

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

Friday, July 18, 2008 – 1:00 p.m.

Denver, CO

EC members present:

- Paul Nikolich - Chair, IEEE 802 LAN / MAN Standards Committee
- Mat Sherman - Vice Chair, IEEE 802 LAN / MAN Standards Committee
- Pat Thaler - Vice Chair, IEEE 802 LAN / MAN Standards Committee
- James Gilb - Recording Secretary, IEEE 802 LAN / MAN Standards Committee
- Buzz Rigsbee - Executive Secretary, IEEE 802 LAN / MAN Standards Committee
- John Hawkins - Treasurer, IEEE 802 LAN/MAN Standards Committee
- Tony Jeffree - Chair, IEEE 802.1 – HILI Working Group
- David Law - Chair, IEEE 802.3 – CSMA/CD Working Group
- Bruce Kraemer - 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
- John Lemon - Chair, IEEE 802.17 – Resilient Packet Ring Working Group
- Mike Lynch - Chair, IEEE 802.18 – Regulatory TAG
- Steve Shellhammer - Chair, IEEE 802.19 – Wireless Coexistence TAG
- Mark Klerer - Chair, IEEE 802.20 – Mobile Broadband Wireless Access
- Vivek Gupta - Chair, IEEE 802.21 – Media Independent Handover
- Carl Stevenson - Chair, IEEE 802.22 – Wireless Regional Area Networks
- Geoff Thompson - Member Emeritus (non-voting)

1.00 MEETING CALLED TO ORDER - Nikolich

Meeting called to order at 1:00 pm, CDT.

2.00 MI APPROVE OR MODIFY AGENDA - Nikolich

r04 **DRAFT AGENDA - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING**
 Friday, July 18, 2008 – 1:00PM-6:00PM

1.00	MEETING CALLED TO ORDER	- Nikolich	1 01:00 PM
2.00	MI APPROVE OR MODIFY AGENDA	- Nikolich	9 01:01 PM
3.00		-	01:10 PM
3.01		-	01:10 PM
3.02		-	01:10 PM
4.00	II Announcements from the Chair	- Nikolich	5 01:10 PM
4.01		-	01:15 PM
Category (* = consent agenda)			01:15 PM
5.00	IEEE Standards Board Items		01:15 PM
5.01	ME 802.20a PAR to NESCOM	- Klerer	2 01:15 PM
5.02	ME 802.21a PAR to NESCOM	- Gupta	2 01:17 PM
5.03	ME 802.11 VHDL6 PAR to NESCOM	- Kraemer	2 01:19 PM

5.04	ME	802.11 VHT60 PAR to NESCOM	- Kraemer	10	01:21 PM
5.05	ME	P802.1AB-REV PAR modification to NESCOM	- Jeffree	2	01:31 PM
5.06	ME	802.1AC PAR extension to NESCOM	- Jeffree	2	01:33 PM
5.07	ME	802.15.5 PAR extension to NESCOM	- Heile	2	01:35 PM
5.08	ME	802.16 Interpretation	- Marks	2	01:37 PM
5.09	ME	802.1ak corrigendum to RevCom	- Jeffree	2	01:39 PM
5.10	ME	802.1AX to RevCom	- Law	2	01:41 PM
5.11	ME	802.3 revision to RevCom	- Law	2	01:43 PM
5.12	ME	802.11y to RevCom	- Kraemer	2	01:45 PM
5.13	ME	802.15.3 reaffirmation to RevCom	- Heile	5	01:47 PM
5.14	ME	Conditional approval of 802.21 to RevCom	- Gupta	10	01:52 PM
5.15	ME	Approval of 802.1ap to sponsor ballot	- Jeffree	5	02:02 PM
5.16	ME	Approval of 802.11w to sponsor ballot	- Kraemer	5	02:07 PM
5.17	ME	Approval of response to 3 interpretation requests	- Kraemer	5	02:12 PM
5.18	ME	Approval of 802.15.4c to sponsor ballot	- Heile	5	02:17 PM
5.19	ME	Conditional approval of 802.15.4d to sponsor ballot	- Heile	10	02:22 PM
5.20	ME	Conditional approval of 802.15.5 to sponsor ballot	- Heile	10	02:32 PM
5.21	ME	Approval of 802.16h to sponsor ballot	- Marks	5	02:42 PM
5.22	ME	802.16h PAR extension to NESCOM	- Marks	5	02:47 PM
5.23	ME	Conditional approval of 802.16j to sponsor ballot	- Marks	10	02:52 PM
5.24	ME	Conditional approval of 802.16 revision to sponsor ballot	- Marks	10	03:02 PM
5.25	ME		-		03:12 PM
5.26	ME	802.3ba 5C modification	- Law	5	03:12 PM
5.27	ME	Conditional approval of P802.22.1 to sponsor ballot	- Stevenson	10	03:17 PM
5.28	ME	Approval of 802.1ag interpretation response	- Jeffree	5	03:27 PM
6.00		Executive Committee Study Groups, Working Groups, TAGs	-		03:32 PM
6.01	MI*	802.15 Visible light communications (1st extension)	- Heile		03:32 PM
6.02	MI*	802.21 Emergency communications (1st extension)	- Gupta		03:32 PM
6.03	MI*	802.21 Handovers with Broadcast Services (1st extension)	- Gupta		03:32 PM
6.04	MI	802.11 VHT (2nd extension)	- Kraemer	3	03:32 PM
6.05	MI	802.15 RFID (2nd extension)	- Heile	3	03:35 PM
6.06	MI	Formation of 802.15 Wireless neighborhood area networks	- Heile	2	03:38 PM
6.07	MI	802.21 Security (3rd extension)	- Gupta	5	03:40 PM
6.08	MI	802.21 Multi-radio power management (3rd extension)	- Gupta	5	03:45 PM
6.09	II	IMT-Advanced update	- Lynch	5	03:50 PM
6.10			-		03:55 PM
7.00		Break	-		03:55 PM
8.00		IEEE -SA Items	-		03:55 PM
8.01	II	802 Task Force update	- Nikolich	10	03:55 PM
8.02	MI	802 EC position on getIEEE 802 for 2009 calendar year	- Hawkins	5	04:05 PM
8.03	II	PSDO comments	- Thompson	5	04:10 PM
8.04	II		-		04:15 PM
9.00		LMSC Liaisons and External Interface	-		04:15 PM
9.01	ME	802.20-M1801-Revision	- Lynch	5	04:15 PM
9.02	ME	Revision of Recommendation ITU-R M.1801	- Lynch	5	04:20 PM

