

IEEE 802.16 Working Group on Broadband Wireless Access

<http://WirelessMAN.org>



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<mailto:r.b.marks@ieee.org>
24 October 2001

Dear IEEE-SA RevCom:

Enclosed is an application for approval of P802.16 (“IEEE Standard for Local and Metropolitan Area Networks – Part 16: Air Interface for Fixed Broadband Wireless Access Systems”).

Please note that the draft is currently undergoing its final confirmation ballot, to close on 28 October 2001.

Attached to this letter, please find the following:

- Page 2-5: IEEE-SA Standards Board Form for Submittal of Proposed Standards
- Page 6-13: Summary of initial ballot (29 Approve, 4 Disapprove, 3 Abstain)
- Page 14-20: Summary of first recirculation ballot (32 Approve, 1 Disapprove, 3 Abstain)
- Page 21-25: Unresolved negatives & responses (5 comments from the single Disapprove voter)
- Page 26-28: PAR
- Page 29: PAR Approval Letter
- Page 30-32: Coordination comments & responses
- Page 33: Copyright permission letter from Cable Television Laboratories, Inc.
- Page 34-37: **(blank)**
- Page 38: Signature Page
- Page 39-46: Appendix: Final Ballot Summary (following Confirmation Ballot)

Should you be interested in the ballot packages, see <http://ieee802.org/16/docs/01/80216-01_48.pdf> for the first recirculation and <http://ieee802.org/16/docs/01/80216-01_52.pdf> for the second.

The draft itself (P802.16/D5-2001) is **included** separately, in both PDF and FrameMaker formats.

Please feel free to contact me with any questions or concerns.

Sincerely,

A handwritten signature in blue ink that reads "Roger B. Marks".

Roger B. Marks

IEEE-SA STANDARDS BOARD
FORM FOR SUBMITTAL OF PROPOSED STANDARDS

1. PROJECT NUMBER:

2.

DATE:

3. TITLE:

4. SPONSOR:

(Full name of society/committee)

5. BALLOTING COMMITTEE:

(Include written delegation of balloting authority.)

6. NAME OF WORKING GROUP:

7. NAME AND ADDRESS OF SUBMITTER

Name:

Company:

Street:

City:

State/Prov.:

ZIP/Postal Code:

Country:

E-Mail:

Telephone:

FAX:

8. DESCRIPTION OF DOCUMENT (Check one from each column.)

New	Standard	Full Use (5-year life cycle)
Revision	Recommended Practice	Trial Use (2-year life cycle)
Reaffirmation	Guide	
Withdrawal	Amendment/Corrigenda to an existing standard	

(Indicate Number and year in box on the right)

8A. REAFFIRMATION In the opinion of the balloting group, this standard continues to be useful in its **ONLY:** current form and contains no significant obsolete or erroneous information.

Yes

No

9. BALLOT INFORMATION

List the interest categories of eligible balloters only. Refer to the IEEE-SA Standards Board Operations Manual and the Working Guide for Submittal of Proposed Standards for the rules of balloting committee classification.

Interest Category	No.	Interest Category	No.	Interest Category	No.	Interest Category	No.
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SUMMARY OF ELIGIBLE BALLOTS

INITIAL BALLOT

RECIRCULATION BALLOT(if applicable)

Draft Date Closed:

Draft Date Closed:

Number Percentage

Number Percentage

Ballots Mailed 100%

100%

Ballots Returned

Affirmatives

Negatives N/A

N/A

Abstentions

2nd Recirc: Draft D5
Open: 2001-10-19
Close: 2001-10-28

Reasons for abstentions: Lack of Time Lack of expertise Other

10. RESOLUTION OF COMMENTS AND NEGATIVE VOTES

All balloting group members, observers, and coordinating groups have been advised of substantive changes made with respect to the balloted draft standard (in response to comments, in resolving negative votes, or for other reasons) and have received copies of all unresolved negative votes with reasons from the negative voter and the rebuttal, and have been advised that they have an opportunity to change their votes.

- | | | | |
|---|-----|----|------------------------|
| A. Have unresolved negative votes been circulated?
<i>Include unresolved negative comments and rebuttal.</i> | Yes | No | No unresolved votes |
| B. Have substantive document changes been circulated? | Yes | No | No substantive changes |

11. COORDINATION ACTIVITY (Not required for reaffirmation)

Using the abbreviations listed below, indicate the response received from each committee/organization required for coordination and include a copy of the response. Include documentation authorizing coordination by common membership, if applicable.

- Key:**
R = Received
R/C = Received with comment
NR = Not received

<u>Committee/Organization</u>	<u>Response</u>		
SCC10 (IEEE Dictionary)	R	R/C	NR
SCC14 (Quantities, Units, & Letter Symbols)	R	R/C	NR
IEEE Standards Editorial Staff	R	R/C	NR
	R	R/C	NR
	R	R/C	NR
	R	R/C	NR
	R	R/C	NR

	R	R/C	NR
	R	R/C	NR
	R	R/C	NR

Indicate below any unresolved problems from coordination activities.

12. PATENT/COPYRIGHT and REGISTRATION ISSUES

*Note: This answer is based on claims received, not on personal knowledge.

- A. Is there any patented material in the proposed standard?* Yes No Originally indicated on the PAR, but not included in the final document
If yes, include letter(s) of assurance from the patent holder.
- B. Is there any copyrighted material in the proposed standard? Yes No
If yes, include copyright release(s).
- C. Is the registration of objects and/or numbers a provision of the proposed standard? If yes, include a proposal for review by the IEEE-SA Registration Authority (RAC). Yes No Already approved by RAC

13. INTERNATIONAL STANDARDS ACTIVITIES (Not required for reaffirmation)

Is this document intended to be the basis of or included in an international standard? Yes (Explain in box below)
No

14. UNIT OF MEASUREMENT (check one)

International System of Units (SI) - Metric Inch/Pound Both Not measurement sensitive
Other

15. Source Materials Submitted to IEEE Standards Department

- A. Have electronic versions of the source documents (text and figures) been provided? Yes No Format
- B. Will a diskette or other online material be required to accompany the published standard? Yes No

16. Submission checklist (X = included in submittal package N/A = Not applicable)

	Submission Package Item	List URL if online
X N/A	This submittal form	
X N/A	Ballot summary forms(s) (1 per ballot cycle)	
X N/A	Copies of unresolved negatives & rebuttals	
X N/A	PAR and PAR approval letter	

X	N/A	Coordination comments & responses	
X	N/A	PDF of final balloted draft #	
X	N/A	Permissions & copyright releases	
X	N/A	Delegation of balloting authority	

Ballot Summary

P802.16

Closing date: 2001-09-09

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

43 eligible people in this ballot group.

