the TGi draft after D3.0 have been exclusively to clarify text, not add new features. This means we can expect the current draft is more easily implemented than D3.0, which has already led to successful independent interoperable implementations.

Furthermore, 802.11h was approved without any changes to the formal description in Annex C, and IEEE 802.3 has removed Annex C completely, indicating that IEEE 802.11, 802, and RevCom all believe that updates to the formal description are not necessary for correct and interoperable implementations of the standard. TGi therefore rejects comment 336 of 03/659.

LB60 – Comment re-entered and response is re-entered

LB61 – Comment re-entered and response is re-entered

LB62 – Comment re-entered and response is re-entered

---

**Follow up after LB62**

Dave Halasz discussed the remaining comments with Ken Clements on November 11, 2003. The TGI chair explained the task group's response, regarding previous related work. However Ken Clements responded that the other work was done incorrectly. At this time, Ken Clements mentioned that the comment had not been addressed. Furthermore, the comment is the reason why he is still voting no.



Russ Housley

**LB60**

Comment/Explanation	Recommended Change	Task Group Response
The key management in 802.11i is dependent on 802.1X, which is dependent on EAP. The key identifiers should not deviate from the conventiond being specified in the IETF for use with EAP. Rather, the key identifiers ought to take advantage of the conventions being defined in the IETF for use with EAP.	On page 73, lines 11 through 15, a key naming scheme compatable with the one being defined for EAP by the IETF should be used.	We do not want another dependency on a draft standard. We may re-consider this when EAP Key naming becomes a standard. Synchronize with the EAP group at the October 802.11i meeting. We will continue discussion with the EAP group for alignment, prior to the 802.11i Sponsor ballot submission.

**LB61****Task Group Response**

Reject, EAP group did not reach a consensus and 11i PMKID key identifiers can't be aligned with EAP as there are cases when 11i do not take the PMK from eap e.g. PSK. 11i does not define an identifier for PTKs as this is an internal implementation issue and not an interoperability issue

**LB62 – No comments, no response****Follow up after LB62**

Dave Halasz contacted Russ Housley on November 8, 2003, to discuss Russ's no vote. Russ Housley mentioned he would do another review and email his response. Russ Housley emailed his response on November 8, 2003 stating that he is still not satisfied with the comment being addressed.

An opinion was expressed that the WG “blew off” the comment requesting coordination with standards groups working in other layers. This is not an acceptable response.

5 Stuart read the response from the task group, indicated that there is a direct liaison with IETF to address issues such as these. The task group chair (Dave Halasz) provided support that the task group is working with the commenter, IETF, and EAP working group to coordinate.

10 Condition: the comments from the joint meeting of EAP and TG<sub>i</sub> will be entered into the sponsor comments in time for resolution.

**Passes: 12/0/0**

5.12 ME 802.11e to Sponsor Ballot under Procedure 10 - Kerry 5 02:10 PM

15 **Withdrawn.**

**The submittal package was not approved or shown to the working group.**

5.13 ME 802.11j to Sponsor Ballot under Procedure 10 - Kerry 5 02:11 PM

20 **Withdrawn.**

**The submittal package was not approved or shown to the working group.**

5.14 ME 802.3ak to RevCom under Procedure 10 - Grow 2 02:08 PM

25 **Moved: The LMSC EC grants conditional approval per Procedure 10 for the submission of 802.3ak to RevCom pending the successful completion of sponsor ballot with a target for January 2004 continuous processing.**

**Moved: Grow/Thompson**

## Ballot Summary

P802.3ak/D5.3 3rd Recirculation

Closing date: 2003-12-04

This is a recirculation ballot. The report collates the results from the following groups: 0000554 0000636 0000661 0000693.

### 1. This ballot has met the 75% returned ballot requirement.

77 eligible people in this ballot group.

61 affirmative votes  
 0 negative votes with comments  
 0 negative votes without comments  
 5 abstention votes

=====

66 votes received = 85% returned  
 7% abstention

### 2. The 75% affirmation requirement is being met.

61 affirmative votes  
 0 negative votes with comments

=====

61 votes = 100% affirmative

## Ballot Details

### Coordination Responses Only

IEEE/Coord Number	Name	Role	Phone / E-mail	Coordination Ballot Received	Coordination Comment(s) Received
00601054	<a href="#">Bruce Barrow</a>	SCC14	301-493-4374 b.barrow@erols.com	yes	-
00001001	<a href="#">Editorial Coordinator</a>	Editorial	732-562-3825 m.d.turner@ieee.org	yes*	yes
00001000	<a href="#">SCC10 Coordinator</a>	SCC10	281-261-7081 d.c.mohla@ieee.org	yes	-

### Balloters

Number	Name	Phone / E-mail	Vote	T	E	Graphics	Status Notes	Interest Category
01867829	<a href="#">Don Alderrou</a> Intel 44235 Nobel Drive Fremont, CA 94538 USA	510.497.8130 don.alderrou@intel.com	Approve, no comments (Y)	-	-	-		Producer
41561716	<a href="#">Howard A. Baumer</a> Broadcom Corp 16215 Alton Parkway Irvine, , CA 92618 U.S.A.	949-926-5298 hbaumer@broadcom.com	Approve, no comments (Y)	1	-	1		Producer
40303301	<a href="#">Jacob Ben Ary</a> Teldor Wires & Cables P.O.BOX 5205 Qiryat Bialik, IL 27151	+972-56-765054 ben_ary@mail.aquanet.co.il	Approve, no comments (Y)	-	-	-		Producer

	Israel							
41285915	<a href="#">Rahul Bhushan</a> STMicroelectronics Inc. 16 Fitzgerald Road, Suite 300 Nepean, Ontario K2H 8R6 Canada	(613)768-9058 rahul.bhushan@st.com	Approve, no comments (Y)	-	-	-		General Interest
05571450	<a href="#">Peter Bradshaw</a> BitBlitz Communications Inc 461 S. Milpitas Blvd Milpitas, CA 95035 USA	+1408-597-8222 pbradshaw@bitblitz.com	Approve, no comments (Y)*	3	2	1		Producer
08009128	<a href="#">Benjamin Brown</a> Independent 178 Bear Hill Road Chichester, NH 03258 USA	603-491-0296 benjamin.brown@ieee.org	Approve, comments (Y1)	-	1	1		General Interest
01350172	<a href="#">Jeff Cain</a> Cisco Systems 170 W Tasman San Jose, CA 95134 USA	408 527 7754 jcain@cisco.com	Approve, no comments (Y)*	-	-	-		Producer
01454685	<a href="#">Edward Carley Jr.</a> ICN 347 Elizabeth Ave Somerset, NJ 08873 USA	732.868.8080 ejc@icn1.com	Abstain for lack of expertise (A2)	-	-	-		User
41465277	<a href="#">Steven Carlson</a> HSD 11929 NW Old Quarry Rd Portland, OR 97229 US	503-626-4206 scarlson@hspdesign.com	Approve, no comments (Y)	-	-	-		General Interest
40237493	<a href="#">Keith Chow</a> 28 Hawthorn way Cambridge, Cams CB4 1AX UK	+44 01223 353760 chow.keith@computer.org	Approve, no comments (Y)*	-	-	-		General Interest
41383763	<a href="#">André Sion Corrêa</a> Rua Padre Ildefonso Penalba 151, 316 Rio de Janeiro, Rio de Janeiro 20775-020 Brazil	55-21-32771839 sion@computer.org	Approve, no comments (Y)	-	-	-		User
41498366	<a href="#">Robert Crutchfield</a> Single with Jesus Ministries 12414 Ledger Lane Houston, Texas 77015 United States	713-453-5674 ra_crutchfield@yahoo.com	-	-	-	-		User
40282955	<a href="#">Christopher DiMinico</a> MC Communications 4 Bailey Terrace Chelmsford, MA 01824	978-441-1051 cdiminico@ieee.org	Approve, no comments (Y)	-	-	-		Producer

	US							
41318159	<a href="#">Wael Diab</a> Cisco Systems 170 West Tasman Drive San Jose, CA 95134 USA	408 527 9940 wdiab@cisco.com	Approve, no comments (Y)*	-	-	-		User
40199311	<a href="#">Thomas Dineen</a> Dineen Consulting PO Box 361801 Milpitas, CA 95036 USA	(408) 956-0539 tdineen@ix.netcom.com	Approve, no comments (Y)	-	-	-		Producer
40069132	<a href="#">Dan Dove</a> HP ProCurve Networks 8000 Foothills Blvd Roseville, CA 95747 USA	(916)785-4187 dan.dove@hp.com	Approve, comments (Y1)	2	-	2		Producer
08972887	<a href="#">Dr. Sourav Dutta</a> VSNL 16th Floor, VSB, M G Road, Fort Mumbai, MH 400001 INDIA	+91 22 2266-7649 s.dutta@ieee.org	Approve, no comments (Y)	-	-	-		General Interest
41471373	<a href="#">Clint Early</a> International Paper 6400 Poplar Ave Memphis, TN 38197 USA	(901) 419-3912 clint.early@ieee.org	Approve, no comments (Y)*	-	-	-		User
40125793	<a href="#">Will Foulds</a> Cisco Systems 9301 Southwest Freeway Suite 600 Houston, TX 77074 USA	713-448-1629 wfoulds@cisco.com	Approve, no comments (Y)	-	-	-		General Interest
02937290	<a href="#">Martin Freedman</a> MOLEX Connector Corporation 2222 Wellington Court Lisle , IL 60532 USA	630-5274269 marty.freedman@molex.com	Approve, no comments (Y)	-	-	-		Producer
00324053	<a href="#">Justin Gaither</a> Xilinx, Inc 805 Las Cimas Parkway #250 Austin, TX 78746 USA	512-306-7292x529 justin.gaither@xilinx.com	Approve, no comments (Y)	-	-	-		Producer
01696707	<a href="#">Devon Gayle</a> National Water Commission 2a Manhattan Road Kingston, Caribbean 5 Jamaica	876 819-6597 d.gayle@ieee.org	-	-	-	-		User
40297116	<a href="#">Bob Geiger</a> Monrovia USD 325 E. Huntington Drive	(626) 471-2015 bgeiger@monrovia.k12.ca.us	Abstain for lack of time (A1)	-	-	-		General Interest

	Monrovia, CA 91016 USA								
07393143	<a href="#">Robert Grow</a> Intel 13290 Evening Creek Drive San Diego, CA 92128 USA	858-391-4622 bob.grow@ieee.org	Approve, comments (Y1)	1	1	2			Producer
01268481	<a href="#">Chris Guy</a> The University of Reading Whiteknights Reading, Berks RG6 6AY UK	+44 118 378 8757 c.g.guy@rdg.ac.uk	Approve, no comments (Y)	-	-	-			General Interest
40164551	<a href="#">Stephen Haddock</a> Extreme Networks 3585 Monroe Street Santa Clara, CA 94020 USA	408-579-2812 shaddock@extremenetworks.com	Approve, no comments (Y)	-	-	-			Producer
41467739	<a href="#">Adam Healey</a> Agere Systems 300 Brickstone Square, Suite 601 Andover, MA 01810 USA	1-978-691-3067 ahealey@agere.com	Approve, no comments (Y)	-	-	-			Producer
40013780	<a href="#">ATSUSHI ITO</a> 5-2-7-107, MINAMIDAI SAGAMIHARA, KANAGAWA 228-0814 JAPAN	81-42-765-7756 itoa@ieee.org	Approve, no comments (Y)	-	-	-			User
41357565	<a href="#">Peeya Iwagoshi</a> Applied Innovation Inc 6545 Meadow Glen Dr. Westerville, OH 43082 USA	614-923-1394 peeya@aiinet.com	Approve, no comments (Y)	-	-	-			User
03805595	<a href="#">Niket Jindal</a> Motorola 1300 North Alma School Road, MD: CH260 Chandler, AZ 85224 USA	480-814-5005 niket.jindal@motorola.com	-	-	-	-			Producer
41316403	<a href="#">Stanley Johnson</a> CALTRANS 6021 South Verdun Avenue Los Angeles, California 90043 USA	(323) 293-7595 Stanley_Johnson_PE@msn.com	Approve, no comments (Y)	-	-	-			General Interest
40344304	<a href="#">Joe Juisai</a> AT&T Corp. 3210 Lake Emma Rd. Rm. 4C300 Lake Mary, FL 32746-3334 US	+1 407 805-1739 Joe.Juisai@IEEE.org	Approve, no comments (Y)	-	-	-			General Interest
40357068	<a href="#">Stuart Kerry</a>	4083483171	-	-	-	-			Producer

	OK-Brit 1020 White Cloud Drive Morgan Hill, CA 95037-6073 United States of America	stuart@ok-brit.com						
01049261	<a href="#">William Lane</a> CSU, Chico 8320 Woodman Ln. Newcastle, CA 95658 USA	(530) 888-1950 bill_lane@ieec.org	Approve, no comments (Y)	-	-	-		Government
04272381	<a href="#">David Law</a> 3Com 1 Earl Grey Street Edinburgh, Mid Lothian EH3 9BN UK	+44 131 659 8218 David_Law@ieec.org	Approve, comments (Y1)	1	-	1		Producer
41304605	<a href="#">Pi-Cheng Law</a> Chunghwa Telecom Labs. P.O.Box 6-14 Yang-Mei, Taoyuan 326 Taiwan	+886 3 4245738 pclaw@ieec.org	Approve, no comments (Y)*	-	-	-		User
01622778	<a href="#">Randolph Little</a> AT&T - retired 111 Berkeley Circle Basking Ridge, NJ 07920 USA	908-221-9173 rsl@att.net	Approve, no comments (Y)	-	-	-		General Interest
40358457	<a href="#">Heyun H. Liu</a> Texas Instruments 12500 TI Builevard, MS 8732 Dallas, , TX 75266 U.S.A.	214-480-7678 howard.liu@ti.com	Approve, no comments (Y)	-	-	-		Producer
41273459	<a href="#">Ryan Madron</a> 6083 N. Figarden Dr. PMB 154 Fresno, CA 93722 USA	559-213-2717 rmadron@computer.org	Approve, no comments (Y)	-	-	-		General Interest
40183512	<a href="#">Kyle Maus</a> AITG 6033 N. Sheridan Rd., #17H Chicago, IL 60660 USA	3123719727 sargon@ieec.org	Approve, no comments (Y)	-	-	-		User
03659414	<a href="#">Kelly McGrew</a> mcgrew.net inc. 2103 Silvan View CT SW Olympia, WA 98501 USA	1-360-753-5353 kelly@mcgrew.net	-	-	-	-		User
01210376	<a href="#">Steve Methley</a> Plextek Ltd London Road Great Chesterford, Essex CB10 2EF UK	+44 1799 533200 sgm@plextek.com	Approve, no comments (Y)	-	-	-		Producer

01271899	<a href="#">George Miao</a> 2 Inverness Drive Marlboro, NJ 07746 USA	732-462-7447 g.j.miao@ieee.org	Approve, no comments (Y)*	-	-	-		General Interest
41505402	<a href="#">Rajesh Moorkath</a> None 1218 castine Ct Pasadena, MD 21122 USA	410-360-3538 rajeshm@ieee.org	Approve, no comments (Y)	-	-	-		General Interest
40065246	<a href="#">Shimon Muller</a> Sun Microsystems, Inc. M/S UNWK19-202 7788 Gateway Boulevard, Building 19, Newark, CA 94560	510-936-4897 shimon.muller@sun.com	Approve, no comments (Y)	-	-	-		General Interest
41536489	<a href="#">Trung Nguyen</a> National Semiconductor 2900 Semiconductor Drive Santa Clara, CA 95051 USA	408 721 2459 trung.nguyen@nsc.com	Approve, no comments (Y)	-	-	-		Producer
07858459	<a href="#">Paul Nikolich</a> consultant 18 bishops lane lynnfield, ma 01940 USA	857.205.0050 p.nikolich@ieee.org	Abstain for lack of time (A1)	-	-	-		General Interest
05283627	<a href="#">Donald O'Connor</a> Fujitsu Network Communications 2801 Telecom Parkway Richardson, Tx 75082 USA	972 479 3672 don.oconnor@fnc.fujitsu.com	-	-	-	-		Producer
02439719	<a href="#">Stephen Palm</a> Broadcom 16215 Alton Pkwy Irvine, CA 92606 USA	+1 949 926 7256 ieee@kiwin.com	Approve, no comments (Y)	-	-	-		General Interest
01020171	<a href="#">Glenn Parsons</a> Nortel Networks 3500 Carling Avenue Ottawa, Ontario K1Y 4H7 Canada	+1-613-763-7582 gparsons@nortelnetworks.com	Approve, comments (Y1)	-	1	-		General Interest
00353235	<a href="#">Subbu Ponnuswamy</a> 1005 Blue Ravine Road, #926 Folsom, CA 95630 USA	916-984-0868 subbu@acm.org	Approve, no comments (Y)	-	-	-		General Interest
01453273	<a href="#">Vikram Punj</a> Xalted Networks 6558 Leyland Park Ct San Jose, CA 95120	408-268-1479 punj@msn.com	Approve, no comments (Y)*	-	-	-		Producer



	USA								
01166412	<a href="#">William Quackenbush</a> Cisco Systems 1700 Hamilton Ave Palo Alto, CA 94303 USA	(650)328-6812 billq@attglobal.net	Approve, comments (Y1)	1	-	1			Producer
02216174	<a href="#">Maximilian Riegel</a> Siemens St-Martin-Str 76 Munich, DE 81541 Germany	+498963675194 maximilian.riegel@siemens.com	Approve, no comments (Y)	-	-	-			Producer
40156145	<a href="#">Calvin Roberts, RCDD</a> 70420 Sweddell Rd Mitchell, NE 69357-0224 USA	308.623.0158 calvin.roberts@ieee.org	Approve, no comments (Y)	-	-	-			General Interest
04089611	<a href="#">David Rockwell</a> Titan Corporation 5100 W. Kennedy, Ste 500 Tampa, FL 33609 USA	(727) 823-7580 dave.rockwell@ieee.org	Approve, no comments (Y)	-	-	-			User
00944447	<a href="#">Floyd Ross</a> Independent Consultant 2020 Greyhorse Dr. Warrington, PA 18976 USA	215-343-2610 FERoss@worldnet.att.net	Approve, no comments (Y)	-	-	-			General Interest
40283080	<a href="#">John Sargent</a> Wireless Facilities Inc. 1800 Michael Faraday Dr Reston , VA 20190 USA	425 503 9972 john.sargent@cingular.com	Approve, no comments (Y)	-	-	-			General Interest
04981635	<a href="#">Sabit Say-Otun</a> Next Level Communications 1 Greene St 303 Jersey City, NJ 07302 USA	+1 201 521 9004 s.say@ieee.org	-	-	-	-			Producer
41519049	<a href="#">Marco Scorrano</a> STUDIO TECNICO Ing. Scorrano Via Remo Ronchitelli, 14 Pescara, PE 65125 Italy	+393382761643 marco.scorrano@ingegneri.com	Approve, no comments (Y)	-	-	-			User
40179045	<a href="#">Rich Seifert</a> Networks & Communications 21885 Bear Creek Way Los Gatos, CA 95033 USA	(408) 395-5700 rich@richseifert.com	Abstain for lack of time (A1)	-	-	-			General Interest
01109156	<a href="#">Gil Shultz</a> Yazaki 6801 Haggerty Rd Canton, MI	248-894-7766 gshultz@yazaki-na.com	Approve, no comments (Y)*	-	-	-			General Interest