9.03	ME	Further ECC UWB Consultation	- Lynch	5 04:25 PM
9.04	ME	Parameters of Radio Interface Technologies	- Lynch	5 04:30 PM
9.05	ME	Further Response on IMT-2000 OFDMA TDD WMAN ACS Values	- Lynch	5 04:35 PM
9.06	ME	Updated Material on IMT-2000 OFDMA TDD WMAN for Revision 9 of Recommendation ITU-R M.1457	- Lynch	5 04:40 PM
9.07	ME	Ex Parte Comments of IEEE 802	- Lynch	5 04:45 PM
9.08			-	04:50 PM
9.09			-	04:50 PM
9.10	ME*	IEEE 802.3 response to liaison letter from ITU-T SG15 to 802.3	- Law	04:50 PM
9.11	ME*	IEEE 802.3 liaison letter to ITU-T SG15 regarding 40 Gb/s and 100 Gb/s OTN compatibility	- Law	04:50 PM
9.12	II	Liaison letter to ITU-T SG15 regarding PBB-TE protection	- Jeffree	5 04:50 PM
9.13	ME	A802.11 WG to send Jesse Walker to attend July JTC1/SC6/WG1 special meeting and to present two documents.	- Kraemer	5 04:55 PM
10.00		LMSC Internal Business		05:00 PM
10.01	II	Treasurer's Report	- Hawkins	5 05:00 PM
10.02	MI	Meeting planner RFP and contract	- Hawkins	5 05:05 PM
10.03	MI	Network services report	- Rigsbee	5 05:10 PM
10.04	MI	Network support contract extension	- Hawkins	5 05:15 PM
10.05	MI	nNA site selection	- Rigsbee	5 05:20 PM
10.06				05:25 PM
10.07				05:25 PM
11.00		Information Items		05:25 PM
11.01			-	05:25 PM
11.02	MI	Future meeting sites	- Rigsbee	5 05:25 PM
11.03	II	P&P update	- Sherman	5 05:30 PM
11.04	II	Global standards collaboration 13 communique	- Nikolich	5 05:35 PM
11.05			-	05:40 PM
11.06				05:40 PM
11.07				05:40 PM
11.08				05:40 PM
11.09				05:40 PM
12.00		ADJOURN SEC MEETING	- Nikolich	06:00 PM

ME - Motion, External MI - Motion, Internal

DT- Discussion Topic II - Information Item

Special Orders

Moved to approve the agenda, as modified.

Vote: 16/0/0, motion is approved

4.00 II Announcements from the Chair

- Nikolich

Nikolich reviewed the rules for voting in the EC

Approval of forwarding to NesCom and RevCom

- 7.1.3.3 Voting at Meetings
 - Approval of PARs and Drafts for forwarding to IEEE-SA shall require approval by a majority of EC members **present with voting rights**.
- But what does **present with voting rights** mean?
 - Present at the meeting or present during the vote?
 - Are recused members included in “present with voting rights”?
- Chair’s ruling: Present with voting rights means:
 - Present at the beginning of the agenda item and
 - Does not include those recused for the motion.

5.00

IEEE Standards Board Items`1

5.01 ME 802.20a PAR to NESCOM

- Klerer

Moved to approve PAR to forward to NesCom, Moved Klerer, seconded Gupta

Vote: 16/0/0, motion is approved



802.20a MIB Amendment PAR Approval



- 802.20 requests EC approval to forward the draft PAR for Management Information Base Enhancements and Corrigenda Items http://ieee802.org/20/WG_Docs/802.20-08-06r2.pdf to NesCom.
- Moved: Mark Klerer
- Second: Vivek Gupta

- LMSC Vote: 16/0/0
- WG Vote: 10/0/0

5.02 ME 802.21a PAR to NESCOM

- Gupta

Moved to approve PAR, Moved Gupta, seconded Klerer

Vote: 16/0/0, motion is approved



802.21a Security Extensions PAR Approval



- 802.21 requests EC approval to forward the draft PAR for Security Extensions to Media Independent Handover Services and Protocol
<http://mentor.ieee.org/802.21/file/08/21-08-0225-02-0sec-par-for-security-extensions.doc> to NesCom.
- Moved: Vivek Gupta
- Second: Mark Klerer

- LMSC Vote: 16/0/0
- WG Vote: 17/0/1

5.03 ME 802.11 VHTL6 PAR to NESCOM

- Kraemer

Thompson suggested that in the future, separate votes be taken in the WG for each PAR.

Thaler agreed that separate votes should be taken

Nikolich clarified that this motion is only for the less than 6 GHz PAR.

Moved to approve PAR, Moved Kraemer, seconded Marks

Vote: 16/0/0, motion is approved

Agenda#: 5.03

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: MARKS

Move to forward the PAR information from 11-08-0807-03-0vht-below-6-ghz-par-nescom-form-plus-5cs, in the proper web based form, to NesCom

SG Vote on the motion: 61-0-14 (combined motion)

WG Vote on the motion: 89-18-16 (combined motion)

Approve: 16

Do Not Approve: 0

Abstain: 0

**IEEE P802.11
Wireless LANs**

**Proposal for PAR and 5 Criteria for Very High Throughput
(VHT) SG for below 6 GHz operation**

Date: May 12, 2008

Author(s):

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Abstract

This document provides a proposed PAR and 5 Criteria for IEEE 802.11 VHT SG project for below 6GHz carrier frequency operation. The PAR form is copied from the IEEE web site official PAR submission form.