29 affirmative votes
 4 negative votes
 3 abstention votes

=====

36 votes received = 83% returned
 8% abstention

2. The 75% affirmation requirement is being met.

29 affirmative votes
 4 negative votes

=====

33 votes = 87% affirmative

Ballot Details

Coordination Responses Only

IEEE/Coord Number	Name	Role	Phone / E-mail	Coordination Ballot Received	Coordination Comment(s) Received
00601054	Bruce Barrow	SCC14	301-493-4374 b.barrow@ieee.org	-	-
00001000	Yvette Ho Sang	SCC10	732-562-3814 y.hosang@ieee.org	-	yes
00001001	Yvette Ho Sang	Editorial	732-562-3814 y.hosang@ieee.org	-	yes

Balloters

Number	Name	Phone / E-mail	Vote	T	E	Graphics	Status Notes	I
01933571	Larry Arnett Mitsubishi Electric USA 1050 E Arques Ave Sunnyvale, CA 94085-4601 USA	408 774-3179 larnett@ieee.org	Approve, no comments (Y)	-	-	-		Producer
40300357	TAMER BESER STM inc. yazgan sokak 25 / 11 cebeci ankara, tr 06590 turkey	90 312 3632023 tbeser@ssm.gov.tr	Approve, no comments (Y)	-	-	-		Governm

41244616	Tracy Black Corning Gilbert Inc. 4201 North 47th Avenue Phoenix, AZ 85031 USA	623-845-5613x437 tblack@gilbertconnectors.com	Abstain for lack of time (A1)	-	-	-		Producer
05891064	Wesley Brodsky Raytheon 1001 Boston Post Road Marlborough, MA 01753 USA	5084901616 wesley_g_brodsky@res.raytheon.com	Approve, comments (Y1)	-	4	-		Producer
05572953	James Carlo Texas Instruments 9208 Heatherdale Drive Dallas, TX 75243 USA	214-693-1776 j.carlo@ieee.org	Approve, no comments (Y)	-	-	-		General I
06503270	Jose Costa Nortel Networks 14 Ridgefield Crescent Nepean, Ontario K2H 6R9 Canada	+1 613 763-7574 costa@nortelnetworks.com	Abstain, other (A3)	2	2	-		Producer
05046479	GURU DUTT DHINGRA DHINGRA & ASSOCIATES SAPPHIRE PARK-1, Opp, K, J. Mehta High School NASIK - ROAD - 422101, Maharashtra 422101 INDIA	+91 253 561836 dhingra@bom6.vsnl.in	-	-	-	-		User
41334099	Jagadish Kumar Dasari Sasken Communication Technologies Limited (Previously Silicon Automation Systems Limited) #4, Corporation Division #67, HAL II Stage, Jeevan Bheema Nagar Bangalore,	+91-80-5276100 Extn: 4039 djk@sasi.com	-	-	-	-		Producer

	Karnataka 560 075 INDIA							
40199311	Thomas Dineen Dineen Consulting PO Box 361801 Milpitas, CA 95036 USA	(408) 956-0539 tdineen@ix.netcom.com	Approve, no comments (Y)	-	-	-		Producer
41311588	Vern Dubendorf Exodus Communications, Inc. 10 New England Executive Park Burlington, MA 01803 USA	781.203.1367 tdubendorf@ieee.org	Approve, no comments (Y)	-	-	-		User
02623320	Peter Ecclesine Cisco Systems 2799 Reed Ave Livermore, CA 94550-9652 USA	+1.408.527.0815 petere@ieee.org	Disapprove, comments (N)	6	-	-		Producer
03533247	Keng Fong Ralink Technology 400 E. Remington Dr. #B213 Sunnyvale, CA 94087 USA	408-431-8332 fong@ieee.org	-	-	-	-		Producer
40306847	Simon Harrison Red-M (Communications) Ltd Wexham Springs, Framewood Road Wexham, Slough SL3 6PJ UK	+441753661421 simon.harrison@red-m.com	Approve, no comments (Y)	-	-	-		General I
01550144	Vic Hayes Agere Systems 1-10 Zadelstede Nieuwegein, Utrecht NL-3431 JZ Netherlands	+31 30 609 7528 vichayes@agere.com	Abstain for lack of time (A1)	-	-	-		User
01556620	Hamadi Jamali Canon R&D Center Americas 3300 North First, Third Floor San Jose, CA 95134 USA	(408)468-2814 jamali@cra.canon.com	Approve, no comments (Y)	-	-	-		General I
40357068	Stuart Kerry	4084747356	Approve,	-	-	-		Producer

	Philips Semiconductors, Inc. 1109 McKay Drive, M/S 48-SJ San Jose, CA 95131 USA	stuart@ok-brit.com	no comments (Y)					
41379755	Jay Klein Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-404-6544 jay@ensemblecom.com	Approve, comments (Y1)	-	-	2		Producer
07409634	Timothy Lee Boeing Satellite Systems 29135 Whites Point Drive Rancho Palos Verdes, CA 90275 USA	310 662-9114 tt.lee@ieee.org	Approve, no comments (Y)	-	-	-		Producer
06754667	Arthur Light ITT Industries AES 2560 Huntington Avenue Alexandria, VA 22303-1404 USA	703-329-3879 art.light@itt.com	Disapprove, comments (N)	1	-	-		Governm
01952282	Jenshan Lin Lucent Technologies 600 Mountain Ave Murray Hill, NJ 07974 US	908-582-5182 jenshan@ieee.org	Disapprove, comments (N)	1	-	-		Producer
40135086	David Linton Queens University Ashby Building, 125 Stranmillis Road Belfast, Northern Ireland BT9 5AH United Kingdom	+44 28 90 27 42 65 d.linton@ee.qub.ac.uk	-	-	-	-		Governm
00788638	Ahmad MahinFallah Phoenix International 1441 44th St. NW Fargo, North Dakota	701-277-6322 ahmadfallah@ieee.org	Approve, no comments (Y)	-	-	-		General I

	58102 USA							
06760854	James Scott Marin 131 Skyline Drive Murphy, Texas 75095 USA	972-516-5158 smarin@ix.netcom.com	Approve, no comments (Y)	1	-	-		Governm
08122103	Roger Marks NIST 325 Broadway, MC 813.00 Boulder, CO 80305 USA	+1 303 497 3037 r.b.marks@ieee.org	Approve, comments (Y1)	1	-	1		Governm
08940611	Peter Martini University of Bonn, Dept. of CS IV Roemerstr. 164 Bonn, none 53117 Germany	+49 228 73 4334 martini@cs.uni-bonn.de	Approve, no comments (Y)	-	-	-		Governm
02112266	George May Efficient Networks 5314 Umbrella Pine Ct. Arlington, TX 76018 USA	972-759-2942 gcm3629@hotmail.com	Approve, no comments (Y)	-	-	-		Governm
41340769	Roderick McMullin DragonWave Inc 600-411 Legget Dr. Kanata, Ontario K2K 3C9 Canada	613-599-9991 x238 rmcmullin@dragonwaveinc.com	Approve, no comments (Y)	-	-	-		Producer
01210376	Steve Methley Plextek Ltd London Road Great Chesterford, Essex CB10 2EF UK	+44 1799 533322 sgm@plextek.com	Approve, no comments (Y)	-	-	-		User
41321733	Vlad Mitlin 3Com 10636 Scripps Summit Court San Diego, CA 92131 USA	858 6748541 vlad_mitlin@3com.com	-	-	-	-		General I
07022429	Roger Pandanda MCS Corporation Box 20451 Stanford, CA 94309	650-618-1786 rogerp@ieee.org	Approve, no comments (Y)	-	-	-		General I