	48187 USA							
03488020	<a href="#">Fulvio Spagna</a> Intel Corp. 44235 Nobel Drive, PC1-104 Fremont,, CA 94538 U.S.A.	510-497-8172 fulvio.spagna@intel.com	Approve, no comments (Y)	-	-	-		Producer
41444702	<a href="#">Vincent R Surillo</a> Focal Communications Suite 1100, 200 N. LaSalle Street Chicago, IL 60601 USA	312 895 8282 vrs@ieee.org	-	-	-	-		User
41560918	<a href="#">Dimitry Taich</a> Mysticom 1300 Crittenden Lane, Suite 101 Mountain View, CA 95014 USA	(650)-429-0255 dimitryt@mysticom.com	Approve, no comments (Y)	-	-	-		User
06560411	<a href="#">Pat Thaler</a> Agilent Technologies 1101 Creekside Ridge Drive Roseville, CA 95678 USA	916 788 5662 pat_thaler@agilent.com	Approve, no comments (Y)	4	1	-		User
02646453	<a href="#">Geoff Thompson</a> Nortel Networks, Inc. P.O. Box 58185, 4465 Great America Parkway Santa Clara,, CA 95052 U.S.A.	408-495-1339 thompson@ieee.org	Approve, comments (Y1)*	3	4	1		Producer
40110110	<a href="#">Scott Valcourt</a> University of New Hampshire 121 Technology Drive Suite 2 Durham, NH 03824 USA	603-862-4489 sav@unh.edu	Approve, no comments (Y)	-	-	-		General Interest
41392139	<a href="#">Ramkrishna Vepa</a> S2io Technologies 20230 Stevens Creek Blvd, Suite C Cupertino, CA 95014 USA	408-8611250 x212 ram.vepa@s2io.com	-	-	-	-		User
04301917	<a href="#">Dave Willow</a> MBT 2902 Agriculture Dr Madison, WI 53718 USA	608-222-3344 dave.willow@ieee.org	Approve, no comments (Y)*	-	-	-		User
40335536	<a href="#">Takahito Yoshizawa</a> Motorola 1475 W.Shure Dr Arlington Heights, ILLINOIS 60013 USA	847-632-7255 t.yoshizawa@motorola.com	Approve, no comments (Y)	-	-	-		General Interest
05907266	<a href="#">Oren Yuen</a>	310-372-9334	Approve, no	-	-	-		User

	1504 Steinhart Ave Redondo Beach, CA 90278 United States	oren.yuen@ieee.org	comments (Y)					
41503098	<a href="#">Andrew Zenk</a> PO Box 13211 Minneapolis, MN 55414 US	612-414-9617 ieee@overeducated.com	Abstain for lack of expertise (A2)	-	-	-		General Interest
05046479	<a href="#">dR. guru dutt dhingra</a> dhingra & associates sAPPHIRE pARK-1, oPP. k. j. mEHTA hIGH sCHOOL Nasik Road -422101, MAHARASHTRA 422101 INDIA	+91 253 2461836 DHINGRAGD@SANCHARNET.IN	Approve, no comments (Y)	-	-	-		User
41454280	<a href="#">charles ngethe</a> KWS langata road Nairobi, Nairobi 00400 kenya	254 02 602345 cngethe@kws.org	-	-	-	-		User
41557591	<a href="#">Schelto van Doorn</a> Intel Corp 6569 Fifewood Ct. San Jose, Ca 95120 USA	408-398-2441 schelto@msn.com	Approve, no comments (Y)	-	-	-		Producer
41522788	<a href="#">Karl weber</a> siemens zur schanze 5 altdorf, germany 90518 germany	+49 911 750 4088 karl.weber@siemens.com	-	-	-	-		General Interest
<b>Comment Totals *</b>				16	10		10	
(* You have at least these many comments: each unstructured binary file (i.e., Word) is counted as a single G file, which may consist of one or hundreds of individual T and E comments.								
* This ballot cast this ballot in the current circulation of this recirc ballot.								

#### Summary of Eligible Voters by Interest Category

Interest Category	Affirmative(s)	Negative(s) with Comments	Negative(s) without Comments	Abstention(s)	Not Returned	Total
User	14	0	0	1	6	21
Producer	23	0	0	0	4	27
General Interest	23	0	0	4	1	28
Government	1	0	0	0	0	1
<b>Voting Tally</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>77</b>

<b>Abstention details:</b>	3 for lack of time (A1)	2 for lack of expertise (A2)	0 for other reasons (A3)
----------------------------	-------------------------	------------------------------	--------------------------

Passes:11/0/1

5.15 ME 802.3al 802.3 10GBASE-T PAR to NeSCom

- Grow

5 02:10 PM

- 5 **Moved: The LMSC EC grants approval to submit the 10GBASE-T PAR to NeSCOM with necessary edits (including renumbering to P802.3an), targeted for NeSCom continuous processing**

**You are about to submit this form to the NesCom Administrator. Please review the information for accuracy and print a copy for your records.**

**\*\*\* If you need to make any changes, please go back to the previous page. \*\*\***

For a review of the Standards Development Process:

**1. ASSIGNED PROJECT NUMBER: 802.3an**

**2. SPONSOR DATE OF REQUEST: 21-Nov-2003**

**3. TYPE OF DOCUMENT: Standard**

**4. TITLE OF DOCUMENT: Information technology -- Telecommunications and information exchange between systems -- Local and metropolitan area networks -- specific requirements Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Amendment: Physical Layer and Management Parameters for 10 Gb/s Operation, Type 10GBASE-T**

**5. LIFE CYCLE: Full**

**6. TYPE OF PROJECT: Amendment Std. 802.3-2002 and Std. 802.3ae-2002**

Revised PAR?  
In Ballot?

#### **7. CONTACT INFO OF WORKING GROUP**

Name of Working Group: **802.3 CSMA/CD (Ethernet) Working Group**  
Name of Working Group Chair: **Robert Grow**  
Telephone: **858-391-4622**  
FAX: **858-391-4657**  
E-mail: **bob.grow@ieee.org**

#### **8. CONTACT INFO OF OFFICIAL REPORTER**

Name of Official Reporter: **Brad Booth**  
Telephone: **512-732-3924**  
FAX: **512-732-3912**  
E-mail: **bbooth@ieee.org**

#### **9. CONTACT INFO OF SPONSOR**

Sponsor: **C/LM**  
Name of Sponsor Chair: **Paul Nikolich**  
Telephone: **857-205-0050**  
FAX: **781-334-2255**  
E-mail: **p.nicolich@ieee.org**

**10. TYPE OF SPONSOR BALLOT: Individual**

Expected Date of Submission: **01-Jul-2005**

**11. PROJECTED COMPLETION DATE TO REVCOM: 01-Feb-2006**

Statement of Extension:

Date of First Draft Starts:

Number of Active People on the Project:

Number of Meetings Per Year:

Number of Electronic Meetings Per Year:

Frequency of Draft Circulated Electronically:

Percentage of stability of the draft: %

Number of Revision So Far:

Current Status of Development:

**12. SCOPE: Specify a Physical Layer (PHY) for operation at 10 Gb/s on standards based structured copper cabling, using the existing Media Access Controller, and with extensions to the appropriate physical layer management parameters, of IEEE Std 802.3.**

**13. PURPOSE: The purpose of this project is to provide a lower-cost, twisted pair copper cabling option for 10Gb/s interconnection of equipment up to 100 m.**

**14. INTELLECTUAL PROPERTY:**

Patent Policy: **Yes**

Copyrights: **No**

Trademarks: **No**

Registration of Object: **No**

**15. SIMILAR SCOPE: No**

Explanation:

Sponsor:

Project Number:

Project Date:

Project Title:

**16. INTERNATIONAL SPONSOR: NotKnow**

Int'l Organization: **JTC1 6 3**

Int'l Contact Person: **Robin Tasker**

Telephone: **+44-1925-603758**

FAX:

E-mail: **R.Tasker@dl.ac.uk**

**17. FOCUS ON HEALTH, SAFETY OR ENVIRONMENTAL ISSUES:**

Explanation:

**18. ADDITIONAL NOTES:**

REVIEWED & SUBMIT

The PAR Copyright Release and Signature Page must be submitted either by FAX to 208-460-5300 or as e-mail attachment in .pdf format to the [NesCom Administrator](#) before this PAR will be sent on for NesCom and Standards Board approval.

**Moved: Grow/Thompson**  
**Passes: 13/0/0**

5      5.16      ME      802.3ah to Sponsor Ballot under Procedure 10      -      Grow      5      02:15 PM

**Moved: The LMSC EC grants conditional approval per Procedure 10 for the 802.3ah sponsor ballot pending the successful completion of the working group recirculation ballot.**  
**Moved: Grow/Marks**

10      **The motion is withdrawn and will be submitted as an EC email ballot.**

Roger will clarify multiple recirculation ballots under Procedure 10.

5.17      ME      802.3am, Maintenance #8 (Revision) PAR to NesCom      -      Grow      5      02:35 PM

15      **Moved: The LMSC EC grants approval to forward the 802.3REVam, Maintenance #8 revision PAR to NeSCom with appropriate edits, targeted for continuous processing.**  
**Moved: Grow/Thompson**

20      Geoff pointed out the policy is that a fifth amendment will not be approved until a revision of a standard is APPROVED.  
802.3 will be asking for an exception, but needs to have the revision PAR submitted.



# PAR FORM

**PAR Status:** Revision PAR (Unapproved PAR)

**PAR Approval Date:** 0000-00-00

**PAR Signature Page on File:** No

**Review of Standards Development Process:** No

**1. Assigned Project Number:** 802.3-REvam

**2. Sponsor Date of Request:** 2003-11-24

**3. Type of Document:** Standard for

**4. Title of Document:**

**Draft:** Information technology -- Telecommunications and information exchange between systems -- Local and metropolitan area networks -- specific requirements Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications

**5. Life Cycle:** Full Use

**6. Type of Project:**

**6a. Is this an update to an existing PAR?** No

**6b. The Project is a:** Revision of Std IEEE Std 802.3-2002

**7. Contact Information of Working Group:**

**Name of Working Group:** IEEE 802.3 CSMA/CD (Ethernet)

**Name of Working Group Chair:** Robert M Grow

**Telephone:** 858-391-4622 **FAX:** 858-391-4657

**Email:** bob.grow@ieee.org

**8. Contact Information of Co-Chair/Official Reporter (If different than Working Group Chair)**

**Name of Co-Chair/Official Reporter:** (if different than WG contact)

**Telephone:** **FAX:**

**Email:**

**9. Contact Information of Sponsoring Society or Standards Coordinating Committee:**

**Name of Sponsoring Society and Committee:** Computer Society Local and Metropolitan Area Networks

**Name of Sponsoring Committee Chair:** Paul Nikolich

**Telephone:** 857-205-0050 **FAX:** 781-334-2255

**Email:** paul.nikolich@att.net

**Name of Liaison Rep. (If different than Sponsor Chair):**

**Telephone:** **FAX:**

**Email:**

**10. The Type of ballot is:** Individual Sponsor Ballot

**Expected Date of Submission for Initial Sponsor Ballot:** 2004-08-01

**11. Fill in Projected Completion Date for Submittal to RevCom:** 2004-11-01

**Explanation for Revised PAR that Completion date is being extended past the original four-year life of the PAR:**

**12. Scope of Proposed Project:**

This project is a revision of IEEE Std 802.3-2002 integrating approved amendments and corrigenda plus corrections and clarifications submitted as maintenance changes through the IEEE 802.3 maintenance process. The project will not add any significant new functionality.

**13. Purpose of Proposed Project:**

This project is expected to merge at least four amendments into the base standard. It also adds maintenance changes submitted through the IEEE 802.3 maintenance process ([www.ieee802.org/3/maint](http://www.ieee802.org/3/maint)) to fix errors and ambiguities in the published standard. This will provide a single base document for ongoing work and satisfy IEEE-SA SB requirements.

**14. Intellectual Property:**

Sponsor has reviewed the IEEE patent policy with the working group? Yes

Sponsor is aware of copyrights relevant to this project? No

Sponsor is aware of trademarks relevant to this project? No

Sponsor is aware of possible registration of objects or numbers due to this project? No

15. Are there other documents or projects with a similar scope? No

**Similar Scope Project Information:**

16. Is there potential for this document (in part or in whole) to be submitted to an international organization for review/adoption? Yes

If yes, please answer the following questions:

Which International Organization/Committee? ISO TCJTC1 SC6 WG3

International Contact Robin Tasker

Information? CLRC

+44-1925-603758

R.Tasker@dl.ac.uk

17. If the project will result in any health, safety, or environmental guidance that affects or applies to human health or safety, please explain, in five sentences or less. No

18. Additional Explanatory Notes: (Item Number and Explanation)

**Passes: 13/0/0**

5

**5.18 ME 802.16/Conformance03 to Sponsor Ballot**

- **Marks**

**5**

**02:25 PM**

**Moved: To forward 802.16/Conformance03/D2 to sponsor ballot.**

**Moved: Marks/Stevenson**

# IEEE 802.16 Letter Ballot #12: Voting Report

*P802.16/Conformance03:*

*"Draft Standard for Conformance to IEEE Standard 802.16 - Part 3:  
Radio Conformance Tests (RCT) for 10-66 GHz WirelessMAN-SC<sup>TM</sup> Air Interface"*

## Letter Ballot #12 progress, in inverse chronological order:

### IEEE 802.16 Working Group Recirculation Ballot #12a: Announcement { **CLOSED** }

Question: *To accept resolutions of comments from Working Group Recirculation Ballot #12, as recorded in [IEEE 802.16-03/41r2](#), and to forward, for IEEE 802 LMSC Sponsor Ballot, IEEE P802.16/Conformance03/D2-2003.*

Closing date: 8 November 2003 AOE ("Anywhere on Earth")

Opening date: 24 October 2003

[Ballot Submission Form](#)

### IEEE 802.16 Working Group Letter Ballot #12: Announcement { **CLOSED**; see comment database [802.16-03/41](#) }

Question: *To forward IEEE P802.16/Conformance03/D1-2003 for LMSC Sponsor Ballot.*

Closing date: 5 September 2003 AOE ("Anywhere on Earth")

Opening date: 6 August 2003

[Ballot Submission Form](#)

## Summary Results

Report Date	Approve	Dis	Votes	Approval Ratio	Approval Ratio Condition Met (>75%)	Abstain	Ballots	Members	Return Ratio	Return Ratio Condition Met (>=50%)
2003/11/09 ( <b>RB #12a: Final</b> )	45	0	45	100%	Yes	9	54	58	93.1%	Yes
2003/09/09 ( <b>LB #10: Final</b> )	44	1	45	97.8%	Yes	9	54	58	93.1%	Yes

\*Pending resolution of comments, and then recirculation.

## Ballot Details

[ Updated 03/11/09 ]

[Note: "-" means "did not return a ballot".]

<b>Name\Family</b>	<b>Name\Given</b>	<b>Vote: Letter Ballot #12 (Final)</b>	<b>Vote: Recirc Ballot #12a</b>
Agrawal	Aditya	Approve, No Comments	
Antonello	Gordon	Approve, No Comments	
Arefi	Reza	Approve, No Comments	
Avivi	Eli	Approve, No Comments	
Chang	Dean	Approve, No Comments	
Chayat	Naftali	Approve, No Comments	
Chayer	Rémi	Abstain for Lack of Technical Expertise	
Dick	Stephen	Approve, No Comments	
Edmonston	Brian	Approve, No Comments	
Eidson	Brian	Approve, No Comments	
Eilts	Henry	Approve, No Comments	
Eklund	Carl	Approve, No Comments	
Engels	Marc	Abstain for Lack of Technical Expertise	
Freedman	Avraham	Disapprove	Approve, No Comments
Garrison	G. Jack	Abstain for Lack of Technical Expertise	
Goldhammer	Marianna	Approve, No Comments	
Hadad	Zion	Approve, No Comments	
Johnston	David	Approve, No Comments	
Joo	Panyuh	Approve, No Comments	
Kaitz	Tal	Approve, No Comments	
Kelly	Phil	Abstain for Lack of Technical Expertise	
Kelman	Ofer	Approve, No Comments	
Kiernan	Brian	Approve, No Comments	
Kitroser	Itzik	Approve, No Comments	
Koo	Changhoi	Approve, No Comments	
Labs	Jonathan	Approve, No Comments	
Leiba	Yigal	Approve, No Comments	
Lewis	Barry	Approve, No Comments	
Li	Lingjie	Approve, No Comments	
Liebetreu	John	Approve, No Comments	
Lindh	Lars	Approve, Comments	
Lou	Hui-Ling	Approve, No Comments	
Lycklama	Heinz	-	
Marks	Roger	Approve, Comments	
McKown	Russell	Approve, No Comments	
Middleton	Andrew	Approve, No Comments	
Murias	Ronald	Approve, No Comments	

Nelson	Robert	Abstain for Lack of Technical Expertise	
Rath	Kamlesh	Approve, No Comments	
Robinson	Gene	Approve, No Comments	
Segal	Yossi	Approve, No Comments	
Selea	Radu	Approve, No Comments	
Simkins	James	Abstain for Lack of Technical Expertise	
Stanwood	Kenneth	Approve, Comments	
Stevenson	Carl	Approve, No Comments	
Struhsaker	Paul	-	
Suzuki	Yoshihiro	Approve, No Comments	
Taylor	Shawn	Approve, No Comments	
Thomson	William	-	
Trinkwon	David	Abstain for Lack of Technical Expertise	
Ullmann	Rainer	Approve, Comments	
van Waes	Nico	Approve, No Comments	
Verbin	Eyal	Abstain for Lack of Technical Expertise	
Wang	Arthur	Abstain for Lack of Time	
Wang	Lei	Approve, No Comments	
Wang	Stanley	-	
Whitehead	Philip	Approve, No Comments	
Yanover	Vladimir	Approve, No Comments	

**Passes: 12/0/1**

**Moved: to modify to the agenda to add two information items (Liaison items)**

5 **Moved: Marks/Sherman**

**Passes: 9/1/3**

Items 11.14 and 11.15 were added to the agenda.

6.00

**Executive Committee Study Groups & Working Groups**

-

6.01

MI

Confirm Vice Chair of 802.17

-

Takefman

5

02:43 PM

10

**Moved: To confirm John Lemon as vice chair of 802.17.**

**Moved: Takefman/Jeffree**

# Confirmation of Vice Chair

- John Lemon has been active in 802.17 from the inception of the working group.
  - He is currently a section editor responsible for 2 of the major clauses and numerous minor clauses
- He was unopposed in seeking the Vice Chair position
  - Confirmed by the WG unanimously (27:0:0)



# Motion

- Move to confirm John Lemon as Vice Chair of 802.17

M: Takefman

S: Jeffree

Y: 11

N: 0

A: 0

Passes: 11/0/0

5 6.02 MI Confirm Vice Chair of 802.1 - Jeffree 5 02:44 PM

Moved: To confirm Paul Congdon as vice chair of 802.1.  
Moved: Jeffree/Kerry

Passes: 11/1/0

6.03	MI*	Renewal of 802.15.4 study group	-	Heile	0	
6.04	MI*	Approve formation of 802.15 Mesh Network study group	-	Heile	0	
6.05	MI*	Approve formation of 802.15.4 enhancements study group	-	Heile	0	
6.06	MI*	Approve formation of 802.15.3 enhancements study group	-	Heile	0	
6.07	MI*	Approve formation of 802.18 study group on unused TV spectrum	-	Stevenson	0	
6.08	MI*	Approve formation of 802.11 study group on ESS mesh networking	-	Kerry	0	
6.09	MI*	Approve formation of 802.11 study group on wireless performance prediction	-	Kerry	0	
6.10	MI*	Continuation of ECSG on Handoff	-	Johnston	0	
6.11	MI*	Extension of 802.3 10GBASE-T study group	-	Grow	0	
6.12	MI	Approve formation of 802.3 study group on 10Gb/s operation on MMF	-	Grow	5	02:47 PM

Moved: The LMSC EC Approves the formation of the IEEE 802.3 10 Gb/s on FDDI-grade multimode fiber study group.