The PAR Copyright Release and [Signature Page](#) must be submitted by FAX to +1-732-875-0695 to the [NesCom Administrator](#).

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

Once you approve and submit the following information, changes may only be made through the NesCom Administrator.

Submittal Email: eldad.perahia @intel.com
Type of Project: Amendment to Standard
1.1 Project Number: 802.11 2007
1.2 Type of Document: Standard
1.3 Life Cycle: Full
1.4 Is this project in ballot now? No
2.1 Title of Standard: Draft Amendment to STANDARD [FOR] Information Technology-Telecommunications and information exchange between systems-Local and Metropolitan networks-Specific requirements-Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Enhancements for Very High Throughput for operation in bands below 6GHz
3.1 Name of Working Group: Wireless LAN Working Group
Contact information for Working Group Chair Bruce Kraemer Email: bkraemer@ieee.org Phone:
Contact Information for Working Group Vice Chair Adrian Stephens Email: adrian.p.stephens@ieee.org Phone: (503) 616-3800
3.2 Sponsoring Society and Committee: IEEE Computer Society/Local and Metropolitan Area Networks (C/LM) Contact information for Sponsor Chair: Paul Nikolich Email: p.nikolich@ieee.org Phone: 857-205-0050 Contact information for Standards Representative: Email: Phone:
3.3 Joint Sponsor: / () Contact information for Sponsor Chair: Email: Phone: Contact information for Standards Representative: Email: Phone:

4.1 Type of Ballot: Individual	
4.2 Expected Date of Submission for Initial Sponsor Ballot: 2011-12	
4.3 Projected Completion Date for Submittal to RevCom: 2012-13	
5.1 Approximate number of people expected to work on this project: 100	
<ul style="list-style-type: none"> • 5.2 Scope of Proposed Standard: The scope of this project is to define an amendment that shall define standardized modifications to both the 802.11 physical layers (PHY) and the 802.11 Medium Access Control Layer (MAC) so that modes of operation can be enabled that are capable of supporting: <ul style="list-style-type: none"> ○ A maximum multi-STA throughput (measured at the MAC data service access point), of at least 1Gbps and a maximum single link throughput (measured at the MAC data service access point), of at least 500Mbps. ○ Below 6GHz carrier frequency operation excluding 2.4GHz operation and ensuring backward compatibility and coexistence with legacy IEEE802.11a/n devices in the 5GHz unlicensed band. 	<ul style="list-style-type: none"> • Old Scope:
5.3 Is the completion of this standard is dependent upon the completion of another standard: No If yes, please explain:	
<p>5.4 Purpose of Proposed Standard: The purpose of the project is to improve the 802.11 wireless local area network (LAN) user experience by providing significantly higher BSS throughput for existing WLAN application areas and to enable new market segments for operation below 6 GHz including distribution of multiple multimedia/data streams.</p>	<p>Old Purpose:</p>
<p>5.5 Need for the Project: As wireless networks are deployed, users are able to transition applications from fixed, non-wireless links to the convenience, freedom and versatility of wireless links. These transitions create an evolutionary demand to enhance the wireless network to support new classes of applications with higher bandwidth requirements. Wireless networks are particularly in need of continual enhancements since the link is by definition shared.</p> <p>This project will meet that evolving need for higher bandwidth in the projected completion timeframe and enable the transition of the next class of applications.</p>	
5.6 Stakeholders for the Standard: Semiconductor manufacturers, personal computer manufacturers, enterprise networking device manufacturers, consumer electronic device manufacturers.	
Intellectual Property	
6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for	

preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board?
Yes

If yes, state date: 2008-05-12

If no, please explain:

6.1.b. Is the Sponsor aware of any copyright permission needed for this project? No

If yes, please explain:

6.1.c. Is the Sponsor aware of possible registration activity related to this project? No

If yes, please explain:

7.1 Are there other standards or projects with a similar scope? No

If yes, please explain:

and answer the following: Sponsor Organization:

Project/Standard Number:

Project/Standard Date: 0000-00-00

Project/Standard Title:

7.2 Future Adoptions

Is there potential for this standard (in part or in whole) to be adopted by another national, regional, or international organization? No

If Yes, the following questions must be answered:

Technical Committee Name and Number:

Other Organization Contact Information:

Contact person:

Contact Email address:

7.3 Will this project result in any health, safety, security, or environmental guidance that affects or applies to human health or safety? No

If yes, please explain:

7.4 Additional Explanatory Notes: (Item Number and Explanation)

- The project may include the capability to handle multiple simultaneous communications.
- The multi-STA throughput is defined as the sum of the MAC SAP throughputs across all active transmissions within a set of STAs.
- The 1Gbps maximum multi-STA throughput may be achieved when considering multiple simultaneously actively-communicating STAs, e.g., a BSS with 1 AP and at least 3 STAs.
- Though the primary metric used in the scope of the project deals with MAC SAP throughput, the intent is to provide enhancements over IEEE802.11n on the following inter-dependent performance indicators: throughput at the MAC data SAP, range of operation, aggregate network capacity (spectrum efficiency), power consumption (peak and average).

8.1 Sponsor Information:

Is the scope of this project within the approved scope/definition of the Sponsor's Charter? Yes

If no, please explain:

Five Criteria

117.5.1 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.

- According to InStat and ABI Research, demand for WLAN is expected to grow at a 34% Compound Annual Growth Rate (CAGR) over the next five years. Over 75% of all home-networking connections and over 95% of all mobile PC network connections will be via WLAN links by 2011. More than 12% of mobile phones are expected to include Wi-Fi connectivity by 2011.
- New uses such as multimedia, simultaneous transmission of multiple high rate video streams, audio, and on-line gaming, immersive environments and collaborative communications, will drive the need for higher throughput in the home, enterprise and outdoor environments.
- As usage increases in the outdoor, corporate and other high-density environments (e.g. a 20% increase in number of hotspots is expected between 2008 and 2011), bandwidth restrictions of a shared media will start to occur.
- This is very similar to what happened in the wired Ethernet market where the need for higher throughput drove the development and adoption of Fast Ethernet (100 Mbps). The need for higher throughput drove switching and 100Base-TX adoption, then Gigabit Ethernet (GbE), then 10GbE. While a switching technology would be desirable for WLAN, this is not technically feasible. 802.11 developments have followed a similar progression from 1 & 2 Mbps, to 11 Mbps, to 54 Mbps, to 300 and 600 Mbps. The next logical step in wireless LAN technology is to further increase the BSS data throughput.
- In parallel to the traditional legacy usage for WLAN, the ITU has opened up the possibility for nomadic 1Gbps IMT-Advanced WLAN technology, providing a means for broadening even further the applicability of WLAN technologies.

b) Multiple vendors and numerous users.