	USA							
40300305	Ken Peirce Malibu Networks 1035 Suncast Lane El Dorado Hills, CA 95762 USA	916-941-8814 ken@malibunetworks.com	Approve, no comments (Y)	-	-	-		Producer
41318678	Stephan Reis Nortel Networks 880 Technology Park Drive Billerica, MA 01821 US	978 288 0925 sreis@nortelnetworks.com	Approve, no comments (Y)	-	-	-		Producer
40266494	Eugene Robinson E.A. Robinson Consulting 1200 Lake Point Circle McKinney, Texas 75070 U.S.A.	972 529-6395 rob1200@aol.com	-	-	-	-		Governm
40247562	Jaideep Roy 43 Reading Rd., Apt. N Edison, NJ 08817 USA	732-635-9449 jroyjroy@yahoo.com	Approve, no comments (Y)	-	-	-		General I
41277568	Hiroyasu Shimizu USC DigiArk 5-6-27 Kitashinagawa Shinagawa-ku, Tokyo 141-0001 JAPAN	81337769523 xHiroyasu.Shimizu@jp.sony.com	Approve, no comments (Y)	-	-	-		General I
01637487	Chet Shirali Vyyo Inc. 20400 Stevens Creek Boulevard, Suite 800 Cupertino, CA 95014 usa	408-523-4820 cshirali@vyyo.com	Disapprove, comments (N)	5	-	-		Producer
40208774	Fredrik Tufvesson Fiberless Society Box 714 Lund, Skane SE-22007 Sweden	+46-46 38 65 97 fredrik.tufvesson@fiberless-society.com	Approve, no comments (Y)	-	-	-		Producer
03239332	JOAN VIAPLANA RETEVISION JOSEP PLÀ, 15 ARENYS DE	+34670221398 jviaplana@acm.org	Approve, no comments (Y)	-	-	-		General I

	MUNT, BARCELONA 08358 SPAIN							
41387608	Stanley S. Wang Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-526-7265 stanley@ensemblecom.com	Approve, comments (Y1)	10	24	-		Producer
07284292	Don Wright Lexmark 740 New Circle Rd, C14/082-3 Lexington, Ky 40550 USA	859-825-4808 don@lexmark.com	Approve, no comments (Y)	-	-	-		General I
05907266	Oren Yuen 1504 Steinhart Ave Redondo Beach, CA 90278 USA	310-372-9334 oren.yuen@ieee.org	Approve, no comments (Y)	-	-	-		User
08022824	Jim Zerbe evolutioncom 17800 North Perimeter Road Suite 200 Scottsdale, AZ 85255 USA	480.538.3700 jim.zerbe@evolutioncom.com	-	-	-	-		Governm
01378470	walt roehr	703-435-1787 w.c.roehr@ieee.org	Approve, no comments (Y)	-	-	-		-
Comment Totals *				27	30	3		

(*) 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.

Summary of Eligible Voters by Interest Category

Interest Category	Affirmative(s)	Negative(s)	Abstention(s)	Not Returned	Total
User	3	0	1	1	5
Producer	11	3	2	2	18
General Interest	9	0	0	1	10
Government/Academic/Consultant	5	1	0	3	9
Voting Tally	28	4	3	7	42

Abstention details:	2 for lack of time (A1)	0 for lack of expertise (A2)	1 for other reasons (A3)
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Ballot Summary

P802.16/D4 Recirculation
Closing date: 2001-10-04

This is a recirculation ballot. The report collates the results from the following groups: 0000086 0000166.

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

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43 eligible people in this ballot group.

32 affirmative votes
 1 negative votes
 3 abstention votes
=====
36 votes received = 83% returned
                   8% abstention

```

2. The 75% affirmation requirement is being met.

```

32 affirmative votes
 1 negative votes
=====
33 votes = 96% affirmative

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Ballot Details

Coordination Responses Only

IEEE/Coord Number	Name	Role	Phone / E-mail	Coordination Ballot Received	Coordination Comment(s) Received
00601054	Bruce Barrow	SCC14	301-493-4374 b.barrow@ieee.org	-	-
00001000	Yvette Ho Sang	SCC10	732-562-3814 y.hosang@ieee.org	-	yes
00001001	Yvette Ho Sang	Editorial	732-562-3814 y.hosang@ieee.org	-	yes

Balloters

Number	Name	Phone / E-mail	Vote	T	E	Graphics	Status Notes	Interest Category
01933571	Larry Arnett Mitsubishi Electric USA 1050 E Arques Ave Sunnyvale, CA 94085-4601 USA	408 774-3179 larnett@ieee.org	Approve, no comments (Y)	-	-	-		Producer
40300357	TAMER BESER STM inc. yazgan sokak 25 / 11 cebeci ankara, tr 06590 turkey	90 312 3632023 tbaser@ssm.gov.tr	Approve, no comments (Y)	-	-	-		Government/Academic/Consu
41244616	Tracy Black Corning Gilbert Inc. 4201 North 47th Avenue Phoenix, AZ 85031 USA	623-845-5613x437 tblack@gilbertconnectors.com	Abstain for lack of time (A1)	-	-	-		Producer
05891064	Wesley Brodsky	5084901616	Approve,	-	4	-		Producer

	Raytheon 1001 Boston Post Road Marlborough, MA 01753 USA	wesley_g_brodsky@res.raytheon.com	comments (Y1)					
05572953	James Carlo Texas Instruments 9208 Heatherdale Drive Dallas, TX 75243 USA	214-693-1776 j.carlo@ieee.org	Approve, no comments (Y)	-	-	-		General Interest
06503270	Jose Costa Nortel Networks 14 Ridgefield Crescent Nepean, Ontario K2H 6R9 Canada	+1 613 763-7574 costa@nortelnetworks.com	Abstain, other (A3)	2	2	-		Producer
05046479	GURU DUTT DHINGRA DHINGRA & ASSOCIATES SAPPHIRE PARK-1, Opp, K, J. Mehta High School NASIK - ROAD - 422101, Maharashtra 422101 INDIA	+91 253 561836 dhingra@bom6.vsnl.in	-	-	-	-		User
41334099	Jagadish Kumar Dasari Sasken Communication Technologies Limited (Previously Silicon Automation Systems Limited) #4, Corporation Division #67, HAL II Stage, Jeevan Bheema Nagar Bangalore, Karnataka 560 075 INDIA	+91-80-5276100 Extn: 4039 djk@sasi.com	-	-	-	-		Producer
40199311	Thomas Dineen Dineen Consulting PO Box 361801 Milpitas, CA 95036 USA	(408) 956-0539 tdineen@ix.netcom.com	Approve, no comments (Y)*	-	-	-		Producer
41311588	Vern Dubendorf Exodus Communications, Inc. 10 New England Executive Park Burlington, MA 01803 USA	781.203.1367 tdubendorf@ieee.org	Approve, no comments (Y)*	-	-	-		User

02623320	Peter Ecclesine Cisco Systems 2799 Reed Ave Livermore, CA 94550-9652 USA	+1.408.527.0815 petere@ieee.org	Approve, no comments (Y)*	6	-	-		Producer
03533247	Keng Fong Ralink Technology 400 E. Remington Dr. #B213 Sunnyvale, CA 94087 USA	408-431-8332 fong@ieee.org	-	-	-	-		Producer
40306847	Simon Harrison Red-M (Communications) Ltd Wexham Springs, Framewood Road Wexham, Slough SL3 6PJ UK	+441753661421 simon.harrison@red-m.com	Approve, no comments (Y)	-	-	-		General Interest
01550144	Vic Hayes Agere Systems 1-10 Zadelstede Nieuwegein, Utrecht NL-3431 JZ Netherlands	+31 30 609 7528 vichayes@agere.com	Abstain for lack of time (A1)	-	-	-		User
01556620	Hamadi Jamali Canon R&D Center Americas 3300 North First, Third Floor San Jose, CA 95134 USA	(408)468-2814 jamali@cra.canon.com	Approve, no comments (Y)	-	-	-		General Interest
40357068	Stuart Kerry Philips Semiconductors, Inc. 1109 McKay Drive, M/S 48-SJ San Jose, CA 95131 USA	4084747356 stuart@ok-brit.com	Approve, no comments (Y)*	-	-	-		Producer
41379755	Jay Klein Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-404-6544 jay@ensemblecom.com	Approve, comments (Y1)	-	-	2		Producer
07409634	Timothy Lee Boeing Satellite Systems 29135 Whites Point Drive Rancho Palos Verdes, CA 90275 USA	310 662-9114 tt.lee@ieee.org	Approve, no comments (Y)	-	-	-		Producer
06754667	Arthur Light	703-329-3879	Approve,	1	-	-		Government/Academic/Consu