Moved: Grow/Rigsbee

15 Howard Frazier represented members that allege there was no debate allowed, with a voice vote on calling the question with dissent, the chair ruling that the question had been called without verifying that 2/3 supported the calling of the question. The members requested that the EC provide certain remedies below. The following text was provided by the members of 802.3 seeking remedy.

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5 **Nature of objection**

On Thursday, November 13, 2003, during the closing Plenary of IEEE 802.3, a motion was made and seconded that 802.3 authorize the formation of a SG on 10GBASE serial optics to support a 300m reach on installed FDDI grade MM fiber, develop and PAR and Five Criteria for review. Before any debate was allowed, and despite a queue at the floor microphones, the Chair immediately recognized an individual seated in the audience who immediately called the question, thereby preventing the right of other members to debate the motion. There was objection to calling the question. The Chair asked for a voice vote on calling question and ruled, based on that voice vote, that the question was called. Even though there were multiple dissenting votes, no vote count was taken to establish the 2/3 approval required to call a question. Therefore, no debate was allowed and the motion was voted on. The Chair then recognized two speakers who disputed the previous action and the Chair stated that the complaints were noted but no change in the ruling was granted.

The IEEE Computer Society Policies and Procedures manual (1998) states that meetings shall operate under Robert's Rules of Order Newly Revised [Ref. 10]. In Section 42 of Robert's Rules of Order, the following text is given:

20 "The right of members to debate and make motions cannot be cut off by the chair's putting a question to vote with such rapidity as to prevent the members getting the floor after the chair has inquired if the assembly is ready for the question. Even after the chair has announced the vote, if it is found that a member arose and addressed the chair with reasonable promptness after the chair asked, "Are you ready for the question?" he is then entitled to the floor, and the question is in exactly the same condition it was before it was put to vote. But if the chair gives ample opportunity for members to claim the floor before putting the question and they do not avail themselves of it, they cannot claim the right of debate after the voting has commenced."

25 **Adverse affects**

The members were deprived of an opportunity to present their position on the motion. This prevented the group from participating in debate on the motion that may have altered the outcome of the vote on the motion.

**Specific remedial action requested**

- 30
1. Nullify the vote taken on the motion on the basis that due process was not followed.
  2. Notify IEEE 802.3 WG of appeal and nullification of the vote.
  3. Revisit motion at March 2004 Plenary meeting.

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35 Respectfully submitted by the following IEEE 802.3 voting members,  
Luc Adriaenssens,  
Terry Cobb  
John George  
Paul Kolesar  
Steve Swanson

40

Geoff represented that he called the question and there was no collusion to close debate. He claims to have waited for a “pregnant pause” for other speakers.

5

**Passes: 0/0/11. The chair votes in favor of the motion, resolving the tie. Final tally: 1/0/11.**

6.13	MI*	Approve Formation of 802.3 study group on backplane Ethernet	-	Grow	0	
6.14	MI*	Approve extension of 802.11 WAVE study group	-	Kerry	0	
6.15	MI*	Approve extension of 802.11 fast roaming study group	-	Kerry	0	

7.00 Break - 5 03:00 PM

8.00 IEEE-SA Items -

8.01 II Get IEEE802 Program budget review - Walker 10 03:05 PM

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**Moved: That the LMSC EC recommend to the IEEE-SA BOG the 2005 Get IEEE802 program budget as adopted by the LMSC EC on 14 November 2003.**  
**Moved: Quackenbush/Marks**

15

An opinion was expressed that the LMSC contribution should not ever be thought of as other than an industry contribution.

One topic that was discussed was the inclusion of the sponsor logos on the working group web pages, to make the sponsorship more valuable, since the working groups are more prominent than the download pages. Several objections were expressed on this issue, including that there must be no appearance that the standards process can be bought.

20

The program will be moving from a pilot to ongoing status.

**Passes: 11/0/1**

25

**Moved: to transition the Get IEEE802 program from trial to full use.**  
**Moved: Grow/Jeffree**  
**Passes: 12/0/0**

8.02 -

8.03 -

8.04 -

9.00 LMSC Liaisons & External Interface -

9.01 II 802.1 Liaison to ITU-T - Jeffree 5 03:17 PM

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**Source:** IEEE 802.1  
**Title:** *Response to Progress on Ethernet related recommendations*

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**COMMUNICATION STATEMENT**

**To:** ITU-T Q12/15  
**Approval:** November 2003 meeting, Albuquerque  
**For:**  
**Deadline:**

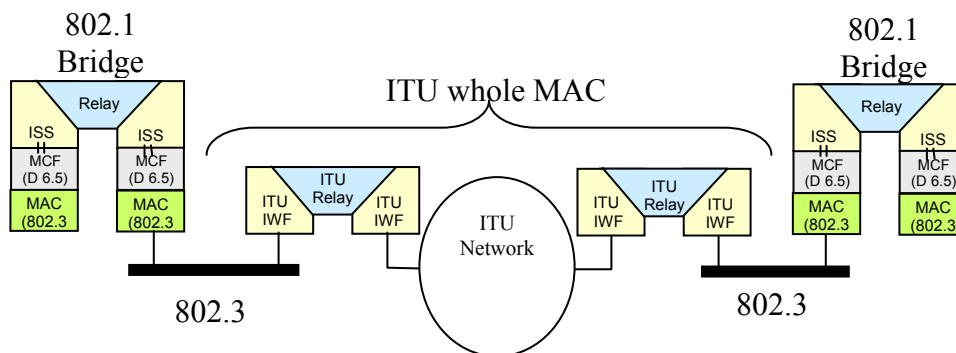
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**Contact:** Tony Jeffree, 802.1 Chair Email: <mailto:tony@jeffree.co.uk>

## **Response**

At our November 2003 meeting, the ITU-T Q12/15 liaison to IEEE 802.1 was considered in IEEE 802.1.

We understand from your liaison that you have concluded that the requirements of your EPL service force you to specify a new type of equipment which is neither an IEEE 802.1 Bridge nor an IEEE 802.3 Repeater. Given this situation your path to completely define a new device for this application is a viable course. Since this device is not an IEEE 802.1 device our committee will not be able to make any claims about how the ITU-T device will interoperate in an IEEE 802 network or how it will operate with IEEE 802.1 Bridging equipment. One suggestion is that the service provided by the new type of link comprising 802.3 links and your interworking device provide the MAC Internal Sublayer Service expected by a Bridge.



We reviewed your specification G.8010 which was provided along with the liaison. Our understanding of this specification is that it provides a formal topology model for describing the reference points in an IEEE 802 network. Some of these reference points are internal to IEEE 802 equipment while other reference points identify the linkages between IEEE 802 equipment. We are not clear how these reference points correspond to IEEE 802.1 specified sublayer service interfaces. If the reference points don't align then the ITU-T architectural model may specify different network behaviors than the IEEE

802.1 model. We believe this is an inherent risk of any model translation. Conformance to IEEE specifications must be based on the IEEE 802 architectural model.

We trust that these comments will assist you in your current and future work. The work at 802.1 on provider bridges is progressing. Even though bridges are not part of the definition of the ITU-T EPL service we believe provider bridges are an important component of other Ethernet Services. For your information we have attached draft 1.4 of our IEEE P802.1ad specification. Please note that this is still work in progress.

Thank you for the invitation to attend your January 19-23, 2004 meeting. We also would like to invite the ITU-T experts to attend the upcoming IEEE 802.1 interim meeting in Vancouver, January 12-15, 2004. During this meeting some time could be scheduled to discuss topics of mutual interest. This group feels there is potential for collaboration between the two groups. We intend to share our ongoing work in future liaisons and request you share your ongoing work with us.

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Motion: Forward the above liaison from IEEE 802.1 to the ITU-T Q12/15.  
17,0,1



**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )  
 )  
Proposed Changes in the Commission’s ) ET Docket No. 03-137  
Rules Regarding Human Exposure to )  
Radiofrequency Electromagnetic Fields )  
 )  
To: The Commission )

**Via the ECFS**

**COMMENTS OF IEEE 802**

IEEE 802<sup>1</sup> hereby respectfully offers its Comments on the Notice of Proposed Rulemaking (the “NPRM”) in the above-captioned Proceeding.<sup>2</sup>

The members of the IEEE 802 that participate in the IEEE 802 standards process are interested parties in this proceeding. IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks (“WLANs”), wireless personal area networks (“WPANs”), and wireless metropolitan area networks (“Wireless MANs”).

IEEE 802 is an interested party in this Proceeding and we appreciate the opportunity to provide these comments to the Commission.

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<sup>1</sup> The IEEE Local and Metropolitan Area Networks Standards Committee (“IEEE 802” or the “LMSC”)

<sup>2</sup> This document represents the views of the IEEE 802. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.



## INTRODUCTION

1. IEEE 802 notes that the Commission has been involved with human exposure issues for many years, starting with the adoption of basic guidelines to protect workers and the general public almost 3 decades ago. The Commission has been diligent in working with industry on the study of RF effects and the formulation of Specific Absorption Rate ("SAR") values. The research results have shown so far that RF effects are primarily thermal. We note that the studies largely focused on cellphone usage and have not specifically addressed WLAN devices that typically operate in different conditions.
2. In 1996 the National Environmental Policy act was adopted, which required government agencies to evaluate the effects of government actions and procedures on the quality of human environment. The Commission addressed this issue in earlier rule makings<sup>3</sup> and also addressed the RF radiation issue by issuing several guidelines. One guideline was developed to answer basic consumer questions<sup>4</sup> and several others were developed to help industry evaluate their RF devices against applicable RF limits.<sup>5</sup>
3. Requirements for RF radiation were addressed in Parts 1 and 2 of the Commission's rules and are referenced in several of the specific radio sections, including Part 101, Part 90, Part 24 and Part 1
4. The industry has also been active in the development of appropriate test methodology <sup>6</sup> as well as the development of testing equipment, including the composition of test material to accurately simulate human tissue for measurement purposes.

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<sup>3</sup> See ET Docket 93-62 Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation and the 1997 Second Memorandum and Opinion.

<sup>4</sup> Reference OET Guide 65

<sup>5</sup> Reference OET Guide 65, as well as supplements A, B, and C

<sup>6</sup> Reference IEEE Standard 1528, ANSI C95.1, and equivalent ETSI and International Standards .

5. With the increasing awareness of the importance of RF safety by the public and the profusion of RF based products that must meet the standards for RF exposure as well as provide guidelines for use of various wireless products, this proposed rulemaking is a timely opportunity in helping to establish an efficient RF exposure testing methodology.

**COMMENTS ON ROUTINE EVALUATION AND CATEGORICAL EXCLUSION OF TRANSMITTERS, FACILITIES AND OPERATIONS**

6. We concur with the Commission that the industry would be better served by a more consistent set of rules governing RF exposure limits. The factors of power, distance, frequency, and user proximity should be primary in determining appropriate SAR limits and minimizing RF energy intercepted by human tissue.

7. We think that the Commission should be clearer in the specification of transmit power for exposure. Exposure limits should be specified in terms of power density such as is currently stated in 47CFR 1.1310.

8. We support the Commission's proposal of categorically excluding from this requirement those devices that meet the distance threshold of 20 cm and the power limit of 1.5 W ERP at or below 1.5 GHz and 3 W ERP above 1.5 GHz. We note that even though many Part 15 devices were categorically excluded by the rules they were required as a matter of standard practice to be tested regardless.

9. Therefore, while we support categorically excluding certain devices as per paragraph 14 of the NPRM, we urge the Commission to adopt clearer guidelines in this area to eliminate last minute problems and costs when certifying a categorically excluded device. This categorically exclusion from routine examination is in line with the requirements in OET 65 C (01-2001) for low power devices.

10. With the exception of a very few rare cases, indoor installations of 900 MHz, 2.4 and 5 GHz Access Points do not exceed the 3W ERP and many operate well below that level. In accordance to the requirements set forth in OET 65 C, manufacturers provide installation information instructing the installer to locate the antennas in such a way as to insure at least 20 cm separation distance for these fixed and mobile locations. The exclusion of these low power systems from exposure assessment will eliminate the requirement of performing unnecessary routine evaluations.

11. This will also address the problem of providing conflicting installation instructions as manufacturers will then only need to provide instructions informing the installer that access points must be at least 20 cm from the user or general public.

12. IEEE 802 supports the Commission's amendments for higher power systems and also supports clarifying power thresholds for consideration of categorical exclusions. We believe the guidelines set out for use of high gain directional antennas will not cause undue difficulties for the system installer. It is understood that systems operating at or below the exclusion thresholds but closer than the recommended distance of 20cm are required to be evaluated for either MPE<sup>7</sup> or SAR

**COMMENTS ON REQUIREMENTS FOR EVALUATING SAR FOR CERTAIN  
SECTION 15.247 UNLICENSED DEVICES**

13. IEEE 802 commends the Commission on addressing Part 15 .247 spread spectrum and Digital Transmission Devices with regards to RF exposure. Numerous products operate under this rule including cordless phones, Bluetooth, and 802.11 (b/g) RLAN devices. We believe that U-NII devices operating under Part 15.407 should be brought under the same RF Exposure guidelines as Part 15.247 devices.

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<sup>7</sup> Maximum Permissible Exposure

14. We support the Commission's view that a 100 mW Part 15 device operating at either 900 MHz or 2.4 GHz does not exceed the 1.6 W/kg level, as stated in the NPRM. Therefore we support allowing the exemption from routine testing and filing of data for those Part 15.247 devices operating at 100 mW or less and, by extension, U-NII devices operating under Part 15.407.

15. However we request that the Commission clarify the situation with regards to device transmit power and RF exposure in this area. Our understanding of section B of this proceeding would indicate that the transmit power threshold is 100 mW peak, which is a conducted value. The FCC and TCB grants issued also reflect maximum conducted power unless stated otherwise. Antenna gain does not appear to be considered in the threshold value proposed by the Commission. Accordingly, we would ask that the Commission revise this section of the NPRM to consider antenna gain and/or near field effects in the exclusion threshold.

16. With regards to RF safety information, we believe that including samples of the warning labels and informational disclosures within user manuals along with applications should be sufficient. We do not see the need to add additional material to Supplement C of OET 65, nor the separate publication of safety information.

#### **COMMENTS ON RF EVALUATION REQUIREMENTS FOR TRANSMITTER MODULES**

17. From 1995 onward, the FCC Authorization Branch has allowed certification of radios as modules for systems operating under Part 15.247 of the rules. This allowed the radio manufacturer to produce one base radio he could install in numerous host devices without re-certifying the radio in each host. This requirement was formalized in early 2000 as part of the instruction set for TCBs.<sup>8</sup>

18. The unresolved issue with host-independent devices was addressing the RF exposure aspects of these devices. This issue was discussed in several forums including the FCC-

instructed TCB training. The concern voiced by both reviewers and manufacturers was how to ensure compliance and the development of thresholds for exemption.

19. IEEE802 commends the Commission for making efforts to address this issue by developing guidelines for Host Independent Devices<sup>9</sup>. We further support the approach of treating the issue of multiple hosts as a Class 1 category change under Part 2 of the rules. We agree that a Class II change for a device would be required in the event of an increase in the SAR value when installed in a different host category.

20. We have some concerns with regard to the various threshold power levels suggested by the Commission for installation in the different host devices. In most cases, the manufacturer of an RLAN card does the product evaluation, however, under the new proposal the burden could be shifted in part to the host device manufacturer. This could present difficulties for a Class I change for the system integrator, as he cannot evaluate the changes when it is the grantee that has this responsibility per Part 2 of the rules<sup>10</sup>.

21. IEEE802 supports the view of the Commission that Part 15.247 devices can be certified as modules and we suggest that Part 15.407 devices should also be certifiable as modules.

22. However it is understood that to obtain a module approval as a "Host Independent Device" that a Part 15 transmitter would be required to be evaluated if its maximum transmit power exceeds the exclusion transmitter power threshold for the host device.

23. Unfortunately, it is not clear to us if radio modules need to be tested in the actual host systems or if the industry will be allowed to test them on reference test platforms and simulate the various positions on antenna placement for each type of device. Currently, there is no standard test procedure for evaluating SAR of Part 15 devices and therefore we urge the

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<sup>8</sup> Public Notice (DA 00-1407, 15 FCC Red 25,425 (2000))

<sup>9</sup> The term "Host Independent Devices" and their definition was derived from input from both the RLAN Industry members and the FCC at the 2001 TCB training on SAR.

<sup>10</sup> Reference 4 CFR Parts 2.909, 2.931, 2.932

Commission to work with industry standards groups to develop a SAR test standard for these devices.

24. IEEE 802 would strongly urge the Commission to allow such test platforms to avoid potential issues encountered with using a variety of custom host platforms. However, the Commission should not preclude future innovative designs by limiting testing only to reference test platforms.

25. IEEE 802 concurs with the Commission that multiple transmitters could be incorporated into a host device (e.g., a laptop) without raising SAR concerns provided that the aggregate power level did not exceed the Commissions' suggested power levels for that host, e.g. the value of 200 mW for screen-mounted devices in a laptop and 10 mW for keyboard located devices.

#### **COMMENTS ON MEASUREMENT OF SAR FROM MULTIPLE TRANSMITTERS**

26. IEEE 802 supports the Commission's view that simple SAR summation of multiple transmitters would be the simplest and most conservative method of estimating overall SAR values.

#### **COMMENTS ON REFERENCE TO OET BULLETIN 65**

27. IEEE 802 supports the Commission's decision regarding the standards associated with the testing methodology for SAR. We support removing the specific standards and versions from the technical rules under Part 2<sup>11</sup> and instead referring to the most recent edition of OET 65 C. We also support the continued inclusion of the outputs of relevant research groups such as IEEE SCC 28 and SCC 34 into SAR value determinations.

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<sup>11</sup> Specifically Part 2.1091(d)(3) and 2.1093 (d)

## **COMMENTS ON LABELING REQUIREMENTS FOR CONSUMER PRODUCTS**

28. We believe that devices compliant with the distance and power requirements for low RF exposure should not be required to carry the same labeling as higher power devices. We agree with the FCC on the “trigger” points for labeling requirements as applied to Part 15.247 devices. IEEE supports documentation of RF safety concerns and publication of caveats related to safe installation of devices.

29. On matter of incorporating RF safety “cut-off” switches, we do not believe that devices operating under Part 15.247 and 15.407 would require such circuitry.

## **COMMENTS ON SPATIAL AVERAGING FOR EVALUATING COMPLIANCE**

30. The “spatial-averaging” issue raised by the Commission is considered unnecessary as IEEE Standard C95.3 (1999) addresses this problem in some detail. We believe that the Commission should continue to use the IEEE standard as their primary reference point.

## **COMMENTS ON TRANSITION PERIOD**

31. We concur with the Commission on the adoption of a six month transition period for device manufacturers to become familiar with evaluation rules for devices that previously were excluded but may not be so under new guidelines. However we recommend that new rules become effective immediately and allow the old rules to remain in effect concurrently for six months after the effective date of the new rules. This would provide for a smoother transition by allowing devices complying with the new rules to be sold immediately while allowing a grandfather period for devices that comply with the old rules.

## SUMMARY

32. IEEE 802 commends the Commission for actively supporting research into the development of practical and consistent RF exposure values and measurement guidelines. We thank the Commission for recognizing the importance of SAR and RF safety and the dependency of tests on the physical configuration of the device being tested and the power levels used. We appreciate the opportunity to provide additional comments on this issue and look forward to continued involvement in the regulatory process established by the Commission.