A wide variety of vendors currently build numerous products for the WLAN marketplace. According to ABI Research Wireless LAN revenues is expected to surpass \$6B by 2011 and it is anticipated that the majority of those vendors, and others, will participate in the standards development process and subsequent commercialization activities.

According to Wi-Fi Alliance the community of Wi-Fi users in 2008 is estimated to count more than 250M members.

c) Balanced costs (LAN versus attached stations).

WLAN equipment is accepted as having balanced costs. The development of Gigabit Wireless capabilities will not disrupt the established balance

217.5.2 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 that are compatible with systems management standards.

Compatibility with IEEE 802 requirements will be accomplished by keeping the MAC SAP interface the same as the existing 802.11 standard. The proposed amendment shall introduce no 802.1 architectural changes. The MAC SAP definition shall not be altered, ensuring that all LLC and MAC interfaces are compatible to and in conformance with the IEEE 802.1 Architecture, Management and Internetworking standards. New managed objects shall be defined as necessary in a format and structure consistent with existing 802.11 managed objects. Backward compatibility and coexistence with legacy devices will be granted for the 5GHz bands.

217.5.3 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.

This project will result in a wireless LAN with higher throughput than that provided by 802.11a, 802.11b, 802.11g and 802.11n. The goal is to increase the overall system throughput by considering new technologies, for the both PHY and MAC layers, operating below the 6GHz band.

VHT will allow a corporate or home user to roam from high-throughput, dense cells to wider area networks in a seamless manner while maintaining full support for the installed base security, management, diagnostics and backbone infrastructure. This will be supported by maintaining backwards compatibility to 802.11 standards like for instance 802.11i/w for security, 802.11s for mesh networking, 802.11k/v for network management.

The VHT amendment may consider applications described by IMT-Advanced for nomadic WLAN systems.

IEEE P802.15 TG3c intends to support higher physical data rates than those currently defined by P802.15 task group 3, and similar to those targeted by this proposal. However, the applications of 802.11 and 802.15 are different. 802.15 defines standards for short-range wireless *personal* area networks, 802.11 defines standards for relatively longer-range wireless *local* area networks. The different requirements of each group will result in different standards that satisfy the purpose and scope defined in each project's PAR.

b) One unique solution per problem (not two solutions to a problem).

There is no other wireless LAN standard providing significantly higher throughput than 802.11vht operating in bands below 6GHz.

c) Easy for the document reader to select the relevant specification.

The 802.11vht amendment will differentiate itself from other IEEE 802 wireless standards via the title which stresses the specification of gigabit speed WLAN technology.

117.5.4 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.

Feasibility of multiple STAs 1Gbps and single link 500Mbps MAC SAP throughput links has been assessed in simulations and presented in documents 11-08-0307-01-0vht (<https://mentor.ieee.org/802.11/file/08/11-08-0307-01-0vht-on-the-feasibility-of-1-gbps-for-various-mac-phy-architectures.ppt>) and 11-08-0535-00-0vht (<https://mentor.ieee.org/802.11/file/08/11-08-0535-00-0vht-phy-and-mac-throughput-analysis-with-80-mhz-for-vht-below-6-ghz.ppt>) for 80MHz bandwidth operation.

The following documents are additional examples that support the feasibility of elements of gigabit wireless technology:

- Gigabit MIMO OFDM Testbed (Siemens) <http://iaf-bs.de/projects/gigabit-mimo-ofdm-testbed.en.html>
- 8x8 MU-MIMO Testbed (NTT): Performance Evaluation of 8x8 Multi-User MIMO-OFDM Testbed in an Actual Indoor Environment, IEEE PIMRC'06

Additional candidate technologies that may contribute to achieve the targeted throughput encompass time/frequency/space multiplexing: OFDMA, SDMA and more generally Multi-User MIMO transmissions. These technologies have demonstrated feasibility in the cellular context.

b) Proven technology, reasonable testing.

Until the full extent of the user models referenced in the IEEE802.11vht PAR is understood, the study group cannot completely assess the extent of reasonable testing for those technologies. However, 802.11 is a mature technology which has a wide variety of legacy devices and a proven track record, with hundreds of millions of devices shipping each year and the increased capabilities envisioned for the baseband and RF parts necessary to implement the proposed amendment are in line with the current progress in semiconductor technology.

c) Confidence in reliability.

Analysis of current WLAN products and new academic research provides confidence in the reliability of the technology that will be developed by the project. There are currently reliable WLAN solutions. The study group envisions that the project will result in similar or improved reliability over current levels.

17.5.4.1 Coexistence of 802 wireless standards specifying devices for unlicensed operation

A working group proposing a wireless project is required to demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable. The Working Group will create a CA document as part of the WG balloting process. If the Working Group elects not to create a CA document, it will explain to the EC the reason the CA document is not applicable.

The working group will create a CA document as part of the WG balloting process.

217.5.5 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.

Support of the proposed standard will likely require a manufacturer to develop a modified radio, modem and firmware. This is similar in principle to the transition between 802.11b or 802.11g and 802.11n, or between 802.11a and 802.11n. The cost factors for these transitions are well known and the data for this is well understood.

b) Reasonable cost for performance.