	ITT Industries AES 2560 Huntington Avenue Alexandria, VA 22303-1404 USA	art.light@itt.com	no comments (Y)*					
01952282	Jenshan Lin Lucent Technologies 600 Mountain Ave Murray Hill, NJ 07974 US	908-582-5182 jenshan@ieee.org	Approve, no comments (Y)*	1	-	-		Producer
40135086	David Linton Queens University Ashby Building, 125 Stranmillis Road Belfast, Northern Ireland BT9 5AH United Kingdom	+44 28 90 27 42 65 d.linton@ee.qub.ac.uk	-	-	-	-		Government/Academic/Consu
00788638	Ahmad MahinFallah Phoenix International 1441 44th St. NW Fargo, North Dakota 58102 USA	701-277-6322 ahmadfallah@ieee.org	Approve, no comments (Y)	-	-	-		General Interest
06760854	James Scott Marin 131 Skyline Drive Murphy, Texas 75095 USA	972-516-5158 smarin@ix.netcom.com	Approve, no comments (Y)	1	-	-		Government/Academic/Consu
08122103	Roger Marks NIST 325 Broadway, MC 813.00 Boulder, CO 80305 USA	+1 303 497 3037 r.b.marks@ieee.org	Approve, comments (Y1)	1	-	1		Government/Academic/Consu
08940611	Peter Martini University of Bonn, Dept. of CS IV Roemerstr. 164 Bonn, none 53117 Germany	+49 228 73 4334 martini@cs.uni-bonn.de	Approve, no comments (Y)	-	-	-		Government/Academic/Consu
02112266	George May Efficient Networks 5314 Umbrella Pine Ct. Arlington, TX 76018 USA	972-759-2942 gcm3629@hotmail.com	Approve, no comments (Y)	-	-	-		Government/Academic/Consu
41340769	Roderick McMullin DragonWave Inc 600-411 Legget Dr. Kanata, Ontario	613-599-9991 x238 rmcmullin@dragonwaveinc.com	Approve, no comments (Y)	-	-	-		Producer

	K2K 3C9 Canada								
01210376	Steve Methley Plextek Ltd London Road Great Chesterford, Essex CB10 2EF UK	+44 1799 533322 sgm@plextek.com	Approve, no comments (Y)*	-	-	-			User
41321733	Vlad Mitlin 3Com 10636 Scripps Summit Court San Diego, CA 92131 USA	858 6748541 vlad_mitlin@3com.com	-	-	-	-			General Interest
07022429	Roger Pandanda MCS Corporation Box 20451 Stanford, CA 94309 USA	650-618-1786 rogerp@ieee.org	Approve, no comments (Y)	-	-	-			General Interest
40300305	Ken Peirce Malibu Networks 1035 Suncast Lane El Dorado Hills, CA 95762 USA	916-941-8814 ken@malibunetworks.com	Approve, no comments (Y)	-	-	-			Producer
41318678	Stephan Reis Nortel Networks 880 Technology Park Drive Billerica, MA 01821 US	978 288 0925 sreis@nortelnetworks.com	Approve, no comments (Y)	-	-	-			Producer
40266494	Eugene Robinson E.A. Robinson Consulting 1200 Lake Point Circle McKinney, Texas 75070 U.S.A.	972 529-6395 rob1200@aol.com	-	-	-	-			Government/Academic/Consu
40247562	Jaideep Roy 43 Reading Rd., Apt. N Edison, NJ 08817 USA	732-635-9449 jroyjroy@yahoo.com	Approve, no comments (Y)	-	-	-			General Interest
41277568	Hiroyasu Shimizu USC DigiArk 5-6-27 Kitashinagawa Shinagawa-ku, Tokyo 141-0001 JAPAN	81337769523 xHiroyasu.Shimizu@jp.sony.com	Approve, no comments (Y)	-	-	-			General Interest
01637487	Chet Shirali Vyyo Inc. 20400 Stevens Creek Boulevard, Suite 800 Cupertino, CA	408-523-4820 cshirali@vyyo.com	Disapprove, comments (N)	5	-	-			Producer

	95014 usa								
40208774	Fredrik Tufvesson Fiberless Society Box 714 Lund, Skane SE-22007 Sweden	+46-46 38 65 97 fredrik.tufvesson@fiberless-society.com	Approve, no comments (Y)	-	-	-			Producer
03239332	JOAN VIAPLANA RETEVISION JOSEP PLÀ, 15 ARENYS DE MUNT, BARCELONA 08358 SPAIN	+34670221398 jviaplana@acm.org	Approve, no comments (Y)	-	-	-			General Interest
41387608	Stanley S. Wang Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-526-7265 stanley@ensemblecom.com	Approve, comments (Y1)*	15	34	-			Producer
07284292	Don Wright Lexmark 740 New Circle Rd, C14/082-3 Lexington, Ky 40550 USA	859-825-4808 don@lexmark.com	Approve, no comments (Y)	-	-	-			General Interest
05907266	Oren Yuen 1504 Steinhart Ave Redondo Beach, CA 90278 USA	310-372-9334 oren.yuen@ieee.org	Approve, no comments (Y)	-	-	-			User
08022824	Jim Zerbe evolutioncom 17800 North Perimeter Road Suite 200 Scottsdale, AZ 85255 USA	480.538.3700 jim.zerbe@evolutioncom.com	-	-	-	-			Government/Academic/Consu
01378470	walt roehr	703-435-1787 w.c.roehr@ieee.org	Approve, no comments (Y)	-	-	-			-
Comment Totals *				32	40		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 balloter 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)	Abstention(s)	Not Returned	Total
User	3	0	1	1	5
Producer	13	1	2	2	18
General Interest	9	0	0	1	10
Government/Academic/Consultant	6	0	0	3	9
Voting Tally	31	1	3	7	42

Abstention details:	2 for lack of time (A1)	0 for lack of expertise (A2)	1 for other reasons (A3)
----------------------------	-------------------------	------------------------------	--------------------------

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **5**Comment submitted by: **Chet****Shirali**

Comment	Type	Technical	Starting Page #	Starting Line #	Section
---------	------	-----------	-----------------	-----------------	---------

Proposals for the changes of message formats that support the above comments are included in document number 802.16-3c-01/37 dated March 7, 2001

Suggested Remedy

Faster to market with matured standard.

Proposed Resolution**Recommendation:****Recommendation by****Reason for Recommendation****Resolution of Group****Decision of Group: Rejected****Reason for Group's Decision/Resolution**

It is not clear what the comment means by "the above comments".