Respectfully submitted,

/s/

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/s/

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**Moved: Stevenson/Marks**  
**Passes: 11/0/2**

5      9.03      ME      Comments on Part 15 to FCC      -      Stevenson      5      03:20 PM

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )  
 )  
Modification of Parts 2 and 15 of the ) ET Docket No. 03-201  
Commission's Rules for unlicensed devices and )  
equipment approval. )  
 )  
 )

**Via the ECFS**

**COMMENTS OF IEEE 802**

1. IEEE 802<sup>1</sup> respectfully offers its Comments on the Notice of Proposed Rulemaking (the "NPRM") in the above-captioned Proceeding.<sup>2</sup>
2. IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks ("WLANs"), wireless personal area networks ("WPANs"), and wireless metropolitan area networks ("Wireless MANs").
3. The members of IEEE 802 that participate in the IEEE 802 standards process are interested parties in this proceeding.
4. IEEE 802 appreciates the opportunity to provide these comments to the Commission.

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<sup>1</sup> The IEEE Local and Metropolitan Area Networks Standards Committee ("IEEE 802" or the "LMSC")

<sup>2</sup> This document represents the views of IEEE 802. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.

**IEEE 802 SUPPORTS THE COMMISSION’S ACTIONS IN THE SUBJECT NPRM TO  
INTRODUCE ADDITIONAL FLEXIBILITY AND CONSISTENCY IN THE RULES  
FOR PART 15 DEVICES.**

5. In our comments, we will address each of the Commission’s proposed changes in accordance with the general outline in the introduction to the NPRM, where the Commission states:

*“Specifically, in this Notice, we propose to: 1) modify the rules to permit the use of advanced antenna technologies with spread spectrum devices in the 2.4 GHz band; 2) modify the replacement antenna restriction for Part 15 devices; 3) modify the equipment authorization procedures to provide more flexibility to configure transmission systems without the need to obtain separate authorization for every combination of system components; 4) harmonize the measurement procedures for digital modulation systems authorized pursuant to Section 15.247 of the rules with those for similar U-NII devices authorized under Sections 15.401- 15.407 of the rules; 5) modify the channel spacing requirements for frequency hopping spread spectrum devices in the 2.4 GHz band in order to remove barriers to the introduction of new technology that uses wider bandwidths; 6) clarify the equipment authorization requirements for modular transmitters; and 7) make other changes to update or correct Parts 2 and 15 of our rules. In addition, we invite comment on ways the Commission might improve spectrum sharing among unlicensed devices.”<sup>3</sup>*

**IEEE 802 SEES THE NEED FOR A BALANCED APPROACH TO SECTORIZED  
ANTENNA RULES**

6. In changing these rules the FCC must be careful not to set limits based on today’s technologies that may restrict future technology developments, and that there is a clear understanding of the benefits and issues with the current technologies. Although both sectorized and/or phased array systems can provide important benefits, solutions allowed by the rules must not be detrimental to other wireless communication devices or future developments.

7. In section 11 of the NPRM, the Commission asks: *“We seek comment regarding the characteristics that a system would need to exhibit in order to be classified as a sectorized or phased array antenna system.”*

8. IEEE 802 believes that that classification should be broadened to include future developments (MIMO, space/time codes, etc.).

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<sup>3</sup> ET Docket No. 03-201, paragraph 1

**IEEE 802 RECOMMENDS THAT THE COMMISSION CONSIDER A WIDER TOTAL BEAMWIDTH**

9. Why is 120 degrees aggregate a limit? We see no reason why the total beam width should be limited to 120°. The aim of paragraph 11 appears to disallow systems exploiting the total EIRP and building high power omni-directional devices, however the rule as stated does not accomplish this, i.e. it does not prohibit the use of 120, very high power beams, which is equally as detrimental.

10. The proposed 120° degree rule makes it particularly difficult for wireless providers as it can increase their costs significantly. One of the largest costs of wireless service is installation and site licensing fees. Systems disallowed by this wording could provide full 360° coverage from a single device installation, greatly reducing deployment and operating costs.

**IEEE 802 RECOMMENDS USING ANTENNA PATTERN AS THE BASIS FOR EVALUATING THE EQUIVALENCE OF REPLACEMENT ANTENNAS RATHER THAN THE PHYSICAL CONFIGURATION OF THE ANTENNA.**

11. The NPRM states:

*“Any antenna of a similar type that does not exceed the antenna gain of tested antennas may be used without retesting. Use of an antenna of a different type than the tested antenna (i.e. yagi antenna vs. a horn antenna) or one that exceeds the gain of a tested antenna would require retesting and new approval by either a Telecommunication Certification Body or the Commission.”<sup>4</sup>*

12. IEEE seeks clarification on the use of the term antenna “TYPE” in reference to proposed changes to FCC section 15.203. The NPRM is focused on Access Point considerations while client side radios are affected by the same rules.

13. In the client radio industry the term antenna “TYPE” can be interpreted by a Telecommunication Certification Body (“TCB”) as a different material make up and not necessarily a different antenna pattern as alluded to in this section.

14. IEEE 802 recommends using antenna pattern as the basis for evaluating the equivalence of replacement antennas rather than the physical configuration of the antenna. This evaluation method would address both the Access Point and Client market for antenna rules.

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<sup>4</sup> ET Docket No. 03-201, paragraph Appendix A, paragraph 12

## **IEEE 802 SUPPORTS HARMONIZED RULES FOR POWER MEASUREMENT**

15. We fully support the Commission's efforts to simplify and harmonize the rules for power measurement as applied to digital modulations. We note that the Commission, in the proposed draft text for Part 15 rules in 15.247(e) re: peak power measurement states:

*"The peak output power and peak power spectral density for digitally modulated system may be determined in accordance with the provisions specified in §§ 15.407(a)(4) and 15.407(a)(5)."*<sup>5</sup>

As currently written, the two referenced paragraphs do not clearly spell out measurement procedures for peak power measurement.

## **IEEE 802 RECOMMENDS THAT THE PROCEDURAL CLARIFICATIONS GIVEN BY THE COMMISSION IN DA-02-2138 BE INCLUDED IN THE NEW RULES ON PEAK POWER MEASUREMENT**

16. The Commission previously felt the need to clarify the U-NII power measurement rules beyond the texts in 15.407(a)(4) and 15.407(a)(5) by issuing DA-02-2138, "*Measurement Procedure Updated for Peak Transmit Power in the Unlicensed National Information Infrastructure (U-NII) Bands*", which provides considerable clarification as to the intent of the U-NII band power specifications and the approved measurement methods. For example, DA-02-2138 states

*"To accommodate this new technology [specifically, multi-carrier modulation in DA-02-2138, or, as it has evolved, digital modulation in the current 15.247 rules] peak transmit power may be averaged across symbols over an interval of time equal to the transmission pulse duration of the device or over successive pulses. The averaging must include only time intervals during which the transmitter is operating at its maximum power level and must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level."*

*"Appendix A describes acceptable measurement procedures under this interpretation. Though not required, provision of a continuous transmit mode on devices to be tested will simplify the measurement process."*<sup>6</sup>

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<sup>5</sup> ET Docket No. 03-201, paragraph 1

<sup>6</sup> DA-02-2138A1, August 30, 2002, page 1.

17. It seems to us that the clarifications in DA-02-2138 are still necessary to support the Commission's intent in this NPRM to implement consistent rules for power measurement in the case of digital modulations. We strongly recommend that the Commission include the substance of the measurement techniques specified in DA-02-2138 within the planned update to Part 15 rules either explicitly in an appropriate section of the rules, or by reference to DA-02-2138 to fully clarify the complex issue of power measurement.

**IEEE 802 SUPPORTS THE CHANGE IN HOPPING RULES TO ACCOMMODATE  
THE PROPOSED NEW BLUETOOTH MODULATIONS**

18. We understand from the Commission's comments that the Commission proposes to limit this modification to the 2.4 GHz segment in response to the specific change requested by the Bluetooth SIG. We recommend that the Commission adopt this new rule for the following reasons:

- A. The 2/3 bandwidth rule increases the number of frequency hopping channels in that can fit into available spectrum for a given 20 dB transmission bandwidth, improving the opportunity for frequency hopping systems to adaptively avoid interfering signals from other systems.
- B. Frequency hopping systems using spread spectrum techniques to improve performance in the presences of interference will pay a smaller penalty in terms of the number of available channels compared to the present rules. For example, FSK systems might use a higher than optimum modulation index to reduce their sensitivity to interference from co-channel and intermodulation induced interference, and at the same time have more hopping channels in available under the 2/3 bandwidth rule compared to the present rules.

**IEEE 802 RECOMMENDS ALLOWING THE 2/3 RULE FOR ALL FREQUENCY  
HOPPING SYSTEMS REGARDLESS OF THE NUMBER OF HOPPING CHANNELS**

19. We recommend that the 2/3 bandwidth rule apply to all frequency hopping systems in the 2.4 GHz band operating at an output power no greater than 125 mW, regardless of the number of hopping channels employed, as opposed to the limitations stated in the proposed changes to Part 15.247. The net effect of the 2/3 bandwidth rule is to increase the number of available hopping channels, improving the interference immunity of any frequency hopping implementation. We believe that restricting the rule to systems operating with less than 75 hopping channels denies the benefits of the 2/3 rule to a wider range of systems without any clear benefit to coexistence between different systems.

**IEEE 802 RECOMMENDS THAT MODULAR APPROVAL BE EXTENDED TO  
ALLOW TRUE MIX-AND-MATCH COMBINATION OF MODULAR COMPONENTS**

20. The concept of modularity put forth by the Commission, namely:

*“These transmitters consist of two basic components: the “radio front end,” or radio elements and the “firmware” or specific hardware on which the software that controls the radio operation resides. The radio front end and firmware can each be self-contained units.”<sup>7</sup>*

as stated freezes two “sets of behavior”, radio behavior and firmware behavior, and welds them together in terms of compliance requirements. The benefit of the rule seems to be limited to a manufacturer of both sets, or to cooperating manufacturers of these sets. The digital key recognition concept, taken to its logical limits, could allow module interfaces to be defined at a variety of alternative boundaries. This implementation flexibility will encourage technological innovation and allow competitive development to take place, something that is de-facto prevented by the current wording of the requirement.

**IEEE 802 SUPPORTS THE DIGITAL KEY RECOGNITION APPROACH TO  
ENSURING ONLY CERTIFIED COMBINATIONS OF MODULAR COMPONENTS  
ARE FUNCTIONAL**

21. In principle, the proposed requirement would facilitate the broader form of modularity advocated in our previous comment. In fact it can be generalized so that an intelligent device that controls the behavior of a radio subsystem can verify that the types of all the modules involved – including the antenna in some case – are all acceptable for the regulation under which it is supposed to operate.

22. Concerning the Type Number and its encryption we suggest that such a type number be sealed with the supplier’s secret key (of a public key crypto system) to form an originator’s certificate. The processes for generating such keys and signatures are a well established.

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<sup>7</sup> ET Docket No. 03-201, paragraph 33

**IEEE 802 NOTES THAT SPECTRUM ETIQUETTE REGULATIONS HAVE NOT  
ALWAYS ACCOMPLISHED THE INTENDED PURPOSES**

23. Previous attempts at imposing spectrum etiquettes have a checkered history, not in the least because the concept is simple and therefore attractive but the realization is difficult – even for a specific class of devices. A case in point is unlicensed PCS – development of the etiquette took a long time and its success in the market to date is questionable. The latter is not true of the “Wi-Fi” standards developed by IEEE 802.11. Here very specific spectrum sharing methods have been developed to meet market demands. As the requirement to provide more performance and quality of service increased, the complexity of the spectrum sharing mechanisms increased as well. Again, this complexity proves necessary even within the context of a single type of a single family of devices.

24. Whether an etiquette is needed at all depends very much on the relative distances and duty cycles of the equipment concerned. More work on understanding the need for and the utility of etiquettes for spectrum sharing is required.

25. At least two forms of etiquette may be distinguished – the in-band signaling etiquette and the out of band signaling etiquette. Both allow a variety of devices to share spectrum but differ in their operation and cost.

26. An in-band signaling etiquette uses the same frequency channel to communicate sharing information. It uses the same radio transceiver as is used for data communications. In the most simple form that information is simply binary information about spectrum occupation at some point in time – the simple listen-before-talk etiquette. Because spectrum access has to be extremely conservative in order to avoid devices obliterating each other’s transmissions, such a simple etiquette is inefficient and a hindrance to the full performance of the devices that use it. The barriers to such an etiquette will be greater with the increasing differences in spectral behavior of the devices concerned and the degree of tolerance they have for interference. For example, if one were to derive an etiquette from the specifications of WiFi and WiMax systems so as to allow the two to share the same spectrum, the result would be inefficient and complex.

27. An out of band signaling etiquette may require two transceivers – one for the signaling channel and one for the data transmission channel. Using a single transceiver is possible but less efficient since signaling and data transmissions compete for the same resource. With two transceivers, devices can continually communicate about their use of and requirements for use of the shared spectrum and so optimize the use of the available spectrum. Also, the data transmission “band” can be much broader than the signaling band – this is another advantage of an out of band signaling etiquette that in some cases may be considered to offset its cost of implementation.

28. The above few paragraphs only touch upon the complexity of the issue of etiquettes for spectrum sharing. Therefore, we suggest that the Commission, instead of mandating an etiquette at an early stage, work together with industry and academia to investigate the technical and practical possibilities before issuing regulation in this matter.



**IEEE 802 BELIEVES THAT SPECTRUM SHARING CAN BE ACCOMPLISHED BY A VARIETY OF APPROACHES**

29. The issues related to spectrum sharing are complex, as the Commission clearly indicates by the lengthy list of questions the Commission poses in this NPRM regarding spectrum etiquette.

30. In the most general sense, sharing of spectrum between heterogeneous networks operating under Part 15, or sharing between unlicensed devices and licensed services like broadcast TV, or sharing between unlicensed devices and equipment and systems that have primary allocations for national security reasons can be accomplished by human agency (contracts, or agreements between various parties to cooperate in sharing spectrum), by government regulation, and/or by technologies which promote shared access.

**IEEE 802 RECOMMENDS NO CHANGE TO PART 15 RULES FOR CURRENTLY ALLOCATED SPECTRUM TO ADD ADDITIONAL SPECTRUM ETIQUETTE REQUIREMENTS**

31. Within the currently established Part 15 bands, with the exception of the U-NII band compromises, and the current rules for the unlicensed PCS band, adding more rules regulating spectrum etiquette than those which exist or which are in process (i.e. the 5 GHz NPRM) seems to us to be unnecessary.

**IEEE 802 SUPPORTS DEFINING SPECTRUM ETIQUETTE WHICH WOULD ENABLE UNLICENSED SHARING OF LICENSED BANDS, ESPECIALLY UNUSED TV BROADCAST CHANNELS**

32. From a technology standpoint, proceeding from concepts established by the Unlicensed PCS etiquette, the DFS and TPC protocols put in place as part of the agreements for adding spectrum to the 5 GHz U-NII band, and the general practices developed by IEEE 802 in creating standards which establish the operating characteristics of wireless networks, it is possible to envision a set of protocols which would support effective sharing between licensed and unlicensed services operating in the same bands.

33. Protocols required for sharing of spectrum between unlicensed networks and licensed or incumbent networks need as a minimum to support autonomous operation, collision avoidance, and frequency reuse. These protocols could be described as the operational basis for the spectrum etiquette for unlicensed cognitive radio systems operating in the presence of incumbent users on a non-interference basis.

34. A minimum set of protocols to support a fully cognitive spectrum etiquette might be described as follows:

- Network Frequency Allocation (NFA), which provides a mechanism to make and change network frequency assignments on an adaptive basis to avoid incumbents (TV broadcasters or other services with regulatory priority over unlicensed devices), and to select preferentially either unused or lightly used operating channels.
- Link Power Control (LPC), which allows the receiver at the terminal node of a two node link to tell the transmitter at the source node how to minimize its output power while still maintaining good overall network performance. The goal is to reduce the aggregate power emitted by the network to make the network's operating frequency available for reliable operation by other networks located nearby.
- Incumbent Profile Detection (IPD), which supports licensed user detection based on some reliable spectrum signature. In sharing between TV broadcast services and an unlicensed network as an example, the IPD implementation might identify an NTSC broadcast by detecting the sound subcarrier, or identify an ATSC broadcast by detecting the pilot tone in the ATSC spectrum.
- Collision Detection And Avoidance (CDAA), which implements a "listen-before-talk" etiquette along with an appropriate backoff and retry timing mechanism when a collision occurs during a transmission. Burst mode communications methods are the only way to share a channel among heterogeneous unlicensed devices, or among nodes on a single network. Since collisions are inevitable, some means has to be provided to deal with a collision.

**IEEE 802 URGES THE COMMISSION TO MOVE AHEAD WITH RULEMAKING  
WHICH WOULD SUPPORT UNLICENSED USE OF UNOCCUPIED BROADCAST TV  
CHANNELS**

35. In terms of unlicensed sharing with licensed services, including the possibility of harvesting fallow TV broadcast spectrum, it seems to us the cognitive protocols described above provide the basis for a robust spectrum etiquette which fully protects the interests of incumbent broadcasters.

36. We urge the Commission to move ahead with rulemaking which would allow unlicensed systems to operate in otherwise fallow TV broadcast spectrum. Such rules would improve spectrum efficiency and create opportunities for commercial and non-profit utilization of what is currently a largely wasted national asset.

**IEEE 802 SUPPORTS HP'S REQUEST FOR AN INCREASE IN THE NUMBER OF  
UNITS THAT MAY BE IMPORTED FOR EVALUATION**

37. We support HP in suggesting that the limits on the number of units that can be imported for test and evaluation purposes be increased to 2000, and that the quantity of devices allowed for demonstrations be increased to 100. It seems reasonable to allow the use of demonstration equipment for market development activities outside of trade shows. We also support simplifying the FCC's rules by combining Sections 2.1204(a)(3) and 2.1204(a)(4).

Respectfully submitted,

/s/

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**Moved: Stevenson/Kerry**  
**Passes: 11/0/2**

5      9.04      ME      WAPI Letter to China      -      Stevenson      5      03:22 PM

**Moved: Stevenson/Kerry**

5 Stuart Kerry indicated that the 802.11 working group has produced a similar letter and fully supports this motion.

Roger indicated that the letter indicates a desire to establish a relationship between the IEEE-SA China that will lead to joint development of standards.

**Passes: 10/0/3**

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**9.05 ME RLAN protection criteria to ITU-R**

**- Stevenson 5 03:25 PM**



Received: 17 November 2003  
Subject: Questions ITU-R 1/8, 212/8, 215/8  
Source: Document 8A-9B/6

## **IEEE**

### **RADIO LOCAL AREA NETWORK PROTECTION CRITERIA**

This contribution was developed by IEEE Project 802, the Local and Metropolitan Area Network Standards Committee (“IEEE 802”), an international standards development committee organized under the IEEE and the IEEE Standards Association (“IEEE-SA”)\*.

The content herein was prepared by a group of technical and regulatory experts in IEEE 802 and was approved for submission by the IEEE 802.18 Radio Regulatory Technical Advisory Group, the IEEE 802.11 Working Group on Wireless LANS (“RLANs” in ITU-R terminology), the IEEE 802.15 Working Group on Wireless Personal Area Networks, the IEEE 802.16 Working Group on Wireless Metropolitan Area Networks, and the IEEE 802 Executive Committee, in accordance with the IEEE 802 Policies and Procedures, and represents the view of IEEE 802.