The new standard will provide manufacturers the ability to support gigabit per second wireless throughput speeds. In general, the cost factor changes needed to implement the technology envisioned by the study group are well within the capabilities of existing technology. Competition between manufacturers will ensure that costs remain reasonable.

c) Consideration of installation costs.

The proposed standard has no known impact on installation costs.

5.04 ME 802.11 VHT60 PAR to NESCOM

- Kraemer

Moved to approve the PAR, Moved Kraemer, seconded Rigsbee

Discussion followed

Perahia (Intel) presented document 08-11-0813-01, slide 4.

Moved to amend the motion to send the 802.11 VHT60 PAR to Nescom by adding the text to the motion “With the modification to the Scope of the PAR replacing the text “Address coexistence with other wireless systems” with the text “Ensure coexistence with IEEE 802.15.3c” Moved Shellhammer/Stevenson

Discussion followed.

Editorial change to motion: Moved to amend the motion to send the 802.11 VHT60 PAR to Nescom by adding the text to the motion “With the modification to the Scope of the PAR replacing the text “Addresses coexistence with other wireless systems” with the text “Ensure coexistence with IEEE 802.15.3c”.

No objection to editorial change

Vote: 5/9/2, Motion fails

Nikolich went around the table asking for comments.

Vote on original motion: 8/7/1, Motion fails (9 approves were required)

Nikolich declines to vote.

Agenda#: 5.04

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: RIGSBEE

**Move to forward the PAR information from
11-08-0806-03-0vht-60-ghz-par-nescom-form-
plus-5cs, in the proper web based form, to
NesCom**

SG Vote on the motion: 61-0-14 (combined motion)

WG Vote on the motion: 89-18-16 (combined motion)

Approve: 8

Do Not Approve:7

Abstain:1

IEEE P802.11
Wireless LANs

VHT 60 GHz PAR plus 5C's**Date:** 2008-07-14**Author(s):**

Name	Affiliation	Address	Phone	email
Eldad Perahia	Intel Corporation	2111 NE 25 th Ave Hillsboro, OR 97124	503-712-8081	Eldad.perahia@intel.com

Abstract

60 GHz PAR in NesCom format plus 5C's

[R0: copy PAR from 08/715 and copy 5C's from 08/223r5](#)[R1: speculative edits from individual feedback](#)[R2: 1\) speculative edits in Additional Explanatory Notes, 2\) modified tense of scope](#)[R3: modified Additional Explanatory Notes in response to official feedback](#)

Draft PAR Confirmation Number	
Submittal Email: eldad.perahia@intel.com	
Type of Project: PAR for an amendment to existing Standard 802.11-2007	
1.1 Project Number: P802.11	
1.2 Type of Document: Standard for	
1.3 Life Cycle: Full	
1.4 Is this project in ballot now? No	
2.1 Title of Standard: IEEE Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Amendment: Enhancements for Very High Throughput in the 60 GHz Band	
3.1 Name of Working Group: Wireless LAN Working Group(C/LM/WG802.11) Contact information for Working Group Chair Bruce Kraemer 517 La Costa Court Melbourne, FL 32940 US bkraemer@marvell.com Working Group Vice Chair: Jon Rosdahl 10871 N 5750 West Highland, UT 84003 US, Email: jrosdahl@ieee.org	
3.2 Sponsoring Society and Committee: IEEE Computer Society/Local and Metropolitan Area Networks(C/LM) Contact information for Sponsor Chair: Paul Nikolich 18 Bishops Lane Lynnfield, MA 01940 US p.nikolich@ieee.org Contact information for Standards Representative:	
4.1 Type of Ballot: Individual	
4.2 Expected Date of Submission for Initial Sponsor Ballot: 2011-12	
4.3 Projected Completion Date for Submittal to RevCom: 2012-12	
5.1 Approximate number of people expected to work on this project: 100	
5.2 Scope of Proposed Standard: The scope of this project is to define an amendment that shall define standardized modifications to both the 802.11 physical layers (PHY) and the 802.11 Medium Access Control Layer (MAC) to enable operation in the 60 GHz frequency band (typically 57-66 GHz) capable of very high throughput. The	Old Scope:

<p>MAC and PHY specified in this amendment:</p> <ul style="list-style-type: none"> • Enables a maximum throughput of at least 1 Gbps, as measured at the MAC data service access point (SAP) • Enables fast session transfer between PHYs • Maintains the 802.11 user experience • Addresses coexistence with other systems in the band 	
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

5.3 Is the completion of this standard is dependent upon the completion of another standard: ~~No~~ **Yes**
If yes, please explain: 802.11n (for fast session transfer between PHYs)

<p>5.4 Purpose of Proposed Standard: The purpose of the project is to improve the 802.11 user experience by providing significantly higher throughput for local area networking</p>	<p>Old Purpose:</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------

5.5 Need for the Project: As WLAN usage grows, there exists an increasing need for additional capacity. Additional high bandwidth channels are needed for efficient support of high throughput usage. Mainstream wired LAN products have shifted to Gigabit per second speeds. WLAN technology must advance to provide a comparable throughput.

5.6 Stakeholders for the Standard: Manufacturers and users of Semiconductor semiconductor manufacturers, personal computer manufacturers, enterprise enterprise networking device manufacturers, consumer electronic device manufacturers, Home-home networking equipment suppliers, mobile devices.

Intellectual Property
6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board? Yes
 If yes, state date: 2008-05-12
 If no, please explain:
6.1.b. Is the Sponsor aware of any copyright permissions needed for this project? No
 If yes, please explain:
6.1.c. Is the Sponsor aware of possible registration activity related to this project? No
 If yes, please explain:

7.1 Are there other standards or projects with a similar scope? No
 Explanation:
 Sponsor Organization:
 Project/Standard Number:
 Project/Standard Date: 0000-00-00
 Project/Standard Title:

7.2 International Standards Activities
a. Adoptions
 Is there potential for this standard to be adopted by another organization? Do not know at this time
~~No~~
 Organization: ISO/IEC JTC1
 Technical Committee Name:
 Technical Committee Number:
 Contact person Name:
 Contact Phone:
 Contact Email:

b. Joint Development

Is it the intent to develop this document jointly with another organization? No

Organization:

Technical Committee Name:

Technical Committee Number:

Contact person Name:

Contact Phone:

Contact Email:

c. Harmonization

Are you aware of another organization that may be interested in portions of this document in their standardization development efforts? No

Organization:

Technical Committee Name:

Technical Committee Number:

Contact person Name:

Contact Phone:

Contact Email:

8.1 Additional Explanatory Notes: (Item Number and Explanation)

5.2) Fast session transfer between 60 GHz and 2.4/5 GHz bands will enable typical WLAN coverage for multi-band devices. However, this does not imply that devices must be multi-band. The amendment will specify a mechanism for multi-band devices.