Changes proposed in the cited document were debated and rejected during draft development and Working Group WG Letter Ballot.

For wireless access systems, the suggested message formats would cause a significant capacity reduction.

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **14**Comment submitted by: **Chet****Shirali**

Comment	Type Technical	Starting Page # 65	Starting Line # 14	Section 6.2.2
----------------	------------------------------	----------------------------------	----------------------------------	-----------------------------

Change the generic header format to DOCSIS 1.1 header. Extended header is required (as defined in DOCSIS).

Change HCS to 16 bits.

Suggested Remedy

As per IEEE 802.16 decisions, this draft is used for both MMDS and LMDS applications. Most of the MMDS target market and some of the LMDS target markets are residential/SOHO, where low cost is an important feature and the applications are IP centric. Low cost will be achieved by using existing technology as DOCSIS and the header should be based on IP environment, not on connection oriented environment that is not typical to residential/SOHO applications. Time to market will be achieved by making use of a matured standard with existing products as DOCSIS (including DOCSIS based wireless products). It is important to support applications such as VoIP, QoS, link layer encryption. Using IP centric protocol is critical for this and using DOCSIS based protocol will enable the use of existing products. Without an extended header, it is almost impossible to make future improvements to the standard with backward compatibility.<CR>CRC of 8 bits is not enough, especially for non line of sight applications.<CR>The use ATM centric header is very non-efficient, due to the use of small cells. To reduce the relative overhead, 802.16 tried to minimize the header. The 802.16 MAC is designed for connection oriented with non-optimal adaptations for connectionless. One example is the mandated usage of many different CIDs for different control tasks that cause large overhead in the allocations to the different connections. The sub 11 GHz market is mainly IP oriented and as such the ATM related constraints that limit the efficiency and technical level of the standard, do not apply.

Proposed Resolution

Recommendation:

Recommendation by

Reason for Recommendation

Resolution of Group

Decision of Group: Rejected

Reason for Group's Decision/Resolution

This comment duplicates a comment that was debated and rejected during draft development and Working Group WG Letter Ballot.

For wireless access systems, the suggested header format would cause a significant capacity reduction. The 802.16 system was designed to efficiently carry connectionless as well as connection-oriented protocols and fits seamlessly into a routed IP network. The MAC protocol is well suited to residential and SOHO applications. It is to be noted that the proposed alternative is also connection-oriented.

Similar suggestions were extensively debated and rejected during development of the draft.

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **16**

Comment submitted by: Chet

Shirali

Comment Type **Technical** Starting Page # **74** Starting Line # **44** Section **6.2.2.3.1-2,**
DCD and UCD messages should be adapted to support OFDM PHY and adaptive modulation. It is required to configure the OFDM parameters in these messages. The messages should enable the definition of multiple profiles for each usage code (DIUC/ UIUC) .

Suggested Remedy

These messages are designed for single carrier. PHY layer for the 802.16.3 (this draft is for both 802.16.1 and 802.16.3) has not been selected yet but OFDM and adaptive modulation are required by the customers to support reliable and efficient operation in the Non Line of Sight (NLOS) environment.

Proposed Resolution**Recommendation:****Recommendation by****Reason for Recommendation****Resolution of Group****Decision of Group: Rejected****Reason for Group's Decision/Resolution**

The comment is irrelevant since there is no OFDM PHY in this document.

The 802.16 Working Group is working on amendments that include OFDM. This comment may be appropriate to those amendments.

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **19**Comment submitted by: **Chet****Shirali**Comment Type **Technical**Starting Page # **77**Starting Line # **16**Section **6.2.2.3.3-4**

DL-MAP and UL-MAP should be adapted to support allocation on both frequency and time domain for OFDM and for multiple antennas for MIMO.

Suggested Remedy

OFDM and MIMO are required by the service providers to support reliable and efficient operation in NLOS environment. The current allocation scheme refers to a single carrier scheme where the allocations refer just to the time domain.<CR><CR>This comment was rejected by the working group of 802.16 on the ground that the burst descriptors were moved to PHY specific sections.<CR><CR>The 802.16 Group's reasoning does not refer to Vyyo's comment. We talked about MAP; they talk about DCD and UCD. While there may be a reason to wait for the DCD and UCD definition, based on the PHY, the MAPs are integral and basic components of the MAC that must be defined. Insufficient and not flexible allocation scheme would cause very low efficiency of the channel usage. The current definition of UL-MAP that is the part of the 802.16 MAC, applies to a single dimension that is typical to a single carrier PHY and is not flexible enough.

Proposed Resolution**Recommendation:****Recommendation by****Reason for Recommendation****Resolution of Group****Decision of Group: Rejected****Reason for Group's Decision/Resolution**

The comment is irrelevant since there is no OFDM PHY in this document.

The 802.16 Working Group is working on amendments that include OFDM. This comment may be appropriate to those amendments.

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **51**Comment submitted by: **Chet****Shirali**Comment Type **Technical**Starting Page # **131**Starting Line # **7**Section **6.2.9**

Initialization procedure should be changed to optimize the channel selection, based on frequency selective performance, channels load, PHY parameters (more robust or higher throughput tradeoff), geographical location, antenna direction (sector) and polarization.<CR>Both initial selection and on the fly changing of the channel should be supported.

Suggested Remedy

The current proposal can cause a SS to randomly select a channel or in a typical implementation to select the first one that is found in the scanning for downstream, and the first one in the UCD for upstream. This will result in a very unloaded system and managing it with channel change messages will make the initialization very slow.<CR>Channels may have big difference in the performance per SS, based on the frequency diversity in NLOS channels, channels that serve different antenna sectors or cells, and channels with different PHY parameters. It is important to select the optimal channel per SS, while maintaining load balance in the whole system.<CR><CR>The 802.16 working group rejected the comment on the following grounds:<CR><CR>∑ "The text in the MAC specification has been made generic enough to accommodate all PHYs. Any rules that are necessary for a specific PHY will be included within the appropriate PHY section.<CR>. ìRNG-RSP can direct a SS to a different channel.<CR>∑ ìIn addition, a BS ID is present to allow the SS to register only with a pre-specified BS.<CR><CR>Vyyo's response: <CR><CR>∑ It is not a PHY related issue. It is part of the MAC and should be supported by the MAC ∑ It is not an efficient method. It can cause most of the SSES to initially connect to the same channel - BIG problem on system initialization and failure recovery. It makes the channel selection much longer. The BS doesn't know the receive parameters for each channel, for it must repeatedly direct to a new channel, get the parameters and then direct to the next one to measure. If the SS is directed to a channel it cannot receive it may cause an initialization that will delay the process even more. <CR>∑ It requires unwanted pre-configuration of the BS ID for each SS. This does not solve the problem for selection of the right sector.

Proposed Resolution**Recommendation:****Recommendation by****Reason for Recommendation****Resolution of Group****Decision of Group: Rejected****Reason for Group's Decision/Resolution**

The point is invalid. The MAC provides the base station with the ability to direct the SS to another channel. Therefore, the SS cannot "randomly select a channel" unless the vendor chooses to implement a random selection process. Channel selection of the sort described in the comment has been considered a network management system issue and outside the scope of the standard.