This contribution proposes to commence work on a “Working document towards a preliminary draft new Recommendation” outlining appropriate protection criteria for WAS/RLAN stations in the mobile service operating under the provisions of Resolution 229 (WRC-03) and provides some preliminary recommendations thereon for study and consideration. Whether this work is carried out in JRG 8A-9B or Working Party 8A may depend in part on future decisions regarding whether JRG 8A-9B will be maintained, or disbanded and its work on this subject passed to Working Party 8A.

It is recognized that Resolution 229 (WRC-03) specifies that WAS/RLAN stations operating in the subject allocations in the mobile service may not cause interference to, and may not claim protection from, certain other services with primary allocations in the same bands as allocated for WAS/RLAN stations by Resolution 229 (WRC-03).

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## Introduction

With the adoption of Resolution 229 (WRC-03)<sup>1</sup>, primary allocations were made to the mobile service in the bands 5 150-5 250 MHz, 5 250-5 350 MHz, and 5 470-5 725 MHz for the implementation of WAS, including RLANs, as described in Recommendation ITU-R M.1450. Therefore, WAS/RLAN stations in the mobile service in those bands are entitled to protection from services or applications with lower, or no, regulatory status.

However, no ITU-R Recommendation exists specifying the protection criteria for these stations at this time. This situation will obviously create problems in conducting sharing studies relative to operations, or proposed operations, by services or applications with lower, or no, regulatory status.

We also note that Document 8A-9B/6, a liaison statement from Task Group 1/8, recognizes that there is no established protection criteria for WAS/RLAN stations and that further studies are necessary to determine an appropriate protection criteria.

## Discussion

As stated previously, the subject of developing appropriate protection criteria for WAS/RLAN stations in the mobile service was the topic of a meeting of a group of technical and regulatory experts at the recent IEEE 802 plenary session, held in Albuquerque, New Mexico, 10-14 November 2003.

This meeting was organized by the IEEE 802.18 Radio Regulatory Technical Advisory Group to bring together interested WAS/RLAN technical experts from IEEE 802 and promote discussion and preliminary analysis on what would constitute a reasonable protection criteria for WAS/RLAN stations operating in the mobile service according to the provisions of the ITU Radio Regulations.

It was explained to the WAS/RLAN technical experts that any proposal for a protection criteria had to be reasonable – that some limited degree of interference or interference potential must be tolerated – and that it would be unreasonable to attempt to assert that no interference whatsoever could be tolerated.

There was also some discussion of the nature of the protection criteria prescribed for other primary services under the ITU Radio Regulations, including the differentiation between safety of life and non-safety of life services.

All of the technical experts recognized and accepted the fact that some interference, or the potential therefore, must be accepted.

However, it was also noted that, as a primary user, WAS/RLAN systems operating under the provisions of Resolution 229 (WRC-03) are entitled to reasonable protection from interference from services or applications with lower, or no, regulatory status.

The preliminary consensus opinion/recommendations of the technical and regulatory experts within IEEE 802 is as follows:

- The development of an appropriate protection criteria for WAS/RLAN stations operating under the provisions of Resolution 229 (WRC-03) is desirable and appropriate.
- WAS/RLAN systems operating under the provisions of Resolution 229 (WRC-03) should not suffer significant data rate and range impairments as a result of interference from services or applications with lower, or no, regulatory status.

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<sup>1</sup> Formerly designated Resolution [COM5/16].

- In order to not suffer such unacceptable interference, a protection criteria of – 6 dB I/N worst case (aggregate or individual interferer) in the victim WAS/RLAN receiver's bandwidth should be tentatively proposed for discussion, subject to further study.
- Preliminary estimates indicate that this would result in approximately a 1 dB degradation in received SNR, which is expected to equate to approximately a 5% reduction in the range at which an IEEE 802.11a RLAN system could maintain its maximum link data rate of 54 Mb/s.
- This degree of interference is considered to be an acceptable compromise. However, larger degradations in range, or reductions in rate at range, would be considered unacceptable because they would represent too large an adverse impact on system performance.
- The proposed – 6 dB I/N figure is based on an interferer whose power spectral density is essentially flat across the victim WAS/RLAN receiver's bandwidth. Further study is required to determine the effects of narrowband interferers, pulsed interferers, or interferers with high peak to average power ratios.
- Because the technology of WAS/RLANs is planned to evolve to even higher data rates in the relatively near future, further studies will also be required to consider the required protection criteria for future WAS/RLAN systems that may operate in the same mobile service allocations in the future.

IEEE 802 hopes that this contribution will prove useful in stimulating productive discussion in WP 8A and/or JRG 8A-9B and it that will contribute in a positive way to the development of an appropriate protection criteria for WAS/RLAN systems operating under the provisions of Resolution 229 (WRC-03).

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**Moved: Stevenson/Kerry**  
**Passes: 10/0/2**

9.06 MI 802 comments on ISO/IEC TR 24704 - Grow 5 03:29 PM

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**Moved: Mr. Thompson to collect SEC comments on ISO/IEC TR 24704 (“Customer premises for wireless access points”), with the intention of submitting comments to the US TAG for SC25/WG3 not later than the closing date in support of the INCITS ballot scheduled to commence mid-December, 2003. Approval is granted to use process for submission of regulatory TAG positions.**

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**Moved: Grow/Thompson**

**Passes: 13/0/0**

9.07

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9.08

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9.09

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9.10

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10.00

**LMSC Internal Business**

-

10.01

MI

**WG Financial Policy P&P Change**

-

**Quackenbush**

**5**

**03:35 PM**

**Proposed IEEE 802 LMSC Policy and Procedure Revision**  
**on**  
**Working Group Financial Operations Rev 4**

**From:** Bill Quackenbush

**To:** LMSC Executive Committee

**Date:** 11/14/2003

**Duration:** Expires November 14, 2003

**Purpose:** To add specific requirements to the LMSC Policies and Procedures (LMSC P&P) on the financial operations of LMSC subgroups.

**Rationale for proposed text:**

It has relatively recently become very difficult if not impossible to find non-IEEE hosts for LMSC subgroup interim sessions that are willing to pay all of the expenses of a session. As a result, registration fees are being collected for most LMSC subgroup interim sessions. It has also become evident there are insufficient requirements and guidelines in the LMSC P&P to guide, control and monitor the financial operations of LMSC subgroups and to ensure that their financial operations comply with the IEEE, IEEE-SA and the Computer Society rules on the financial operations of standards development groups.

Two major considerations when proposing changes to the LMSC P&P are the incremental workload imposed on the LMSC Treasurer when an LMSC Working Group decides to operate with treasury and the degree of financial independence granted to a WG/TAG operating with treasury. I think a reasonable approach is that a WG/TAG operating with treasury be required to conduct its financial operations in a manner similar to that required for the LMSC.

**Proposed Text:**

The following changes are proposed.

1. That item d) of Section 5.1.4.3 Working Group Chair's Responsibilities be changed to
  - d) ~~Provide a full accounting to the LMSC Treasurer of all fees collected and retained, under authority of 5.1.4.4 Working Chair's Authority, to meet Working Group expenses, and the disposition of these funds.~~ Ensure that any financial operations of the WG comply with the requirements of Section 5.1.6 of these Policies and Procedures.
2. That item g) of Section 5.1.4.4 Working Group Chair's Authority be deleted.
  - g) ~~Collect fees to meet Working Group expenses.~~
3. That Section 6.1 Registration Fees be deleted and its contents be distributed between two new sections 6.1 Plenary Sessions and 6.2 Interim Sessions, that the second paragraph of Section 5.1.3.5 Meetings and Participation be moved to the new Section 6.2 and that the current Section 6.2 Registration Policy be renumbered Section 6.3.

**6.1 Registration Fees**

~~The LMSC Treasurer may collect fees from all attendees of any technical meeting held in conjunction with an LMSC Plenary session to cover the expenses of the Plenary~~

~~session and the expenses of operating the LMSC. The LMSC Treasurer may collect fees from all attendees of any meeting held in conjunction with an interim session of an LMSC subgroup that is hosted by the LMSC to cover the expenses of the interim session.~~

~~Fees may be collected from all attendees of any technical meeting held in conjunction with an interim session of an LMSC subgroup that is not hosted by the LMSC.~~

## **6.1 Plenary Sessions**

Plenary sessions are the primary LMSC sessions. All active LMSC WGs and TAGs hold their plenary sessions during LMSC Plenary sessions.

The LMSC may collect fees, usually a registration fee, from all attendees of any portion of any technical meeting that is a part of an LMSC Plenary session to cover the expenses of the Plenary session and the expenses of operating the LMSC.

## **6.2 Interim Sessions**

In addition to plenary sessions, an LMSC WG/TAG or WG/TAG sub group may hold interim sessions. An interim session may be for a single LMSC WG/TAG or WG/TAG subgroup or it may be a joint interim session for any combination of LMSC WGs, TAGs and WG/TAG sub groups.

Interim sessions shall have as goals: 1) Reasonable notification (>30 days) in addition to any announcement given at a plenary session, and 2) Few last minute shifts in location (<< 1 per year).

### **6.2.1 Interim Session Hosts**

Each interim session and joint interim session shall have a Host. The **Host** is the entity that is responsible for the finances and the logistical planning, preparation for and execution of the session.

An interim session or joint interim session may be hosted by the LMSC, an LMSC WG or TAG operating with treasury, several LMSC WGs and/or TAGs operating with a joint treasury or a non-LMSC entity. LMSC WGs or TAGs not authorized to operate with treasury and LMSC WG or TAG subgroups may not host an interim session.

Alternatively, an interim session or joint interim session may be co-hosted (jointly hosted) by any combination of an LMSC WG or TAG operating with treasury, several LMSC WGs and/or TAGs operating with a joint treasury and a non-LMSC entity. Each of the entities co-hosting an interim session (Co-hosts) shall have approved a written agreement stating the responsibilities and liabilities of each Co-host and the disposition of any surplus funds before any financial commitments are made for the co-hosted session. When an interim session is co-hosted, the term Host means all of the Co-hosts as a single entity.

The responsibilities, authorities and liabilities of a Host are defined in the following list. The Host may contract with meeting planners and/or other entities to assist it in hosting the session.

1. The Host is solely responsible for the finances and the logistical planning, preparation for and execution of the session.

2. The Host will consult and coordinate with the Chair(s) of the WG(s)/TAG(s) or WG/TAG sub group(s) participating in the session on the financial and logistical planning, preparation for and execution of the session.
3. The Host is solely responsible for all contracts and agreements that are for goods and/or services exclusively for the session.
4. The Host is solely responsible for collecting the fees from attendees, if any, paying the session expenses including any penalties.
5. The Host is solely responsible for any session deficit and the disposition of any session surplus funds.

### **6.2.2 Interim Session Fees**

The Host of an interim session may collect fees from all attendees of any part of any technical meeting that is part of the session. The fees, usually a registration fee, shall be used to cover the direct expenses of the session, and in some cases may also be used to cover other WG/TAG operating expenses. The **direct expenses** of a session are those expenses, including penalties, that are incurred for goods and/or services that are completely consumed by the planning, preparation for and/or execution of the session.

If a WG operating with treasury, or several WGs and/or TAGs operating with a joint treasury, are the Host of an interim or joint interim session, any fees collected from attendees should be deposited respectively in WG treasury or joint treasury. If several WGs operating with treasury and/or several groups of WGs/TAGS operating with joint treasury are Co-hosts a joint interim session, any fees collected from attendees should be deposited in the bank account of one of the co-hosting WGs/TAGs which shall be specified in the so-hosting agreement.

If a WG/TAG operating with treasury hosts or co-hosts an interim session for only itself, or several WG(s) and/or TAG(s) operating with a single joint treasury host or co-host a joint interim session for only themselves, the collected fees, if any, may also be used to cover other operating expenses of the participating WG(s)/TAG(s).

If a WG/TAG operating with treasury hosts or co-hosts a joint interim session for itself or its subgroups and organization units from other WG(s)/TAG(s), or several WG(s)/TAG(s) operating with a joint treasury host or co-host a joint interim session for themselves or their subgroups and organization units from other WG(s)/TAG(s), the collected fees, if any, may also be used to cover other operating expenses of the hosting WG(s)/TAG(s) if and only if the fees for the session are agreed to by the Chairs of all of the WG(s)/TAG(s) with an organization unit participating in the session. An **organizational unit of a WG/TAG** is defined as the WG/TAG itself or any of its subgroups.

### **6.2.3 Interim Session Financial Reporting**

A WG/TAG or WG/TAG subgroup shall prepare and submit all financial reports required by IEEE, IEEE-SA, Computer Society and LMSC regulations on any of its interim sessions for which fees were collected and that did not comply with all of the following requirements.

1. The WG/TAG or WG/TAG subgroup was not the Host of the session.

2. The Host complied with the definition of a host in Section 6.2.1 of these P&P.
3. Neither the WG/TAG or WG/TAG subgroup nor any of its officers had any financial responsibility for the session including any deficit or penalties.
4. Neither the WG/TAG or WG/TAG subgroup nor any of its officers handled and/or had or exercised any control over any funds either received for the session or disbursed to pay the expenses of the session including penalties.
5. Neither the WG/TAG or WG/TAG subgroup nor any of its officers had and/or exercised any decision authority over the disposition of any surplus funds from the session.
6. Neither the WG/TAG or WG/TAG subgroup nor any of its officers have or had any control over or beneficial interest in any surplus funds from the session.

In the case of an interim session that is hosted by a single non-IEEE entity and for which fees are collected, the usual financial goal is for the session to be non-deficit with a minimum surplus. A recommended way of achieving this is for the Host to commit to a contribution to the session and then reduce that contribution as required to minimize any session surplus. It may be most convenient for the Host to not make the contribution (transfer the funds) until the size of the contribution needed to meet the non-deficit minimum surplus goal is known. If there is a surplus, the Host may retain it or dispose of it in any manner it chooses that does not violate item 6 above.

4. That a new subsection on financial operations be added to Section 5.1 LMSC Working Groups.

#### **5.1.6 Working Group Financial Operations**

A WG may wish or need to conduct financial operations in order for it to host interim sessions for itself or one or more of its sub groups or to acquire goods and/or services that it requires for its operation.

A WG that claims any beneficial interest in or control over any funds or financial accounts whose aggregate value is \$500 or more is determined to have a treasury and said to be “**operating with treasury**”.

A WG may operate with treasury only if it requests permission and is granted permission by the LMSC EC to operate with treasury and thereafter complies with the rules of Section 5.1.6. The WG request to operate with treasury shall be supported by a motion that has been approved by the WG and that authorizes the WG to request such permission and to operate with treasury. The WG may, again by WG approved motion, surrender EC granted permission to operate with treasury. The LMSC EC may withdraw permission for a WG to operate with treasury for cause.

A WG sub group shall not operate with treasury.

#### **5.1.6.1 WG Financial Operation with Treasury**

The financial operations of a WG operating with treasury shall comply with the following rules.

1. The WG shall conduct its financial operations in compliance with all IEEE, IEEE-SA and IEEE Computer Society rules that are applicable to the financial operations of standards committees. As of November 2003, the documents containing these rules include but are not limited to the following.
  - IEEE Policies, Sections 10.2 Standards Meetings, 11 IEEE Financial Matters and 12.6 Contracts with exclusive Rights
  - IEEE Financial Operations Manual (FOM), Sections FOM.3 Asset/Liability Management and FOM.8 Contract and Purchasing Orders
  - Computer Society Policies and Procedures Manual, Section 16.7.1 Checking Accounts
2. The WG shall have a Treasurer who is responsible to the WG Chair for the operation of the WG treasury, for ensuring that the operation of the WG treasury and the WG financial accounts complies with these Policies and Procedures and follows prudent financial procedures.
3. The WG shall have an Executive Committee (WG EC) comprised of at minimum the WG Chair, Vice Chairs, Secretaries and Treasurer. The WG Chair shall be the Chair of the WG EC.
4. The WG shall open and maintain a WG bank account whose title shall begin with "IEEE" followed by the numerical identity of the WG, e.g. IEEE 802.1. The LMSC Chair shall be an authorized signer for the account. The LMSC Treasurer shall be notified within 30 days of the bank, account number, account title and authorized signers for the account when the account is opened and whenever any on these items change.
5. The WG may open and maintain one or more WG merchant accounts for the settlement of credit card transactions. The title of each merchant account shall begin with "IEEE" followed by the numerical identity of the WG, e.g. IEEE 802.1. Each WG merchant account shall be linked to the WG bank account. The LMSC Treasurer shall be notified within 30 days of each merchant account, account number and account title when the account is opened and whenever any on these items change.
6. All funds collected and/or received by a WG shall be deposited in the WG bank account.
7. All funds retained by a WG shall be held in the WG bank account or in IEEE approved investments.
8. The WG may disburse and/or retain funds as appropriate to pay approved expenses and maintain an approved operating reserve.
9. Signature authority for any WG financial account is restricted to those IEEE, IEEE-SA and Computer Society officers and/or staff that are required to have signature authority by IEEE, IEEE-SA and Computer Society regulations, to LMSC officers and to the officers of the WG owning the account with the sole exception that at most two other individuals may be granted signature

authority for the WG bank account for the sole purpose of assisting the WG in conducting its financial operations provided that each such individual has provided agreements, indemnity and/or bonding satisfactory to the IEEE. The granting of signature authority to any individual other than the WG Treasurer and those required by IEEE, IEEE-SA, Computer Society or LMSC regulations shall be by motion that is approved by the WG.

10. The WG shall prepare and maintain its own accounting and financial records.
11. The WG Treasurer shall prepare for each WG plenary session a financial report that summarizes all of the WG financial activity since the last such report. The report shall be submitted to the LMSC treasurer before the opening of the session, shall be presented to WG membership at the opening plenary meeting of the session and shall be included in the session minutes. The format and minimum content of the report shall be as specified by the LMSC Treasurer.
12. The WG Treasurer shall prepare and submit an audit package for each calendar year during any portion of which the WG operated with treasury as required by IEEE regulations. The package shall contain all material required by IEEE Audit Operations for an IEEE audit and shall be submitted to the IEEE for audit or the LMSC Chair for local audit as required by IEEE audit regulations. If the package is submitted to the IEEE, a summary of the WG's financial operations for the audit year shall be submitted to the LMSC Chair by the same time that the audit package is submitted to the IEEE. The format and minimum content of the summary shall be as specified by the LMSC Treasurer.
13. The maximum and minimum size of the WG operating reserve may be set by the LMSC EC.
14. All WG expenditures require the approval of the WG EC with the sole exception that each WG EC member may be reimbursed from the WG treasury for up to \$200 of WG expenses incurred between WG sessions without specific approval of the WG EC.
15. The location, date and fees for each interim session hosted or co-hosted by the WG require the approval of the WG EC.
16. For each interim session hosted or co-hosted by the WG, all reasonable and appropriate direct expenses for goods and/or services for the session and that are provided under contract(s) and/or agreement(s) that are exclusively for that interim session are approved when the WG EC approves the location, date and fees for the session.
17. Any contract and/or agreement to which the WG is a party, whose total value is greater \$5000 and that is not for goods and/or services exclusively for a single interim session hosted or co-hosted by the WG require the approval of the WG EC and the LMSC EC before execution.
18. The WG shall maintain an inventory of each item of equipment that it purchases that has a useful life of greater than 6 months and purchase price of

greater than \$50. A copy of the inventory shall be provided to the LMSC Treasurer during December of each year.