It is in the best interest of users and the industry to strive for a level of coexistence between wireless systems. VHT will investigate coexistence with other systems in the 60 GHz band.

- [One approach will be to investigate a common PHY between VHT and 802.15.3c, and adopt if feasible.](#)
- [Another approach is a common coexistence mechanism that may be used by other 60 GHz systems](#)

[Regarding 802.11 user experience, this refers to 1\) maintaining the network architecture of the 802.11 system \(e.g. infrastructure basic service set, extended service set, access point, station\) and 2\) reuse and maintain backward compatibility to 802.11 management plane \(e.g. association, authentication, security, measurement, capability exchange, MIB\)](#)

[1.1\) this is an amendment to the then current revision of the IEEE standard 802.11](#)

Contact the [NesCom Administrator](#)

[place document body text here]

Five Criteria

117.5.1 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.

According to ABI Research, demand for WLAN ICs is expected to grow at a 34% Compound Annual Growth Rate (CAGR) from 2007 to 2012 and Wi-Fi IC sales are expected to exceed 1 Billion units per year in 2012.

There are several market drivers for Very High Throughput wireless LAN, including:

- Never ending quest for ~~for~~ higher performance computing drives higher processing power. IO and Network speeds needs to grow proportionally to maintain comparable system level performance and cater to a positive user experience.
- Media appliances are moving to HD content, driving 10X storage capacity and bandwidth requirements, wireless LAN throughput must grow in order to serve those media links at home and in the office.
- Mainstream Wired LAN products have shifted to Gigabit per second speeds. The trend for a purely wireless campus drives the need for wired equivalent multi-Gigabit per second wireless solutions.
- As wireless network density grows, there exists an increasing need for additional capacity and reduced cell sizes. Additional high bandwidth channels are needed for efficient support of high throughput usage.
- Corporate computing is shifting to a centralized processing model with lower cost “thin” clients that act as “semi-dumb terminals”. With a motivation to reduce Capital and Operational Expenditures, this new model changes the nature of network traffic and drives much higher KVM (Keyboard, Video, Mouse) content, which in turn drives increases in bandwidth and reduction in latencies.

Such usage models are described in:

11-07/2988 Wi-Fi Alliance (WFA) VHT Study Group Usage Models

11-07/2587 VHT Applications

b) Multiple vendors and numerous users.

According to ABI Research Wireless LAN revenues is expected to surpass \$6B by 2011, and there is little doubt that all incumbent WLAN vendors and very likely new vendors will participate in standard definition and will develop a high throughput WLAN solution. This activity will stimulate the current and future WLAN market. Rapid adoption of new WLAN and GbE technologies proved that users demand additional performance and vendors have a commercial incentive to drive this additional goodness

c) Balanced costs (LAN versus attached stations).

VHT is expected to show similar balance between end-station and network infrastructure (e.g., access points) to that of previous WLAN options

~~WLAN cost for existing and new technologies continue to be competitive, new high throughput solutions will not change this paradigm and it is clear that cost parity will be maintained for VHT WLAN.~~

117.5.2 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 that are compatible with systems management standards.

Compatibility with IEEE 802 requirements will result from keeping the MAC SAP interface the same as for the existing 802.11 standard. The proposed amendment shall introduce no 802.1 architectural changes. The MAC SAP definition shall not be altered, ensuring that all LLC and MAC interfaces are compatible to and in conformance with the IEEE 802.1 Architecture, Management and Internetworking standards. New managed objects shall be defined as necessary in a format and structure consistent with existing 802.11 managed objects.

117.5.3 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.

This project will result in a wireless LAN system with significantly higher throughput than is provided by 802.11a, 802.11b, 802.11g and 802.11n wireless networks, while leveraging existing network level investments. The goal is to increase the overall system throughput by considering both PHY and MAC layer enhancements, but not re-invent the baseline 802.11 functionality.

VHT will be the only technology that can allow a corporate or home user to roam from high-throughput, dense cells to wider area networks in a seamless manner while maintaining full support for the installed base security, management, diagnostics and backbone infrastructure. This will be supported by maintaining backwards compatibility to previous 802.11 standards like: 802.11 i/w for security, 802.11s for mesh networking, 802.11 k/v for network management and much more. With the additional bandwidth that the 60 GHz band can offer, VHT will likely be adopted in an ad-hoc manner, starting in specific locations that make use of higher throughput and bandwidth, while maintaining legacy 11n support, to enable seamless migration. This only increases the need for making VHT part of the 802.11 family.

Although this amendment proposes to use the same spectrum as the proposed IEEE 802.15.3c PHY, this work will create a solution compatible with existing IEEE 802.11 deployments.

b) One unique solution per problem (not two solutions to a problem).

There ~~are-is~~ no other wireless LAN standard providing significantly higher throughput than 802.11_VHT ~~proposes~~.

c) Easy for the document reader to select the relevant specification.

~~60 GHz PHY will likely be amended to 802.11 as a new clause. An introduction sub-clause will be added to clause 5.2, which will highlight MAC modifications and their associated clauses. 60 GHz Very High Throughput will be introduced as a new amendment in 802.11.~~

117.5.4 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.