PAR FORM

02/09/01

PAR Status: Revision of New PAR

1. Sponsor Date of Request: February 9, 2001

2. Assigned Project Number: 802.16

3. PAR Approval Date: 03/17/2001

PAR Signature Page on File: Yes

4. Project Title and Working Group/Sponsor for this project Document type and title:

Document type: Standard for

Title: Local and Metropolitan Area Networks - Part 16: Standard Air Interface for Fixed Broadband Wireless Access Systems

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

Name of Official Reporter: Roger B Marks

Telephone: (303) 497-3037

FAX: (303) 497-7828

Email: r.b.marks@ieee.org

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

Telephone:

FAX:

Email:

Name of Sponsoring Society and Committee: C/LM {Note: IEEE Microwave Theory and Techniques Society is also a sponsor.}

Name of Sponsoring Committee Chair: James T Carlo

Telephone: 214-693-1776

FAX: 214-853-5274

Email: jcarlo@ti.com

5. Type of Project:

5a. Is this an update to an existing PAR? Yes

If YES: Indicated PAR number/approval date: 802.16.1 - 01/30/2000

If YES: Is this project in ballot now? No

5b. The project is a: The project is a new standard

6. Life Cycle: Full Use

7. The type of ballot is: Individual Sponsor Ballot

Expected Date of Submission for Initial Sponsor Ballot: 06/30/2001

8. Fill in Projected Completion Date for Submittal to RevCom: 8/31/01

12. Are you aware of other standards or projects with a similar scope? Yes

The Broadband Radio Access Networks (BRAN) Committee of the European Telecommunications Standards Institute (ETSI) has a project known as HIPERACCESS which is attempting to standardize broadband wireless access in Europe. This is a regional standards effort with limited participation by the rest of the world. Furthermore, the project addresses regional markets with specific regulatory conditions distinct from those of other areas. We have held a joint meeting with this group and appointed a liaison. We plan to coordinate with them and will seek harmony where possible.

13. Will this standard (in part or in whole) be submitted to an international organization for consideration/Adoption? Yes

If yes, please answer the following question:

Which International Organization/Committee? ITU-R

International Contact Information:

Name: Jose M Costa

Address: Nortel Networks
14 Ridgefield Crescent
Nepean, Ontario K2H 6R9
Canada

Phone/FAX: Phone: 613-763-7574, FAX: 613-765-1225

Email: j.costa@ieee.org

14. Is this project intended to focus on health, safety environmental issues? No

15. Mandatory Coordination:

SCC10 (IEEE Dictionary) by Circulation of Drafts
IEEE Staff Editorial Review by Circulation of Drafts
SCC14 (Quantities, Units and Letter Symbols) by Circulation of Drafts

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

5a) This revision renumbers the PAR from "802.16.1" to "802.16" and simplifies the title. The PAR is also brought into the current format.

9. Scope of Proposed Project:

This standard specifies the physical layer and media access control layer of the air interface of interoperable fixed point-to-multipoint broadband wireless access systems. The specification enables transport of data, video, and voice services. It applies to systems operating in the vicinity of 30 GHz but is broadly applicable to systems operating between 10 and 66 GHz.

10. Purpose of Proposed Project:

To enable rapid worldwide deployment of innovative, cost-effective, and interoperable multivendor broadband wireless access products. To facilitate competition in broadband access by providing alternatives to wireline broadband access. To facilitate coexistence studies, encourage consistent worldwide allocation, and accelerate the commercialization of broadband wireless access spectrum.

11. Intellectual Property

Has the sponsor reviewed the IEEE Patent policy with the Group? Yes

Are you aware of the possibility of any copyrights relevant to this project? Yes

Are you aware of the possibility of any trademarks relevant to this project? Yes

Are you aware of possible registration of objects or numbers due to this project? Yes

20 March 2001

Dr. Jim Carlo
Texas Instruments
9208 Heatherdale Drive
Dallas, TX 76243

Re: P802.16 Local and Metropolitan Area Networks - Part 16: Standard Air Interface for Fixed Broadband Wireless Access Systems

P802.16a Local and Metropolitan Area Networks - Amendment to Standard Air Interface for Fixed Broadband Wireless Access Systems -
Media Access Control Modifications and Additional Physical Layer
for 2-11 GHz

P802.16b Local and Metropolitan Area Networks - Amendment to Standard Air Interface for Fixed Broadband Wireless Access Systems -
Media Access Control Modifications and Additional Physical Layer for
License-Exempt Frequencies

P802.16.2 Local and Metropolitan Area Networks - Recommended Practice
for Coexistence of Fixed Broadband Wireless Access Systems

Dear Dr. Carlo:

I am pleased to inform you that on 17 March 2001 the IEEE-SA Standards Board approved P802.16 and P802.16.2 until December 2003 and P802.16a and P802.16b until December 2004. Copies of the files are attached in .pdf format.

Now that your projects have been approved, please forward a roster of participants involved in the development of these projects. This request is in accordance with the IEEE-SA Operations Manual, Clause 5.1.2f under Duties of the Sponsor which states:

"Submit annually to the IEEE Standards Department an electronic roster of individuals participating on standards projects"

Attached is an Excel spreadsheet for your convenience. Please forward these lists to me via e-mail at j.haasz@ieee.org no later than 1 June 2001.

At the bottom of this e-mail, please find URLs which you may find useful in the development of your proposed standards and in submitting your final draft for approval. We strongly recommend that a copy of your draft be sent to this office for review prior to the final voting by the working group to allow for a quick review by the editorial staff before sponsor balloting.

If you should have any further questions or would like to receive this information in paper, please contact me at 732-562-6367 or by email at j.haasz@ieee.org.

Sincerely,

Jodi Haasz
Senior Administrator, Standards Board

Document under Review: **P802.16/D4-2001**Ballot Number: **0000086**

Comment Date

Comment # **1**

Comment submitted by: Roger

Marks

Comment	Type	Editorial	Starting Page #	Starting Line #	Section
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Make editorial changes as recommended by IEEE staff Project Editor:

MEMO

TO: Balloting Center

FROM: Jennifer Longman

DATE: 21 August 2001

RE: Editorial Coordination of IEEE P802.16/ D4

Upon review of IEEE P802.16/ D4, I have the following comments:

1. For consistency in all IEEE 802 Standards, the name of document should read as follows:

Draft Standard for Local and metropolitan area networks---Part 16:
Standard Air Interface for Fixed Broadband Wireless Access Systems

2. Review the use of shall/should/may/can/will/must throughout the document to be sure they are used in accordance with IEEE's style.

3. Most of the information in subclause 1.3 is a repeat of information that is standard boilerplate in all IEEE 802 standards. Please review the front matter of other IEEE 802 standards in order to determine whether this information should be removed. Is it necessary for the implementation of the standard? If not, it should not be included in the normative portion of the standard.

4. Would you like users of this standard to refer to the most recent version of the standards in Clause 2? If yes, the statement preceding the lists of references must read, "This standard shall be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply."

5. The bracketed information before each reference in Clause 2 must be removed. This does not conform to IEEE's style.

6. The terms in Clause 3 (Definitions) must all be lowercased. Also, all acronyms within definitions must be spelled out.

7. The following statement should precede the list of definitions:

"For the purposes of this standard, the following terms and definitions apply. IEEE 100, The Authoritative Dictionary of IEEE Standards Terms should be referenced for terms not defined in this clause."

8. The definitions of the acronyms in Clause 4 must all be lowercased. Also, italics must be removed. It does not comply with IEEE's style.