#### **5.1.6.2 WG Financial Operation with Joint Treasury**

Two or more WG(s) and/or TAG(s), with the approval of the LMSC EC, may operate with a single joint treasury. WG(s) and/or TAG(s) that operate with a joint treasury shall have no other treasury. The merger of separate WG/TAG treasuries into a joint treasury or the splitting of a joint treasury into separate WG/TAG treasuries requires approval of the LMSC EC. Each such action shall be supported by a motion from each of the involved WG(s) and/or TAG(s) that requests the action and that has been approved by the WG/TAG.

The operation of a joint treasury is subject to the same rules as a WG operating with treasury with the following exception The Executive Committee overseeing the joint treasury shall be a Joint Executive Committee that is the union of the Executive Committees of the WG(s)/TAG(s) operating with the joint treasury. The Chair of the Joint EC shall be selected by the Joint Executive Committee and shall be the Chair of one of the participating WG(s)/TAG(s).



## **LMSC EC Motion 1 (Treasurer)**

**That the proposed LMSC P&P change on “WG Financial Operations” which has now completed LMSC eballot and comment resolution be adopted.**

**Moved: Bill Quackenbush**

**Seconded: Mike Takefman**

**Y:**

**N:**

**A:**

**x:xx pm 11/14/03**

**Moved: Quackenbush/Takefman**

**Passes: 13/0/0**

5

**10.02 MI Initiate Financial Policy P&P Change**

**- Quackenbush 5 03:39 PM**

## **LMSC EC Motion 3 (Treasurer)**

**That the proposed LMSC P&P change dealing with LMSC financial operations be approved for Distribution and Executive Committee eballot.**

**Moved: Bill Quackenbush**

**Seconded: Bob Grow**

**Y:**

**N:**

**A:**

**x:xx pm 11/14/03**

**Moved: Quackenbush/Grow**

**Passes: 12/0/0**

5

**10.03 MI Precedence P&P Change**

**- Sherman**

**5**

**03:43 PM**

**Proposed Resolutions for IEEE 802 LMSC Policy and Procedure Revision Ballot  
on  
Precedence**

**From:** Matthew Sherman

**To:** LMSC Executive Committee

**Date:** 11/14/2003

**Duration:** September 2, 2003 till October 3, 2003 11:59 PM Eastern Time

(Daylight or Standard as applicable)

**Purpose:** Include Order of Precedence in LMSC P&P.

**Rationale for proposed text:**

Model IEEE SA P&P has a Precedence section, as do all the rules that supercede the LMSC P&P and many of the ones below it. The LMSC P&P should also have such a section.

**Proposed Text:**

**The redlined changes below are made relative to the March 2003 LMSC P&P (with some modification for approved but not yet incorporated P&P revisions). In case of conflict with prior P&P revisions completed but not yet integrated, this P&P revision will take precedence. It includes all changes made as a result of comment resolution. Note that Figure 1 (while not shown as changed) was updated during the final revision.**

## 1. OVERVIEW

The scope of the IEEE Project 802 LAN MAN Standards Committee (LMSC) is to develop and maintain networking standards and recommended practices, using an open and accredited process, and to enable and advocate them on a global basis.

~~IEEE-IEEE~~ Project 802 (P802) is a Standards Committee ~~which-that~~ reports to the Standards Activity Board (SAB) of the IEEE Computer Society. It operates under sponsorship of the IEEE Computer Society. ~~In the event of any conflict between this document and the IEEE Computer Society rules, the rules of the IEEE Computer Society shall take precedence.~~

The ~~IEEE~~ P802 Standards Committee is directed by the LMSC Executive Committee (EC), which oversees the operation of a standards sponsoring organization (see

~~Figure 1 IEEE PROJECT 802 REPORTING RELATIONSHIP~~

~~Figure 1 IEEE PROJECT 802 REPORTING RELATIONSHIP~~

~~Figure 1 PROJECT 802 REPORTING RELATIONSHIP~~). The [IEEE](#) P802 LMSC Executive Committee serves as the Executive Committee for both the sponsor ballot groups as well as the Standards Development Groups. The standards sponsoring organization is the LMSC and includes the Executive Committee (EC), a [balloting invitation](#) pool for forming LMSC Sponsor balloting groups, and a set of Standards Development Groups.

The terms “local area network” (LAN) and “metropolitan area network” (MAN) encompass a number of data communications technologies and the applications of these technologies. There is no single technology that is applicable to all applications. Correspondingly, no single local or metropolitan area network standard is adequate for all applications. In recognition of these facts, the standards developing organization has been divided into Working Groups and Technical Advisory Groups to standardize a small number of the technologies applicable to local or metropolitan area networks (see

~~Figure 2 STANDARDS DEVELOPMENT GROUPS~~

~~Figure 2 STANDARDS DEVELOPMENT GROUPS~~).

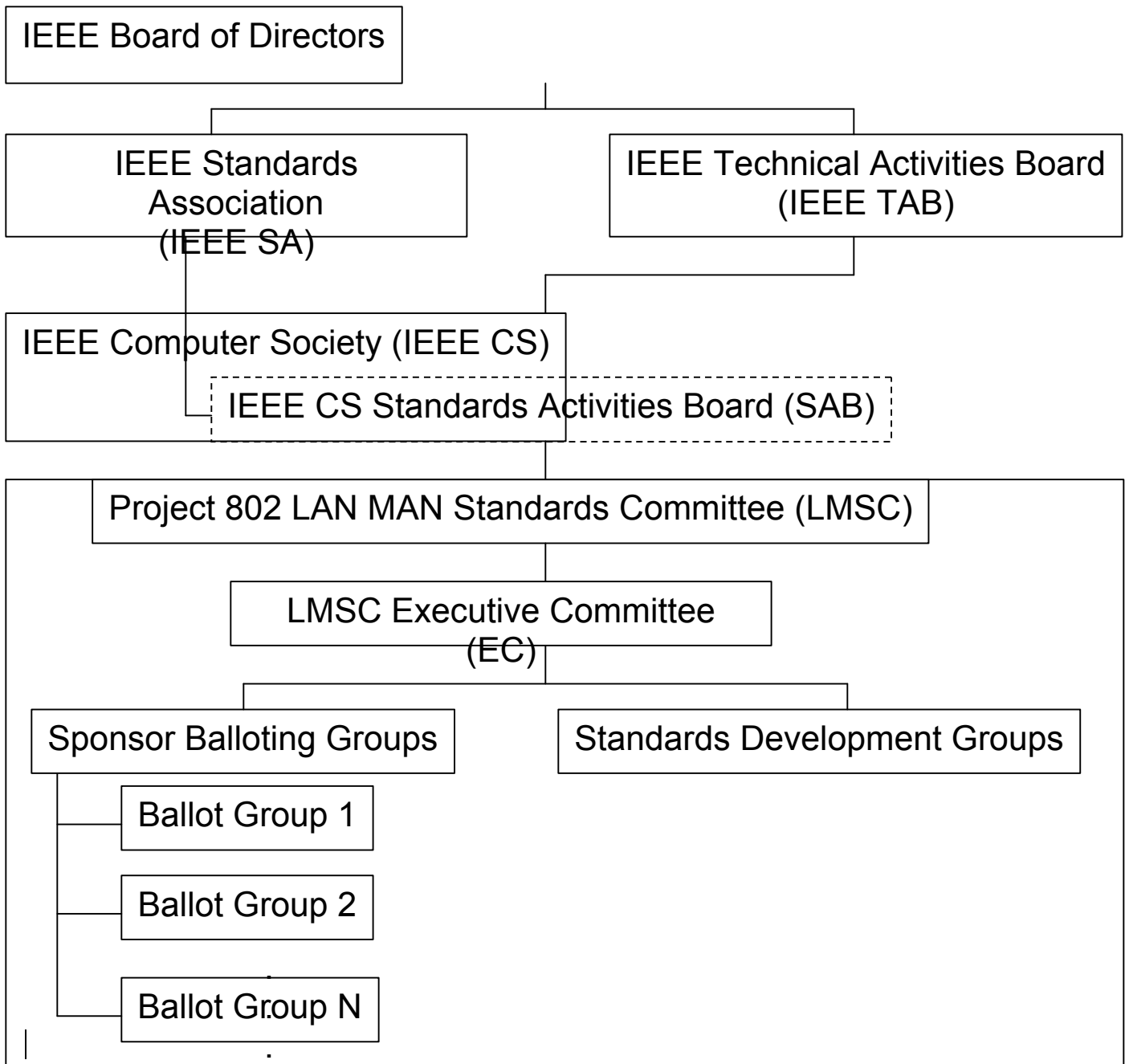


Figure 1 - [IEEE](#) PROJECT 802 REPORTING RELATIONSHIP

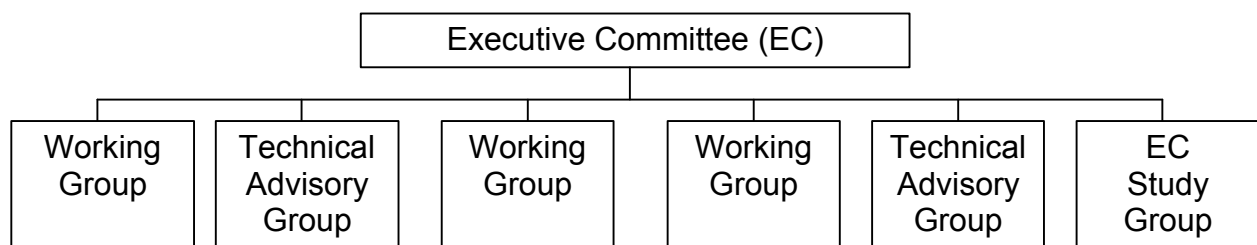


Figure 2 STANDARDS DEVELOPMENT GROUPS

The division of the Standards Development Groups into Working Groups, Study Groups, and Technical Advisory Groups is necessitated by [the need to](#):

- a) [Getting the Produce](#) standards ~~out~~ in a reasonable time, with each group working at its own pace and reflecting the maturity of the particular technology.
- b) [Ehave](#) each group [maintainine](#) and [reviseing](#) its own standard, as appropriate.

On the other hand, overall coordination of the Working Groups and Technical Advisory Groups is necessary to:

- a) Keep the individual standards within the scope of [IEEE](#) Project 802's charter.
- b) Prevent overlap or conflict between the individual standards.
- c) Promote common technologies between the individual standards in the interest of compatibility.

The [IEEE](#) P802 LMSC Executive Committee provides this coordination as a portion of its function.

The operation of the LMSC is subject to regulations contained in a number of documents, including these Policies and Procedures. The regulating documents are identified in the following list and are given in their order of precedence from highest to lowest. If any two documents in this list contain conflicting regulations, the conflict shall be resolved in favor of the document of higher precedence.

[New York State Not-for-Profit Corporation Law](#)

[IEEE Certificate of Incorporation](#)

[IEEE Constitution](#)

[IEEE Bylaws](#)

[IEEE Policies](#)

[IEEE Financial Operations Manual](#)

[IEEE Board of Directors Resolutions](#)

[IEEE Standards Association Operations Manual](#)

[IEEE-SA Board of Governors Resolutions](#)

[IEEE-SA Standards Board Bylaws](#)

[IEEE-SA Standards Board Operations Manual](#)

[IEEE CS Constitution](#)

[IEEE CS Bylaws](#)

[IEEE CS Policies and Procedures, Section 11](#)

[IEEE CS Board of Governors Resolutions](#)

[IEEE CS SAB Policies and Procedures](#)

[LMSC Policies and Procedures](#)

[Working Group / Technical Advisory Group Policies and Procedures](#)

[Robert's Rules of Order Newly Revised \(Latest Edition\)](#)

The order of precedence presented here has been derived from the model P&P developed by the IEEE—SA, augmented by documents identified within the IEEE CS SAB P&P. While both the IEEE-SA and IEEE CS (via the IEEE TAB) report to the IEEE Board of Directors independently, for purposes of standards development the IEEE CS (via the IEEE CS SAB) acts as a sponsor within the IEEE—SA, and its documents have been placed accordingly in the order of precedence.



#### **5.1.4 Operation of the Working Group**

The operation of the Working Group has to be balanced between democratic procedures that reflect the desires of the Working Group members and the Working Group Chair's responsibility to produce a standard, recommended practice, or guideline, in a reasonable amount of time. *Robert's Rules of Order Newly Revised* (latest edition) ~~shall apply to questions of parliamentary procedure not covered herein~~ is the reference for parliamentary procedures.

Moved: Sherman/Stevenson  
Passes: 13/0/0

10.04 MI I.D.E.A.L. Press Release

- Rigsbee

5

03:45 PM

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FOR IMMEDIATE RELEASE Contact: Jordan S. Jacobs  
October 25, 2003 (407) 999-9870

## **I.D.E.A.L. Technology's Newly Formed Network Services Division Awarded Multi-Year Contract with IEEE 802 LAN/MAN Standards Committee**

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□ *Contract for Wired and Wireless Computer Network Deployments at Meetings Worldwide* □

10

ORLANDO, October 25, 2003 - I.D.E.A.L. Technology Corporation's newly formed Network Services Division has been awarded a multi-year contract for computer network design and deployment with the Institute of Electrical and Electronics Engineers (IEEE) Project 802 LAN/MAN Standards Committee (LMSC) and its Wireless Working Groups. The contract engages I.D.E.A.L. Technology to provide on-site computer network solutions and services employing 802.3 (Ethernet) and 802.11 (Wireless LAN) standard technologies to support as many as 1,500 members at various plenary and interim meetings throughout the United States and other parts of the world, including Singapore and Canada. *"We needed a company that could design and support an enterprise-level network in a dynamically changing, non-office environment,"* said Mr. Paul Nikolich, Chair of the IEEE 802 Committee. *"We chose I.D.E.A.L. because they have done a consistent job of supporting our networking needs during our previous meetings at several different venues."*

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I.D.E.A.L. Technology is a leading subject matter expert with the Linux operating system, Open Source tools, and wireless networking technologies. The company has developed several proprietary solutions to allow for the rapid deployment of secure, stable, and scalable mobile computer networks, both wired and wireless. The networks integrate heterogeneous servers and workstations to provide a complete suite of services including VPN connections, user authentication, software application hosting, and resource sharing. The administration modules of the network allow for custom features such as server load balancing and failover/ redundancy, Internet bandwidth usage-tracking, banner-ad blocking, and wireless access point monitoring.

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Mr. Anthony Awtrey, a principal of I.D.E.A.L. Technology, leads the technical team that performs the on-site network deployments.

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*"We are excited to include the IEEE 802 Groups on our Network Services Division client list,"* said Awtrey. *"We have supported some of their working groups in the past and this contract is an extension of our previous work."* The multi-year contract is a strategic win for the company's newly formed Network Services Division. *"It's a vote of confidence that our company's division was selected to support the organization that defines the actual wired and wireless networking standards,"* said Awtrey.

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### **About IEEE 802 LMSC**

The IEEE 802 LAN/MAN Standards Committee (LMSC) (<http://www.ieee802.org>) is sponsored by the IEEE Computer Society under the IEEE Standards Association.

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(<http://www.computer.org>) to develop international standards for Local Area Networks (LANs) and Metropolitan Area Networks (MANs). IEEE 802 has published many LAN/MAN Standards since 1980, including the standards for the 802.3 Ethernet LAN family, the 802.5 Token Ring LAN family, the 802.11 Wireless LAN family, the 802.15 Wireless Personal Area Network (WPAN) family, and the 802.1 Bridging and Virtual Bridged LANs.

45

### **About IEEE**

The IEEE (<http://www.ieee.org>) has more than 380,000 members in approximately 150 countries. Through its members, the organization is a leading authority on areas ranging from aerospace, computers, and telecommunications to biomedicine, electric power, and consumer electronics. The IEEE produces nearly 30 percent of the world's literature in electrical and electronics engineering and in computer science. This nonprofit organization also sponsors or cosponsors more than 300 technical conferences each year.

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### **About I.D.E.A.L. Technology's Network Services Division**

The newly formed Network Services Division of I.D.E.A.L. Technology Corporation (<http://www.idealcorp.com/NSD>) specializes in rapidly-deployed, wireless/wired

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mobile computer network solutions that are secure, scalable, and stable. The portable networks are based upon the company's use and proprietary configurations of the

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Linux operating system and other Open Source software. The division provides on-site networking support at various indoor and outdoor venues for meetings, events,

conferences, and emergency/disaster situations. The division also provides other related services and solutions, such as pre-event website portals, planning networking services for meetings, and

platform-independent collaboration software for attendance tracking, voting, document version control, and maintaining membership information.

For more information about this division, please contact Mr. Jordan Jacobs ([jordan@idealcorp.com](mailto:jordan@idealcorp.com) or 407-999-9870 x12).

### **CONTACT INFORMATION:**

Jordan S. Jacobs (EMAIL: [jordan@idealcorp.com](mailto:jordan@idealcorp.com))

I.D.E.A.L. Technology Corporation (<http://www.idealcorp.com>)  
12151 Science Drive, Suite 102 / Orlando, FL 32826  
(407) 999-9870 (877) IDEAL CORP  
**END**

5

**Moved: To issue a press release regarding the I.D.E.A.L network support contract, as edited by Geoff Thompson.**  
**Moved: Rigsbee/Jeffree**

10 **Passes: 13/0/0**

**10.05 MI Miscellaneous Equipment Purchase - Rigsbee 10 03:56 PM**

**Moved: to purchase the following equipment for meeting support, for a total expenditure of no more than \$50,150.00:**  
**Get list from Buzz. (Not provided)**

15

**Moved: Rigsbee/Heile**  
**Passes: 5/4/4**

**10.06 MI Selection of future meeting sites - Rigsbee 15 04:10 PM**

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March 12-17, 2006  
Get list from Buzz. (Not provided)

**Moved: Select the HR New Orleans**  
Moved: Quackenbush/Stevenson  
Passes: 12/1/0

25

July 9-14, 2006  
Get list from Buzz

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**Moved: Select HR San Diego, subject to successful contract negotiations.**  
**Moved: Stevenson/Upton**  
**Passes: 5/5/3, the chair votes in favor.**

35

**November 12-17, 2006**  
Get list from Buzz

Deferred until March.

**10.07 MI Approval Face to Face contract for 1/04 and 3/04 meetings - Quackenbush 5 04:29 PM**

## **LMSC EC Motion 2 (Treasurer)**

**That 802 is authorized to contract with Face to Face Events to provide web registration and meeting planning services for the January 2004 802 hosted interim session and the March 2004 802 Plenary session under the same terms and conditions as for the November 2003 session.**

**Moved: Bill Quackenbush**

**Seconded: Buzz Rigsbee**

**Y:**

**N:**

**A:**

**x:xx pm 11/14/03**

**Moved: Quackenbush/Rigsbee**

**Moved: to divide the question:**

**Motion 1: interim**

5 **Motion 2: plenary**

**Kerry/Stevenson**

**Fails: 4/5/1**

**Main motion Passes: 6/1/5**

10

**10.08 MI Software Contract Approval**

- **Kerry 15 04:34 PM**

**Moved: to approve the I.D.E.A.L. software contract of r 802.11 and 802.15.**

**Moved: Heile/Stevenson**

15

A question was asked if this would be useful to other groups. Stuart responded that it would be useful and could be used by other groups at any time. It is already in use by 802.11, 802.15, 802.18, and 802.19.

**Passes: 8/2/2**

**10.09 MI Proposed P&P change on roll call votes**

- **Takefman 5 04:37 PM**

**IEEE 802 LMSC Policy and Procedure Revision Ballot**  
**on**  
**Roll Call Votes**

**From:** Michael Takefman

**To:** LMSC Executive Committee

**Date:** 11/14/2003

**Duration:** January 5, 2004 till February 6, 2004 11:59 PM Eastern Time

(Daylight or Standard as applicable)

**Purpose:** Include required minority to approve a Roll Call vote in LMSC P&P.

**Rationale for proposed text:**

LMSC P&P do not include a threshold on a vote to request a roll call vote. Analysis of Robert's Rules and the rules of Congress shows that a one fifth (1/5) minority is a reasonable requirement. Without such a rule in the LMSC P&P the minority is not protected from the majority as the default threshold for such a vote is > 50%.