Proof of concept systems in 60 GHz are available today (There have been public demonstrations of systems capable of delivering more than 1 Gbps throughput at over 10_m ~~NLOS~~non line of sight). Link budget analysis has been introduced to the Study Group ~~as has the market opportunity in the unlicensed 60 GHz domain~~. The following presentations are supporting the feasibility of a 60_GHz VHT technology and the need for VHT LAN:

IEEE 802.11-07/2790r0 On the feasibility of 60_GHz System

IEEE 802.11-07/2605r0 Practicality of 60 GHz systems

IEEE 802.11-07/2687r0 VHT applications

http://www.hotchips.org/archives/hc19/3_Tues/HC19.06/HC19.06.01.pdf

b) Proven technology, reasonable testing.

60_GHz has been referenced for quite some time as a technology used for > 1_Gbps backhaul communication. 802.11 is a mature technology which has a wide variety of legacy devices and a proven track record, ~~with hundreds~~with hundreds of millions of devices shipping each year. The extent of testing for the new VHT extension is hard to assess at this stage.

c) Confidence in reliability.

Analysis of current WLAN products and of proposals for potential candidate approaches provides confidence in the reliability of the proposed solutions. The Study Group envisions that the proposed amendment will result in similar or improved reliability over current levels.

17.5.4.1 Coexistence of 802 wireless standards specifying devices for unlicensed operation

A working group proposing a wireless project is required to demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable. The Working Group will create a CA document as part of the WG balloting process. If the Working Group elects not to create a CA document, it will explain to the EC the reason the CA document is not applicable.

The working group will create a CA document as part of the WG balloting process.

217.5.5 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.

Support of the proposed amendment will require a manufacturer to develop a modified radio, modem and MAC. This is similar in principle to the transition between 802.11b and 802.11g or between 802.11b and 802.11a or between 802.11g and 802.11n. The cost factors for these transitions are well known and the data for this is well understood.

b) Reasonable cost for performance.

The new amendment will provide manufacturers the option of supporting very high throughput. In general, the cost factor changes needed to implement the extensions envisioned by the study group are within the capabilities of existing technology. Competition between manufacturers will ensure that costs remain reasonable.

c) Consideration of installation costs.

~~The proposed amendment has no known impact on installation costs.~~
For some configurations and use cases installed devices may benefit from a faster backhaul than 802.11n.
The cost factors for such transitions are well known and balanced.

References:

11-08-0223-05-0vht-Proposal for 60GHz VHT PAR

60 GHz PAR

- **The 60 GHz ISM band provides the opportunity for much wider band channels than in <6 GHz enabling single link throughputs greater than 1 Gbps**
- **Two aspects of the PAR ensure distinct identity from 802.15.3c**
 - Enable fast session transfer between PHYs
 - Maintain the 802.11 user experience (as explained in the Additional Explanatory Notes)
- **Fast session transfer provides seamless rate fall back between VHT and 802.11n for multi-band devices**
 - Provides expected WLAN coverage from combo 60 + 2.4/5 GHz devices
- **As an amendment to 802.11, VHT maintains the 802.11 user experience**
 - maintaining the network architecture of the 802.11 system
 - E.g. infrastructure basic service set, extended service set, access point, station
 - Reuse and maintain backward compatibility to 802.11 management plane
 - E.g. association, authentication, security, measurement, capability exchange, MIB
- **Coexistence**
 - Coexistence of various systems in the 60 GHz band is an important issue to VHT demonstrated by being explicitly called out in the PAR scope
 - Furthermore, the task group will produce a coexistence assurance document

Motion to Amend

- Move to amend the motion to send the 802.11 VHT60 PAR to Nescom, by adding the text to the motion “With the modification to the Scope of the PAR replacing the text ‘Addresses coexistence with other wireless systems’ with the text ‘Ensure coexistence with IEEE 802.15.3c.’”
- Move: Steve Shellhammer
- Second: Carl Stevenson
- Vote: 5/9/2

5.08 ME 802.16 Interpretation

- Marks

Motion to approve interpretation. Moved Marks, seconded Stevensons

Vote: 14/0/0, motion is approved

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Response to Request for Interpretation from Qian Xie	
Date Submitted	2008-07-17	
Source(s)	Jonathan Labs Wavesat, Inc. 1375 Trans-Canada Hwy Dorval, Qc H9P 2W8 Canada	Voice: +1 514 684 0200 x325 E-mail: jlabs@wavesat.com
Re:	Request for Interpretation from Qian Xie	
Abstract	The contribution contains a subset of the editorial comments to be considered by the Maintenance Group and approved in a single block vote.	
Purpose	Provide a response to a Request for Interpretation from Qian Xie sent on April 2, 2008.	
Notice	<i>This document does not represent the agreed views of the IEEE 802.16 Working Group or any of its subgroups. It represents only the views of the participants listed in the "Source(s)" field above. It is offered as a basis for discussion. It is not binding on the contributor(s), who reserve(s) the right to add, amend or withdraw material contained herein.</i>	
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.	
Patent Policy	The contributor is familiar with the IEEE-SA Patent Policy and Procedures: < http://standards.ieee.org/guides/bylaws/sect6-7.html#6 > and < http://standards.ieee.org/guides/opman/sect6.html#6.3 >. Further information is located at < http://standards.ieee.org/board/pat/pat-material.html > and < http://standards.ieee.org/board/pat >.	

July 17, 2008

Dear Qian Xie,

This note is in response to your Request for Interpretation of April 2, 2008.

For clarification, we repeat your questions below, and follow them with the approved responses from the IEEE 802.16 Working Group.

Best regards,
 Roger Marks
 802.16 Working Group Chair

[Qian Xie] In the subsection "8.3.3.3 Interleaving", there is a sentence "The second permutation insures that adjacent coded bits are mapped alternately onto less or more significant bits of the constellation, thus avoiding long runs of lowly reliable bits." in the first paragraph.

What is the meaning of "adjacent coded bits"? Does it mean the coded bits before the first permutation, or it mean the coded bits after the first permutation and before the second permutation?

[802.16 WG] "Adjacent coded bits" is in reference to the bits coming sequentially out of the FEC.