9. Color in Figure 125 needs to be removed.
10. The Bibliography must be labeled as Annex A and labeled as "Informative."
11. The Working Group will need to provide clean reproducible-quality figures in electronic format (preferably TIFF or EPS format.) If figures were derived or obtained from sources other than the Working Group itself, please obtain and supply permission from the appropriate sources.

Please note that items 2, 3, 4, 10, and 11 will require a recirculation and must be resolved before the draft is submitted to RevCom. If you have any questions or concerns, do not hesitate to contact me.

Suggested Remedy

Make changes as indicated above.

Proposed Resolution	Recommendation:	Recommendation by
----------------------------	------------------------	--------------------------

Reason for Recommendation

Resolution of Group	Decision of Group: Accepted-Clarified
----------------------------	--

Page 1, Lines 4-17 and Page 27, Lines 1-14: Replace with:
Draft Standard for Local and metropolitan area networks---Part 16:
Standard Air Interface for Fixed Broadband Wireless Access Systems

Delete subclause 1.3 (will replace with similar material from other 802 standards; this material will be placed in informative Introduction by IEEE Project Editor following ballot).

Page 30, Line 40: replace with "This standard shall be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply."

Page 30-32: remove bracketed information before each reference in Clause 2.

Page 32-35: set defined terms in lower case

Page 32-35: spell out all acronyms within definitions

Page 32, Line 11: add "For the purposes of this standard, the following terms and definitions apply. IEEE Std 100, The Authoritative Dictionary of IEEE Standards Terms should be referenced for terms not defined in this clause."

Page 35-38: set definitions of abbreviations in lower case. Change italics into non-italic font.

Page 293: Remove blue shading from center of dot in Figure 125.

Page 358, Line 34: Replace "Bibliography" with "Annex A (Informative)".

Reason for Group's Decision/Resolution

CableLabs®

Cable Television Laboratories, Inc.

February 25, 2000

Dr. Roger B. Marks
IEEE 802.16 Working Group on Broadband Wireless Access Standards
325 Broadway MC 813.00
Boulder, CO 80303
mailto: r.b.marks@ieee.org

Dear Dr. Marks:

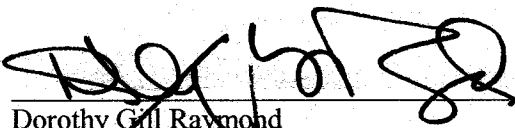
I hereby grant permission to the Institute of Electrical and Electronics Engineers, Inc., to modify the below listed source material and to include the modified or unmodified material in the specified standards project:

802.16.1 Air Interface for Fixed Broadband Wireless Access Systems

Source material:

1. Radio Frequency Interface Specification (version 1.1), part of Data-Over-Cable Service Interface Specifications, © Copyright 1999, Cable Television Laboratories
Sections 4, 5, 6, 7, 8, 9 and Appendices A through Q.
2. Baseline Privacy Plus Interface Specification, © Copyright 1999, Cable Television Laboratories.
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Dorothy Gill Raymond
Cable Television Laboratories, Inc.
Senior Vice President and General Counsel

2-25-00

Date

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PROJECT NUMBER: P802.16

DATE: 24 October 2001

This draft standard has been developed in accordance with the policies and procedures of the Sponsor and I am authorized by those policies and procedures to make this submittal.

Roger B. Mark

Working Group Chair

Signature of Submitter

Title (role in Sponsor)

=====

FOR STANDARDS DEPARTMENT USE ONLY

Signature of IEEE Officer

IEEE-SA Standards Board Chair

Title

Date

Return to:

IEEE Standards Department
RevCom Secretary
445 Hoes Lane
PO Box 1331
Piscataway, NJ 08855-1331

Appendix: Final Ballot Summary (following Confirmation Ballot)

Ballot Summary

P802.16/D5 Recirculation

Closing date: 2001-10-28

This is a recirculation ballot. The report collates the results from the following groups: 0000086 0000166 0000181.

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

43 eligible people in this ballot group.

32 affirmative votes

1 negative votes

3 abstention votes

=====

36 votes received = 83% returned
8% abstention**2. The 75% affirmation requirement is being met.**

32 affirmative votes

1 negative votes

=====

33 votes = 96% affirmative

Ballot Details**Coordination Responses Only**

IEEE/Coord Number	Name	Role	Phone / E-mail	Coordination Ballot Received	Coordination Comment(s) Received
00601054	Bruce Barrow	SCC14	301-493-4374 b.barrow@ieee.org	-	-
00001000	Yvette Ho Sang	SCC10	732-562-3814 y.hosang@ieee.org	-	yes
00001001	Yvette Ho Sang	Editorial	732-562-3814 y.hosang@ieee.org	-	yes

Balloters

Number	Name	Phone / E-mail	Vote	T	E	Graphics	Status Notes	I
01933571	Larry Arnett Mitsubishi Electric USA 1050 E Arques Ave Sunnyvale, CA 94085-4601 USA	408 774-3179 larnett@ieee.org	Approve, no comments (Y)	-	-	-		Producer
40300357	TAMER BESER STM inc. yazgan sokak 25 / 11 cebeci ankara, tr 06590	90 312 3632023 tbaser@ssm.gov.tr	Approve, no comments (Y)	-	-	-		Governm

	turkey								
41244616	Tracy Black Corning Gilbert Inc. 4201 North 47th Avenue Phoenix, AZ 85031 USA	623-845-5613x437 tblack@gilbertconnectors.com	Abstain for lack of time (A1)	-	-	-			Producer
05891064	Wesley Brodsky Raytheon 1001 Boston Post Road Marlborough, MA 01753 USA	5084901616 wesley_g_brodsky@res.raytheon.com	Approve, comments (Y1)	-	4	-			Producer
05572953	James Carlo Texas Instruments 9208 Heatherdale Drive Dallas, TX 75243 USA	214-693-1776 j.carlo@ieee.org	Approve, no comments (Y)	-	-	-			General I
06503270	Jose Costa Nortel Networks 14 Ridgefield Crescent Nepean, Ontario K2H 6R9 Canada	+1 613 763-7574 costa@nortelnetworks.com	Abstain, other (A3)	2	2	-			Producer
05046479	GURU DUTT DHINGRA DHINGRA & ASSOCIATES SAPPHIRE PARK-1, Opp, K, J. Mehta High School NASIK - ROAD - 422101, Maharashtra 422101 INDIA	+91 253 561836 dhingra@bom6.vsnl.in	-	-	-	-			User
41334099	Jagadish Kumar Dasari Sasken Communication Technologies Limited (Previously Silicon Automation Systems Limited) #4, Corporation Division #67, HAL II Stage, Jeevan Bheema Nagar	+91-80-5276100 Extn: 4039 djk@sasi.com	-	-	-	-			Producer