**Proposed Text:**

**The changes below are made relative to the July 2003 LMSC P&P (with some modification for approved but not yet incorporated P&P revisions). In case of conflict with prior P&P revisions completed but not yet integrated, this P&P revision will take precedence.**

**5.1.4.2 Voting**

There are two types of votes in the Working Group. These are votes at meetings and votes by letter ballot.

...

**5.1.4.2.3 Roll Call Votes**

A roll call vote can be ordered at the discretion of the chair or when the vote following a request for a roll call vote achieves greater than or equal to one fifth (1/5) of the members voting [i.e. Yes / (Yes + No) >= 0.2].

# Motion

- Move that the proposed LMSC P&P change dealing with Roll Call Votes be approved for distribution and Executive Committee e-ballot.

M: Takefman

S: Quackenbush

Y:

N:

A:

2/3 required

**Moved: Takefman/Quackenbush**  
**Passes: 10/2/1**



# Motion

- Moved: That LMSC subgroups operate under the proposed P&P change on Roll Call Votes until changes covering Roll Call votes are formally incorporated into the IEEE 802 LMSC P&P.

M: Takefman

S: Quackenbush

Y:

N:

A:

There was a call for the orders of the day. Business moved to the next item.

**10.10 MI Approve operation of 802.11 and 802.15 with joint treasury - Kerry 10 04:45 PM**

Moved: Kerry/Heile  
Passes: 11/0/2

10.11			-			
10.12			-			
10.13			-			
10.14			-			
10.15			-			
10.16			-			
11.00			-			
11.01	II	802 Reorganization update	-	Frazier	5	04:47 PM

# 802 Reorganization

11-November-2003

# Goals

- Define new organizational structure for LAN/MAN standards development
- Define plan for implementation
- Present one or more proposals to EC on Friday

# Option 1 - 6 votes - 3 votes

- Status quo - don't restructure

## Option 2 - 10 votes - 5 votes

- Form an “802” SCC (standards coordinating committee) under IEEE-SA SASB
- some number ( $\geq$ ) subgroups that cover scope of existing 802 working groups
- subgroups can submit PARs/drafts directly to IEEE-SASB, run sponsor ballots
- SCC executive committee considers only new work being brought to SCC (formation of new working groups) meets concurrent w/ SASB
- SCC composed of subgroup chairs
- subgroups are autonomous w.r.t. financial operations and meeting logistics

## Option 3 - 16 votes - 7 votes

- Divide into two (wired & wireless) sponsors
- Two parallel ECs w/ similar resp to current EC for WGs underneath them
- Need two architectural/overview WGs
- Independent financial/logistics



# Option 9 - 12 votes - 14 votes

- Maintain 802
- Modify P&P to allow more freedom
- Allow for separate WG plenaries
- Allow for independent financial operations
- EC meets electronically?
- One 802 plenary per year
- All other meetings conducted as interims or electronically

# four strategies

- Maintain 802 under C/S - 2 votes - (8 by chicago)
- Creating some CC independent of C/S - 11 votes (12 by chicago)
- Creating two+ separate CC independent of C/S - 1 vote (3 by chicago)
- Create two+ parallel sponsors under C/S - 5 votes (11 by chicago)

# concerns (1)

- 18- Logistics problems associated with size
- 15- current P&P are broken
- 14- maintaining architectural consistency across MACs wrt future organization
- 13- increased friction between WGs
- 11- Continually at odds over operational style and procedures
- 11- Difficulty of coordinating technical work across a group of this size

## concerns (2)

- 9 - need to devolve power from EC to WGs
- 9- operational efficiency of WGs
- 7- large groups need faster response time, more dynamic environment, without losing quality

**11.02 DT ad hoc EC meeting in Vancouver - Marks 5 04:51 PM**

5 Roger mentioned that we might consider a policy and procedure to be able to conduct EC meetings outside of plenary sessions. Geoff pointed out that an ad hoc face to face meeting would be very useful and that email ballots could be started 9 days in advance of that meeting, so that resolutions could be adopted while in Vancouver.

**11.03 II Indemnification Issue Update - Nikolich 5 04:55 PM**

10 Paul reported that Karen Kenney reported on the indemnification issue at the 3P's (IEEE-SA Past, Present, Pending Presidents) meeting during the IEEE Board of Directors meeting in Seattle earlier this week. The 3Ps understand the importance of the issue. In addition, IEEE's legal counsel was also made aware of the issue. The issue is being taken very seriously, so much so Dan Senese, IEEE executive director, has been involved in the discussions and wants make sure this is resolved quickly.

15 **11.04 II P&P Update - Sherman 5 04:58 PM**



OVERVIEW OF IEEE 802 LMSC  
CONFERENCE NETWORK

**Prepared for:**  
**Institute of Electrical and Electronics Engineers**  
**Albuquerque – November 9<sup>th</sup> - 14<sup>th</sup> 2003**

**Anthony L. Awtrey**  
**Principal / Vice President**  
**I.D.E.A.L. Technology Corporation**

*aawtrey@idealcorp.com*  
*www.idealcorp.com*



# INITIAL GOALS

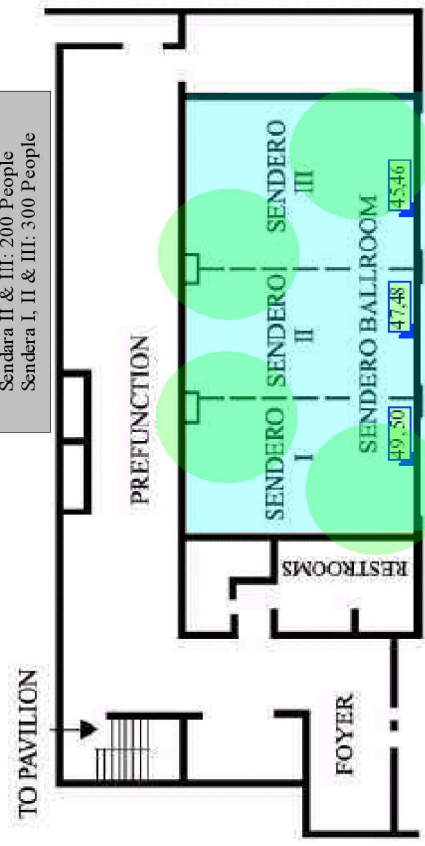
- Provide network support for conference
  - Network topology design and implementation
  - Management of network resources
  - Internet access
  - File and print server access
- Provide end user support for conference
  - Wireless and wired client configuration
  - Diagnose and resolve VPN issues
- Deliver documentation of the conference network to satisfy contract requirements



# 1133-Albuquerque Hyatt Regency, NM

- Sendara I: 100 People
- Sendara II: 100 People
- Sendara III: 100 People
- Sendara II & III: 200 People
- Sendara I, II & III: 300 People

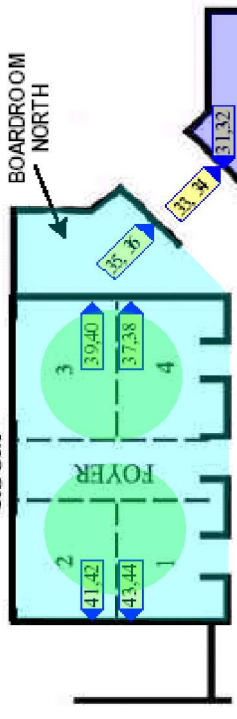
## FIRST FLOOR



**BUSINESS CENTER**  
MDF: SW1

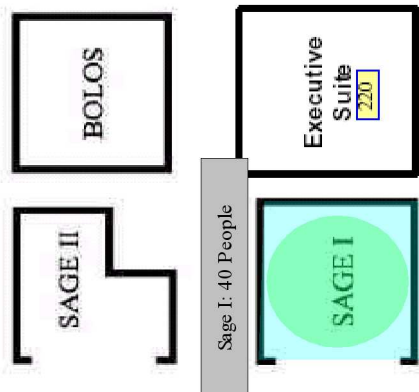
- Fiesta I: 25 People
- Fiesta II: 25 People
- Fiesta III: 25 People
- Fiesta IV: 25 People
- Fiesta I & II: 50 People
- Fiesta III & IV: 50 People
- Fiesta I, II, III and IV: 100 People

## FIESTA ROOM

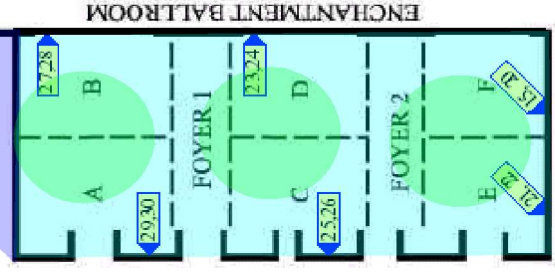
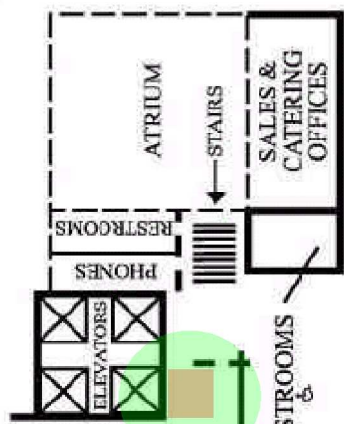


# Hyatt Regency Hotel

## SECOND FLOOR

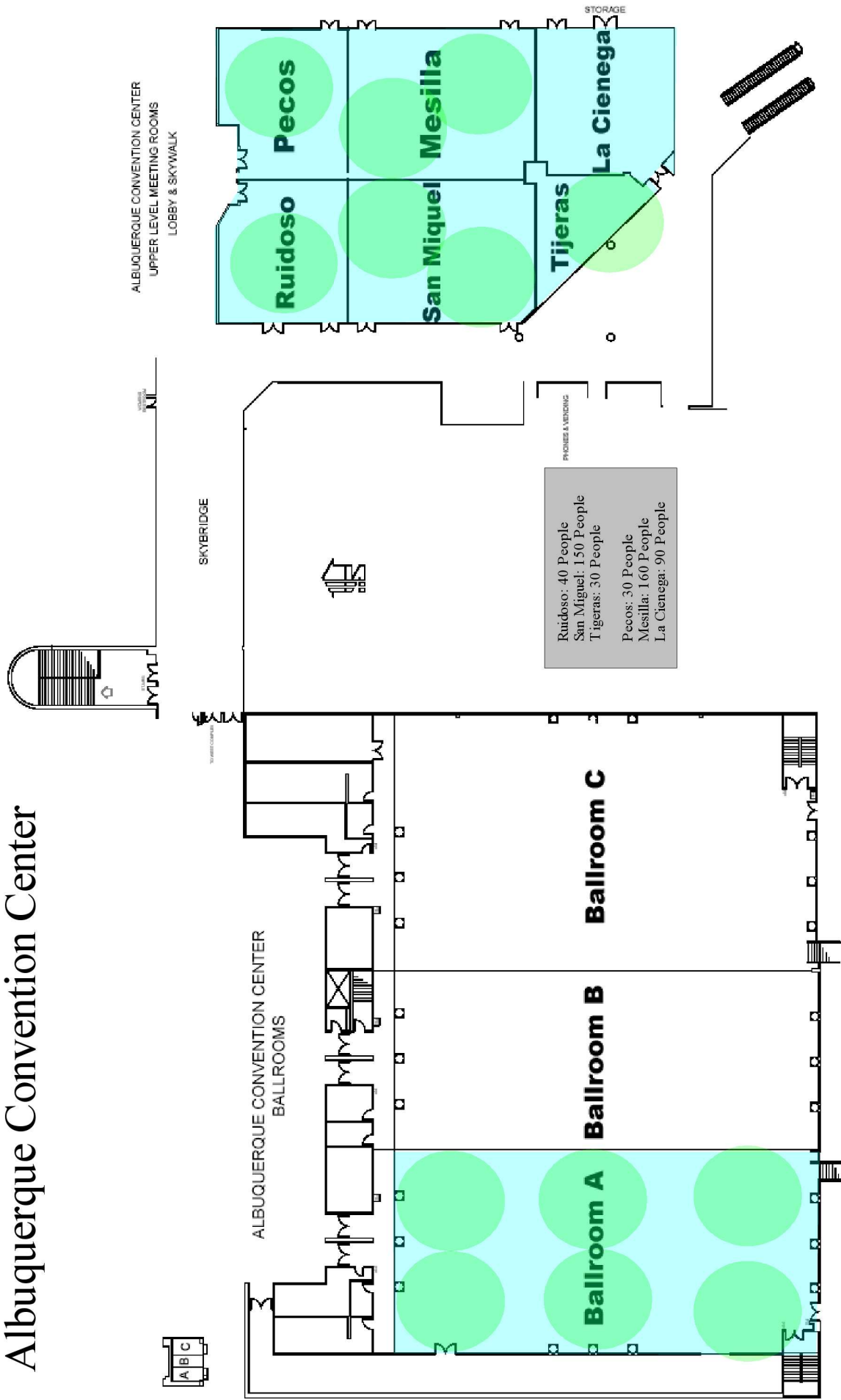


- GP I: 60 People
- GP II: 60 People
- GP III: 60 People
- GP IV: 60 People
- GP V: 120 People
- GP VI: 175 People
- GP I & II: 100 People
- GP II & III: 100 People
- GP I, II, & III: 160 People
- GP IV, V & VI: 355 People
- GP I, II, III, IV, V & VI: 850 People



- Enchantment A: 25 People
- Enchantment C: 25 People
- Enchantment D: 25 People
- Enchantment E: 25 People
- Enchantment F: 25 People
- Enchantment C & D: 40 People
- Enchantment E & F: 60 People
- Enchantment C, D, E & F: 100 People

# Albuquerque Convention Center



Ruidoso: 40 People  
 San Miguel: 150 People  
 Tijeras: 30 People  
 Pecos: 30 People  
 Mesilla: 160 People  
 La Cienega: 90 People

Grand Ballroom A: 400 People

# NETWORK STATISTICS

(Statistics accurate as of 10:00am 11-14-2003)

- Unique devices requesting IP address: 1310
- Total web requests served: 5,567,927
- Total bytes of data delivered: 47,970,153,372
- Max simultaneous Masq sessions: 9,227 (3,345 avg)
- Max simultaneous IPSEC tunnels: 172 (32 avg)
- Max simultaneous PPTP tunnels: 79 (34 avg)
- Max Internet access utilization: 1,240KB/s (9.92Mb/s)
  - 4 x T1 = 6.176Mbps

# CLIENT MAC VENDORS

Vendor	#	Vendor	#	Vendor	#
3 Com Corporation	33	D-Link Systems, Inc.	26	Nokia	7
Acer Technologies Corp.	2	Delta Networks, Inc.	13	Netgear, Inc.	58
Allied Telesis, K.K.	1	Dell Computer Corp.	18	Nextcomm, Inc.	1
ALPS Electronics Co., Ltd.	1	Elecom Co., Ltd.	1	Nortel Networks	5
AMBIT Microsystems Corp.	33	Epiqram, Inc.	4	Planet Communications, Inc.	2
ANI Communications Inc.	14	Enterasys Networks	4	Premax Electronics	26
Apple Computer, Inc.	21	Ericsson Group	2	Proxim, Inc.	20
Askey Computer Corp.	4	Farallon Computing/Netopia	18	Palm Inc.	1
Asustek Computer Inc.	2	Fujitsu Limited	9	Phillips Components	10
AboCom Systems, Inc.	1	Giga Fast E. Ltd.	2	Quanta Computer Corp	2
Action Technology Corp.	1	GemTek Technology Co., Ltd.	27	Realtek Semiconductor Corp	1
Acer Incorporated	3	Global Sun Technology, Inc.	6	Redcreek Communications, Inc	1
Acrowave Systems Co., Ltd.	1	HP	21	Ralink Technology, Corp.	2
Agere Systems	231	I-O DATA DEVICE, INC.	5	Samsung Electronics Co., LTD.	2
AirVast Technology Inc.	1	IBM Corporation	9	Sharp Corporation	2
Airgo Networks, Inc.	1	Intel Corporation	2	SMC Networks, Inc.	11
Aironet Wireless Communication	54	Intersil Corporation	8	Sony Corporation, LTD	16
Allied Telesis K.K.	1	IP One, Inc.	1	Symbol Technologies, Inc.	10
AmbiCom, Inc.	2	Intel Corporation	106	Samsung Electro-Mechanics Co., Ltd.	15
Ambit Microsystems Corporation	32	Leichu Enterprise Co., Ltd.	1	Siemens AG	1
Apple Computer, Inc.	6	Lucent Technologies	18	Sychip Inc.	1
Atheros Communications, Inc.	3	Marvell Semiconductor, Inc.	1	Toshiba Corporation	5
Belkin Components	8	Matsushita Electric Ind. Co	1	Texas Instrumets	1
Bromax Communications, Ltd.	1	Megahertz Corporaton	6	The Linksys Group, Inc.	93
Cabletron - Yago Systems, Inc.	2	Microsoft Corp.	4	Toshiba	3
CC&C Technologies, Inc.	1	MMC Technology, Inc.	1	U.S. ROBOTICS, INC.	2
CNet Technology Inc.	1	Module Department	2	USI	3
Conexant Systems, Inc.	2	Melco Inc.	14	Xircom	45
Card Access, Inc.	3	Microsoft Corp.	2	Z-COM, INC.	4
Cisco Systems, Inc.	146	National Datacomm Corp	1	0A:00:46	1
Compal Electronics, Inc.	1	NEC Corporation	7	18:18:00	1
	<b>Total</b> 613		<b>Total</b> 340		<b>Total</b> 352
					<b>Grand Total</b> 1305

# KNOWN ISSUES

- Potential problems identified prior to conference
  - No existing wiring / network infrastructure in the Albuquerque Convention Center (ACC) even one week prior to the conference
  - No data connection between the Hyatt Regency and the ACC
  - Not enough access points to cover all conference areas
- Resolutions to potential problems
  - ACC was able to leverage city contract to get professional wiring done in the week before the conference
  - DragonWave agreed to provide 100Mbps wireless point-to-point link on contingency for connectivity between buildings
  - Cisco loaned 12 additional access points for this conference

# KNOWN ISSUES (CONT)

- Membership website had issues Tuesday morning
  - The bug that caused the problem was corrected in the application code and service was restored at 1:00pm
- Dragon Wave point-to-point link was down Tuesday evening
  - Late IEEE decision to engage Dragon Wave impacted equipment delivery schedule from Canada through customs
  - Alternative equipment was delivered at great expense by Dragon Wave in an effort to provide connectivity until the intended equipment could be released from customs
  - Available access to the convention center roof was limited and forced the time to switch the equipment
  - Dragon Wave technicians encountered issues while replacing the temporary 23GHz licensed radio with 24GHz unlicensed radio which caused the extended outage Tuesday night

# D-R-A-G-O-N-W-A-V-E L-E-T-T-E-R

From: Tony McNeill <tmcneill@dragonwaveinc.com>  
To: tony@idealcorp.com  
Cc: Paul Lefebvre <paul@dragonwaveinc.com>  
Subject: IEEE 24GHz system

Tony,

After discussing with Allen Burgess the issue with the system swap-out from the 23GHz AirPair to 24GHz AirPair for the IEEE setup, here is the explanation as to why it took longer than expected.

During the action of installing the 24 GHz radio onto the antenna, the radio was not properly aligned onto the adapter and therefore when the radio was turned it started binding with the adapter. When pressure was applied to the radio in order to align the screws, it turned the feed horn inside the antenna. This was due to Allen trying to hurry and keep the outage to a minimum. Once the cause of the issue was realized, he removed the radio, re-oriented the feed horn, and then took his time in coupling the radio to the antenna to ensure a proper fit. In short, it was a finger problem. This is not a typical installation issue but rather one of use of excessive force onto the adapter when trying to hurry.

Cheers,  
Tony McNeill  
Director, Customer Support  
DragonWave Inc.  
613-599-9991



# KNOWN ISSUES (CONT)

- Attendee anti-virus protection still an issue, but I.D.E.A.L. developed detection and response system proved very effective
  - 49 anomalous events were detected which resulted in the removal of client computers from network
  - 46 events were actually virus or worm infestations
  - 2 events detected due to clients running peer-to-peer clients that allow the sharing of files to the Internet
  - 1 event detection was triggered by a software update
- Repeated issues with people unplugging network equipment
  - Active monitoring of network equipment reduced impact of outages

I·D·E·A·L



# UPCOMING CONFERENCES

- Harry Bims from AirFlow Networks will be donating their AirServer and up to 30 802.11b access points
  - Their technology is specifically designed for high density deployments
  - Should be available in time for the January joint-interim and all future shows
- Need to solicit member donations for additional enterprise quality 802.11a access points
  - Must support the SNMP management standard
- Inventory of equipment for future shows will be performed this evening
  - Need chairs of groups that own equipment to review and sign off on collected inventory prior to packing for shipment tomorrow

I·D·E·A·L

- Many future conferences will have split facilities
  - Performance measurements at this conference show average usage of link to be approximately 10Mbps with high usage bursts of 30Mbps to 50Mbps
  - Upcoming shows will require high speed connectivity at distances from a few hundred feet up to approximately 8 city blocks
  - Attaching a radio / antenna to fixed structures requires an OHSA certification and specific liability insurance that I.D.E.A.L. does not have at this time
  - Dragonwave equipment provides the right network and radio specifications to meet these requirements
    - They have the proper certifications and experience to perform installation and alignment
    - They are interested in providing installation services at future conferences

*Any questions?  
Any suggestions?*



Airflow Networks will be donating an AirServer and 30 access points.

**11.06 II Face to Face Contract Update - Rigsbee 5 05:15 PM**

5 Approaching final version of contract. Contract will be signed before March Plenary.

**11.07 II Interim meetings - Nikolich 5 05:16 PM**

802.1 Vancouver, January 12-16  
802.3 Vancouver, January 12-16, 802.3ah may be flexible due to ballot schedule  
10 802.11 Vancouver, January 12-16

**11.08 II 802 News Bulletin - Klerer 10 05:19 PM**

Not given.

**11.09 II 802 Task Force Update - Nikolich 5 05:19 PM**

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This item was delayed until 5:26pm.

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Geoff reported on the work of the task force. He reported on suggestions such as making every draft available for sale immediately upon issuance for sponsor ballot, having Dave Ringle attend an 802 task force meeting, deadlines for submission of names for awards, and standardization of titles for 802 documents. He reported that he has been appointed the "Title Czar" by the task force.

25

Roger Marks reported on a conversation he had with Jerry Walker on the topic of selling 802 drafts and the difficulties currently facing the program.

\*Sale of drafts is of value to IEEE-SA. Also, it supports the openness of the process by making this documentation available to all interested parties.

30

\*We observed a significant number of omissions and errors in the listing of drafts for sale. We found problems in, and inconsistencies between, the "IEEE 802 Unapproved Drafts" page:

<http://www.ili-info.com/ieee802drafts>  
and the Get IEEE 802 list of new standards and drafts:  
<http://standards.ieee.org/getieee802/new.html>

35

On the "IEEE 802 Unapproved Drafts" page, document numbers, versions, titles, abstracts, and keywords are incorrect and, in some cases, garbled. At least one listing is of a draft whose PAR was withdrawn in September. In at least one case, we can't tell which draft is being sold because the document number and test descriptions point to two different possible drafts. Other drafts are out of date.

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\*We discussed suggestions for improving the "IEEE 802 Unapproved Drafts" page:

-Add page count; this is more meaningful than the included PDF file size in making purchase decisions; it would also be consistent with IEEE Store practice

45

-Remove the "IEEE 802 Standards Status Report" link, since this points to the IEEE-SA project database, with information that is confusing even for standards developers and includes many obsolete projects.

-Since the purpose of the "Recent Downloads" button is unclear, its prominence on the page is questionable.

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\*We discussed suggestions for improving the upload and posting of drafts

-Noting that even drafts that entered Sponsor Ballot weeks ago are not for sale, we agreed with discussion at previous 802 EC meetings that all drafts submitted for Sponsor Ballot ought to be immediately submitted for sale without the involvement of the WG.

55

-An upload facility similar to the IEEE-SA Balloting Center Uploads page  
<[http://standards.ieee.org/eprocess/upload\\_balloting\\_file](http://standards.ieee.org/eprocess/upload_balloting_file)>  
should be made available for a WG to easily upload WG drafts (prior to Sponsor Ballot) in a consistent process. It seems as if the Balloting Center Uploads page could be used as is, with the comment field used to indicate that the draft is for sale, not for ballot.

-When new drafts enter the catalog, an acknowledgement of availability should be posted to the WG contact, with a link to the product listing for review and an email address to send any corrections.

-It's not clear how best to remind WGs to upload new drafts. Jerry suggested monthly reminders. Roger was not enthusiastic. Roger believes that, if the process is easy to use and fully acknowledged, WGs will learn to use them regularly.

-Jerry wants to ensure that uploaded drafts are unsecured. IEEE staff need to edit something in the PDF (presumably the description fields and security options).

-Once a draft is approved by the SASB, it should quickly be relabeled as an Approved Draft instead of an Unapproved Draft. This should be handled entirely by staff. It's not clear to Roger why the ILI catalog should be limited to Unapproved; this requires an extra level of management to move drafts to IEEE Store once approved.

\*Suggestions for improving the value of IEEE Standards Online subscription

-Rather than remove obsolete drafts, it might be better to retain them to maintain an archive; this might encourage some people to subscribe.

Mat asked about making licenses for additional editing tools available to editors as needed, such as SDL editors.

**11.10 II Some in pool not receiving Sponsor Ballot invitations - Grow 5 05:20 PM**

Many in 802.3 have complained that they have not received ballot invitations, including many that have been verified to be in the invitation pool. Many others have had similar problems.

Angela Ortiz asked that documentation be provided so that they can investigate the situation. She also listed several issues that may cause invitations to not be delivered, including spam filters, bulk email filters, and other items.

**11.11 DT Disclosure of member information - Kerry 5 05:31 PM**

Stuart indicated that a member of 802.11 gave a presentation requesting that member information be made available in the minutes, including full contact details, to facilitate working between sessions. Stuart asks that a position of the EC be stated on this topic. Stuart recommended that the position be that this information is not to be made available.

Some expressed that this would be possibly run afoul of privacy requirements. Particular reservations about the use of this information for commercial (spam) purposes were expressed.

Paul asked that Stuart draft a change to the chair's guidelines and circulate it on the reflector.

**11.12 II 802.11 to China regarding WAPI - Kerry 5 05:40 PM**

Stuart mentioned that 802.11 had approved a letter to be sent to China on the WAPI topic.

**11.13 II 802.19 update - Siep 5 05:41 PM**



# IEEE 802.16 Working Group on Broadband Wireless Access

<http://WirelessMAN.org>

Dr. Roger B Marks  
 NIST  
 325 Broadway, MC 813.00  
 Boulder, CO 80305 USA  
 Tel: +1 303 497 3037  
<mailto:marks@nist.gov>  
 13 November 2003

To: Peter Wery, Chair, ITU-T SG 15

The IEEE 802.16 Working Group on Broadband Wireless Access\* acknowledges the two liaison statements of 5 November 2003 from SG 15, namely COM 15–LS 7–E (filed as our [IEEE L802.16-03/12](#)) and COM 15–LS 47–E (filed as our [IEEE L802.16-03/13](#)). We welcome this opportunity for a dialog with SG 15.

The IEEE 802.16 Working Group has developed IEEE Standard 802.16-2001 (“Air Interface for Fixed Broadband Wireless Access Systems”) and several amendments (IEEE 802.16a-2003 and IEEE 802.16c-2002) as well as related coexistence and conformance standards. The IEEE 802.16 standard describes a wireless broadband access system for carrier-class last-mile access to public networks, both ATM and IP, with full QoS support. Depending on the frequency band and implementation details, an IEEE 802.16 access system could support a wide range of applications, from commercial services to residential applications in both urban and rural areas. The Working Group is actively continuing to refine, expand, and enhance the standards, with current efforts focused in three areas: (1) revising and updating the standard for fixed access; (2) enhancing the standard to add support for mobile terminals in the P802.16e project; (3) specifying additional conformance standards.

Regarding COM 15–LS 47–E, we value the information provided by Question 1/15 regarding your activities as Lead Study Group on Access Network Transport (ANT). In reviewing the ANT Standardisation Plan [TD 30 (PLEN), “Access Network Transport Standards Overview (v8)”], we see that IEEE 802.16 does fit quite well into this framework. Its use is quite similar to the discussion in Scenario 5, particular the 5b attachment on “The use of Radio in the Access Network,” although we support services of a more general nature (ATM, IP, etc.) than shown there. We appreciate that you have added IEEE 802.16 to the ANT Standardisation Plan. We suggest the following modification to the entry:

Stds Body	Number	Title	Scen. Ref.	Classification				Medium				Interface				Pub Date/ Prop. Rev.	
				G	O	A	Q	F	C	P	A	J	H	B	W		
IEEE	802.16	Air Interface for Fixed Broadband Wireless Access Systems	5b,5a	X								X					IEEE 802.16-2001 IEEE 802.16a-2003 IEEE 802.16c-2002 Prop. Rev: 2004

Also, we suggest the deletion of IEEE 802.14 from the table, as that project was withdrawn before completion of the work.

We also appreciate that you have added IEEE 802.16 to the ANT Work Plan (TD 31 (PLEN), “Access Network Transport Standards Work Plan, Issue 7”).

Regarding COM 15–LS 7–E, we have taken note of the work of Q.2/15 regarding the management of Passive Optical Networks. Since these typically operate in point-to-multipoint configuration, as do IEEE 802.16 networks, we suppose that some management features may be common. We would like to pursue this question further. We recognize that SG 15 is not currently actively engaged in work regarding wireless networks but do perceive that wireless access networks like those based IEEE 802.16 might have significant synergy with existing SG 15 work. In particular, we believe that OAM issues such as management information, configuration control, performance monitoring, and maintenance could beneficially be advanced by SG 15.

We would like to pursue this issue further. At this time, we are not able to identify a suitable liaison officer to assist in this activity. However, we will seek to develop additional interest within the Working Group and hope to provide further information.

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\* The views expressed in this communication are those of the IEEE 802.16 Working Group and do not necessarily represent the views of the IEEE 802 LAN/MAN Standards Committee, the IEEE Standards Association, or the IEEE.

2003-11-13

IEEE L802.16-03/15D3

Sincerely,

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

cc: Paul Nikolich, Chair, IEEE 802 LAN/MAN Standards Committee  
José Costa, IEEE 802.16 Liaison Officer to ITU-R  
IEEE 802.18, ITU-R SG 8, ITU-R SG 9, ITU-R JRG 8A-9B, ITU-D Q.20/2, ITU-T SG 4





**IEEE 802.16 Working Group on Broadband Wireless Access**<http://WirelessMAN.org>

Dr. Roger B Marks  
NIST  
325 Broadway, MC 813.00  
Boulder, CO 80305 USA  
Tel: +1 303 497 3037  
<mailto:marks@nist.gov>  
13 November 2003

To: Mr. Valery Timofeev  
Director, International Telecommunication Union, Radiocommunication Bureau  
CH-1211 Geneva 20, Switzerland  
<mailto:valery.timofeev@itu.int>

The IEEE 802.16 Working Group (WG) on Broadband Wireless Access\* acknowledges receipt of the Document (numbered ITU-R 8A/15, 8A-9B/3, 9B/6 and [IEEE L802.16-03/11](#)) of 4 November 2003 containing the notes of the IEEE/ITU Conference Call of 28 October 2003. The WG welcomes this opportunity for a dialog with ITU-R, particularly since IEEE has recently become an ITU-R Sector Member as an international organization.

The IEEE 802.16 WG has developed IEEE Standard 802.16-2001 (“Air Interface for Fixed Broadband Wireless Access Systems”) and several amendments (IEEE 802.16a-2003 and IEEE 802.16c-2002). Additionally the WG has prepared the related conformance standards and recommended practice on coexistence (IEEE 802.16.2-2001, with a revision to be approved in the near future). The IEEE 802.16 standard describes a wireless broadband access system for carrier-class last-mile access to public networks, both ATM and IP, with full QoS support. Depending on the frequency band and implementation details, an IEEE 802.16 access system could support a wide range of applications, from commercial services to residential applications in both urban and rural areas. The WG is actively continuing to refine, expand, and enhance the standards, with current efforts focused in three areas: (1) revising and updating the standard for fixed access; (2) enhancing the standard to add support for mobile terminals in the P802.16e project; (3) specifying additional conformance standards.

The IEEE 802.16 WG is truly international in character and scope. For example, at our 9-14 November Session #28 we had participants from all three ITU regions [and agreed to hold our May 2004 Session #31 in (Korea)(China)]. IEEE 802.16 also maintains cooperative relationships with regional standards organizations such as ETSI.

At the November meeting the WG discussed liaison activities with ITU. In that regard we reappointed Mr. José Costa as our liaison to ITU-R. Within IEEE 802, regulatory issues are handled by a specialized group, the IEEE 802.18 Radio Regulatory Technical Advisory Group. We have not appointed a liaison to ITU-T SG 15.

The WG discussed the proposed action item from the conference call that “IEEE 802.16 will propose what the expected ITU-R Recommendation should cover.” The 802.16 WG agreed that developing an ITU-R Recommendation is a worthwhile goal. It was felt that goal could best be achieved by providing a summary of IEEE Standard 802.16 with a reference to the full standard. The WG appreciated that the use of an external reference may be considered an inconvenience by some. Using the reference method would serve to

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2003-11-13

IEEE L802.16-03/16D3

significantly reduce the maintenance burden for both organizations and ensure that the latest changes are available to the ITU-R membership. Additionally it would greatly reduce the cost to the ITU-R of producing the standard. The current in-process revision of this standard is nearly 800 pages. IEEE 802 policy is that standards are free beginning six months after their release, and all three of the IEEE 802.16 air interface standards are currently downloadable from *Get IEEE 802™* web site <<http://standards.ieee.org/getieee802>>. A summary of the current IEEE Standard 802.16 is provided in the Appendix.

The WG understands that developing such a standard may cause consequential changes to other ITU-R Recommendations and handbooks. It was felt that the WG is not competent to determine what those consequential changes could be. The WG would be pleased to help in developing those changes once the relevant Recommendations and handbooks are identified.

The WG also agreed that the IEEE Standard 802.16 is directly relevant to ITU-D Question 20/2. This standard was cited numerous times in the October 2003 ITU Internet Report “The Birth of Broadband”. We believe that the summary in the Appendix below would be suitable material for insertion into ITU-D Document 2/121, “Draft Report on Question 20/2: Broadband Access Technologies.” IEEE 802.16 looks forward to active participation in development of the response to ITU-D on Q.20/2 for the preparation of a roadmap for the choices of wireless broadband access solutions for rural and underserved areas.

The IEEE 802.16 Working Group appreciates ITU-R’s interest in our work and activities. We are happy to assist you or work with you on technical issues and look forward to a productive relationship.

Sincerely,

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

cc: Paul Nikolich, Chair, IEEE 802 LAN/MAN Standards Committee  
Kevin Hughes, ITU-BR SG Dept. Head  
Fabio Leite, ITU-BR SG Dept. Counsellor  
José Costa, IEEE 802.16 Liaison Officer to ITU-R  
IEEE 802.18, ITU-T SG 15, ITU-D Q.20/2

## Appendix

### ***Broadband Wireless Access Systems***

A unique class of wireless systems supporting broadband access has been defined and internationally standardized by the IEEE 802.16 Working Group on Broadband Wireless Access. The group's approved and published standards include IEEE Standard 802.16-2001 ("Air Interface for Fixed Broadband Wireless Access Systems") and several amendments (IEEE 802.16a-2003 and IEEE 802.16c-2002) as well as related conformance standards and a recommended practice on coexistence (IEEE 802.16.2-2001, with a revision expected to be approved soon).

The IEEE 802.16 technology is known as "WirelessMAN" for Wireless Metropolitan Area Networks. The word "metropolitan" refers not to the application but to the scale. The design is primarily oriented toward outdoor applications. The architecture is point-to-multipoint, with a base station serving subscribers in a cell that can range up to about 50 km. As of late 2003, the standard supports terminals that are fixed or nomadic, so it is ideal for providing access to buildings, such as businesses, homes, Internet cafes, telephone shops (telecenters), etc. Product implementations are in development.

As of late 2003, an amendment project (P802.16e) is developing enhancements to support mobile as well as fixed terminals; completion is expected in the autumn of 2004. At the current time, the standard is not optimized to provide service directly to a human user. Instead, the purpose is to provide broadband access to a site, such as a building. Distribution of the content throughout the site would normally be by conventional means, such as IEEE 802.11 WLAN hot spot, IEEE 802.3 Ethernet networks, T1/E1, etc., depending on the required service.

The key feature of the IEEE 802.16 air interface is the medium-access control layer (MAC), which specifies a mechanism for controlling access to the airwaves. The IEEE 802.16 MAC is based on demand-assigned multiple access in which transmissions are scheduled according to priority and availability. This design is driven by the need to support carrier-class last-mile access to public networks, both IP and ATM, with full QoS support. Depending on the frequency band and implementation details, an IEEE 802.16 access system could support a wide range of applications, from commercial services to residential applications in both urban and rural areas. The system could easily support both generic Internet-type data and real-time data, including two-way applications such as voice, videoconferencing, or interactive games.

The standard includes support for a variety of worldwide frequency allocations in either licensed or license-exempt bands. At higher frequencies (10-66 GHz), supported data rates range over 100 Mbit/s per 25 MHz or 28 MHz channel, with many channels available under some administrations. At the lower frequencies (2-11 GHz), typical data rates range up to 70 Mbit/s per channel.

The IEEE 802.16 standards are developed under the IEEE 802 LAN/MAN Standards Committee, an international open standards developing organization with worldwide scope and participants from many countries. It operates in accordance with the "Code of Good Practice for the Preparation, Adoption and Application of Standards" of the World Trade Organization. In October 2003, IEEE has become an ITU-R Sector Member as an international organization.

**Moved: to modify the agenda to add item 11.16 to address operating with the policy under consideration for changing the P&P with respect to Roll Call Votes.**

**Moved: Takefman/Jeffree**

5 **Passes: 9/0/3**

**11.16 MI**

**Moved: that the LMSC subgroups operate under the proposed P&P change on Roll Call Votes until changes covering Roll Call Votes are formally incorporated into the IEEE 802 LMSC P&P or until it is rejected.**

10 **Moved: Takefman/Quackenbush**

**Passes: 7/5/1**

**ADJOURN SEC MEETING**

**- Nikolich**

**06:00 PM**

15 The meeting was adjourned at 6:00pm

Respectfully submitted,  
Bob O'Hara  
Recording Secretary