	Bangalore, Karnataka 560 075 INDIA							
40199311	Thomas Dineen Dineen Consulting PO Box 361801 Milpitas, CA 95036 USA	(408) 956-0539 tdineen@ix.netcom.com	Approve, no comments (Y)*	-	-	-		Producer
41311588	Vern Dubendorf Exodus Communications, Inc. 10 New England Executive Park Burlington, MA 01803 USA	781.203.1367 tdubendorf@ieee.org	Approve, no comments (Y)	-	-	-		User
02623320	Peter Ecclesine Cisco Systems 2799 Reed Ave Livermore, CA 94550-9652 USA	+1.408.527.0815 petere@ieee.org	Approve, no comments (Y)	6	-	-		Producer
03533247	Keng Fong Ralink Technology 400 E. Remington Dr. #B213 Sunnyvale, CA 94087 USA	408-431-8332 fong@ieee.org	-	-	-	-		Producer
40306847	Simon Harrison Red-M (Communications) Ltd Wexham Springs, Framewood Road Wexham, Slough SL3 6PJ UK	+441753661421 simon.harrison@red-m.com	Approve, no comments (Y)	-	-	-		General I
01550144	Vic Hayes Agere Systems 1-10 Zadelstede Nieuwegein, Utrecht NL-3431 JZ Netherlands	+31 30 609 7528 vichayes@agere.com	Abstain for lack of time (A1)	-	-	-		User
01556620	Hamadi Jamali Canon R&D Center Americas 3300 North First, Third Floor San Jose, CA 95134 USA	(408)468-2814 jamali@cra.canon.com	Approve, no comments (Y)	-	-	-		General I

40357068	Stuart Kerry Philips Semiconductors, Inc. 1109 McKay Drive, M/S 48-SJ San Jose, CA 95131 USA	4084747356 stuart@ok-brit.com	Approve, no comments (Y)*	-	-	-		Producer
41379755	Jay Klein Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-404-6544 jay@ensemblecom.com	Approve, comments (Y1)	-	-	2		Producer
07409634	Timothy Lee Boeing Satellite Systems 29135 Whites Point Drive Rancho Palos Verdes, CA 90275 USA	310 662-9114 tt.lee@ieee.org	Approve, no comments (Y)	-	-	-		Producer
06754667	Arthur Light ITT Industries AES 2560 Huntington Avenue Alexandria, VA 22303-1404 USA	703-329-3879 art.light@itt.com	Approve, no comments (Y)	1	-	-		Governm
01952282	Jenshan Lin Lucent Technologies 600 Mountain Ave Murray Hill, NJ 07974 US	908-582-5182 jenshan@ieee.org	Approve, no comments (Y)	1	-	-		Producer
40135086	David Linton Queens University Ashby Building, 125 Stranmillis Road Belfast, Northern Ireland BT9 5AH United Kingdom	+44 28 90 27 42 65 d.linton@ee.qub.ac.uk	-	-	-	-		Governm
00788638	Ahmad MahinFallah Phoenix International 1441 44th St. NW Fargo, North	701-277-6322 ahmadfallah@ieee.org	Approve, no comments (Y)	-	-	-		General I

	Dakota 58102 USA							
06760854	James Scott Marin 131 Skyline Drive Murphy, Texas 75095 USA	972-516-5158 smarin@ix.netcom.com	Approve, no comments (Y)	1	-	-		Governm
08122103	Roger Marks NIST 325 Broadway, MC 813.00 Boulder, CO 80305 USA	+1 303 497 3037 r.b.marks@ieee.org	Approve, comments (Y1)	1	-	1		Governm
08940611	Peter Martini University of Bonn, Dept. of CS IV Roemerstr. 164 Bonn, none 53117 Germany	+49 228 73 4334 martini@cs.uni-bonn.de	Approve, no comments (Y)	-	-	-		Governm
02112266	George May Efficient Networks 5314 Umbrella Pine Ct. Arlington, TX 76018 USA	972-759-2942 gcm3629@hotmail.com	Approve, no comments (Y)*	-	-	-		Governm
41340769	Roderick McMullin DragonWave Inc 600-411 Legget Dr. Kanata, Ontario K2K 3C9 Canada	613-599-9991 x238 rmcmullin@dragonwaveinc.com	Approve, no comments (Y)	-	-	-		Producer
01210376	Steve Methley Plextek Ltd London Road Great Chesterford, Essex CB10 2EF UK	+44 1799 533322 sgm@plextek.com	Approve, no comments (Y)	-	-	-		User
41321733	Vlad Mitlin 3Com 10636 Scripps Summit Court San Diego, CA 92131 USA	858 6748541 vlad_mitlin@3com.com	-	-	-	-		General I
07022429	Roger Pandanda MCS Corporation Box 20451 Stanford, CA	650-618-1786 rogerp@ieee.org	Approve, no comments (Y)	-	-	-		General I

	94309 USA							
40300305	Ken Peirce Malibu Networks 1035 Suncast Lane El Dorado Hills, CA 95762 USA	916-941-8814 ken@malibunetworks.com	Approve, no comments (Y)	-	-	-		Producer
41318678	Stephan Reis Nortel Networks 880 Technology Park Drive Billerica, MA 01821 US	978 288 0925 sreis@nortelnetworks.com	Approve, no comments (Y)	-	-	-		Producer
40266494	Eugene Robinson E.A. Robinson Consulting 1200 Lake Point Circle McKinney, Texas 75070 U.S.A.	972 529-6395 rob1200@aol.com	-	-	-	-		Governm
40247562	Jaideep Roy 43 Reading Rd., Apt. N Edison, NJ 08817 USA	732-635-9449 jroyjroy@yahoo.com	Approve, no comments (Y)*	-	-	-		General I
41277568	Hiroyasu Shimizu USC DigiArk 5-6-27 Kitashinagawa Shinagawa-ku, Tokyo 141-0001 JAPAN	81337769523 xHiroyasu.Shimizu@jp.sony.com	Approve, no comments (Y)	-	-	-		General I
01637487	Chet Shirali Vvyo Inc. 20400 Stevens Creek Boulevard, Suite 800 Cupertino, CA 95014 usa	408-523-4820 cshirali@vvyo.com	Disapprove, comments (N)	5	-	-		Producer
40208774	Fredrik Tufvesson Fiberless Society Box 714 Lund, Skane SE-22007 Sweden	+46-46 38 65 97 fredrik.tufvesson@fiberless-society.com	Approve, no comments (Y)	-	-	-		Producer
03239332	JOAN VIAPLANA RETEVISION JOSEP PLÀ, 15	+34670221398 jviaplana@acm.org	Approve, no comments (Y)	-	-	-		General I

	ARENYS DE MUNT, BARCELONA 08358 SPAIN							
41387608	Stanley S. Wang Ensemble Communications Inc. 9890 Towne Centre Drive San Diego, CA 92121 USA	858-526-7265 stanley@ensemblecom.com	Approve, comments (Y1)	15	34	-		Producer
07284292	Don Wright Lexmark 740 New Circle Rd, C14/082-3 Lexington, Ky 40550 USA	859-825-4808 don@lexmark.com	Approve, no comments (Y)	-	-	-		General I
05907266	Oren Yuen 1504 Steinhart Ave Redondo Beach, CA 90278 USA	310-372-9334 oren.yuen@ieee.org	Approve, no comments (Y)	-	-	-		User
08022824	Jim Zerbe evolutioncom 17800 North Perimeter Road Suite 200 Scottsdale, AZ 85255 USA	480.538.3700 jim.zerbe@evolutioncom.com	-	-	-	-		Governm
01378470	walt roehr	703-435-1787 w.c.roehr@ieee.org	Approve, no comments (Y)	-	-	-		-
Comment Totals *				32	40	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 balloter 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)	Abstention(s)	Not Returned	Total
User	3	0	1	1	5
Producer	13	1	2	2	18
General Interest	9	0	0	1	10
Government/Academic/Consultant	6	0	0	3	9
Voting Tally	31	1	3	7	42

Abstention details:	2 for lack of time (A1)	0 for lack of expertise (A2)	1 for other reasons (A3)
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