[Qian Xie] Another question is what is the meaning of "less or more significant bits". Take 16-QAM constellation (see Figure 203 in the subsection 8.3.3.4) for example, does it mean that the bit "b3" is the more significant bit and "b0" is the less significant bit, or it mean that the bits "b3" and "b1" are the more significant bits and "b2" and "b0" are the less significant bits?

[802.16 WG] The statement "less or more significant bits" refers to the less or more significant bits for I and Q individually in the QAM constellations. It means for 16-QAM as specified in Figure 203 of IEEE Std 802.16-2004, b3 and b1 are the more significant bits and b2 and b0 are the less significant bits.

[Qian Xie] Also I am confused by the permutation, let k be the index of the coded bit before the first permutation; m_k be the index of that coded bit after the first and before the second permutation. Dose it mean that after the permutation we send the bit streams in the order of m_0, m_1, m_2, ...; or it mean that we send the bit streams in the order of 0, 1, 2, 3, ... (in the order of the increasing m_k). Take N_{cbps} equal 24 (16-QAM) for example, from equation(71) we can get

$$m_k = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23 \text{ for } k = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 .$$

Do we send the bits in the order of 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23 or in the order of 0, 12, 1, 13, 2, 14, 3, 15, 4, 16, 5, 17, 6, 18, 7, 19, 8, 20, 9, 21, 10, 22, 11, 23. For the later order, we have to compute k from m_k. For instance, we find that k=12 make m_k=m_12=1, so at the second sending bit we send the 12th bit.

[802.16 WG] The indexing due to the permutations is described in the second paragraph of section 8.3.3.3: "Within a block of N_{cbps} bits at transmission, let k be the index of the coded bit before the first permutation; m_k be the index of that coded bit after the first and before the second permutation; and let j_k be the index after the second permutation, just prior to modulation mapping."

Your second example, where the bits are sent in the order of 0, 12, 1, 13, 2, etc. matches this specification. (Please note, however, your value for N_{cbps} is incorrect for the example of 16-QAM. Please reference Table 223.)

We would like to draw your attention to section 8.3.3.5. That section provides a clear and explicit example of encoding and modulating a data burst for an uplink connection, including the interleaving steps. Following that example should also help answer your questions.

5.05 ME P802.1AB-REV PAR modification to NESCOM

- **Jeffree**

Motion to forward PAR modification to NesCom, Moved Jeffree, seconded Law

Vote 16/0/0, motion is approved

MOTION

- P802.1AB PAR modification:
<http://ieee802.org/1/files/public/docs2008/ab-par-modification-request-0708.pdf>
- 802.1 requests EC approval to forward the draft PAR modification for 802.1AB-REV to NesCom.
- 802.1: Proposed: haddock Second: wright
- For: 33 Against: 0 Abstain: 7
- EC proposed: Jeffree second: Law

5.06 ME 802.1AC PAR extension to NESCOM

- **Jeffree**

Motion to forward PAR extension to NesCom, moved Jeffree, seconded Law

Vote: 15/0/0, motion is approved

MOTION

- P802.1AC PAR extension:
<http://www.ieee802.org/1/files/public/docs2008/ac-par-extension-request-0708.pdf>
- 802.1 requests EC approval to forward the draft PAR extension for 802.1AC to NesCom.
- 802.1: Proposed: haddock Second: wright
- For: 36 Against: 0 Abstain: 9
- EC proposed: Jeffree second: Law

5.07 ME 802.15.5 PAR extension to NESCOM

- Heile

Motion to forward PAR extension to NesCom, moved Heile, seconded Gilb

Vote: 15/0/0, motion is approved

802.15.5 PAR Extension

- PAR Extension circulated to the EC
- No comments received or changes made to original PAR
- WG motion to extend PAR 1 year passed 46/0/0

802.15.5 PAR Extension

- Move that the EC approve forwarding the 802.15.5 PAR Extension to NesCom

Moved: Heile

Second: Gilb

5.09 ME 802.1ak corrigendum to RevCom

- Jeffree

Motion to forward 802.1ak corrigendum to RevCom, moved Jeffree, seconded Law

Vote: 16/0/0, motion is approved

MOTION

- 802.1 requests approval of the EC to forward P802.1ak-Cor-1 to RevCom.
- Proposed: Haddock Second: thaler
- For: 52 Against: 0 Abstain: 0
- EC proposed: Jeffree Second: Law

Supporting material – P802.1ak Cor-1

- Sponsor ballot closed 6th June
- Tally: Yes 51 No 0 Abstain 1
- 100% approval; 88% response
- No outstanding negatives or comments

5.10 ME 802.1AX to RevCom

- **Law**

Moved The EC grants approval for IEEE P802.3 (IEEE 802.3ay), and IEEE P802.1AX (IEEE 802.3ax) submission to RevCom, moved Law, seconded Jeffree

Vote: 16/0/0, motion is approved

5.11 ME 802.3 revision to RevCom

- **Law**

(handled with joint motion)

IEEE P802.3 & IEEE P802.1AX

- These two projects are co-contingent to revise IEEE Std 802.3-2005
- IEEE P802.1AX (IEEE 802.3ax) met all recirculation requirements – 100% approval (w/flip) – prior to March plenary
 - Was approved for submittal in March
 - Co-contingent IEEE P802.3 wasn't ready
- IEEE P802.3 (IEEE 802.3ay) has now met all recirculation requirements – no new comments – 97% approval

IEEE P802.3 (IEEE 802.3ay) Revision

Final sponsor recirculation ballot results

- 3rd Sponsor recirculation ballot - closed 8th July 2008

Comments received: 0

	3 rd Recirculation Draft D2.3			Req %
	#	%	Status	
Abstain	8	8	PASS	< 30
Disapprove with comment	2	-	-	-
Disapprove without comment	0	-	-	-
Approve	89	97	PASS	≥ 75
Ballots returned	99	86	PASS	≥ 75
Voters	115	-	-	-

- 2 Outstanding negatives balloters, Dawe (7) and Nikolich (1)

LOA Status

- But there is an LoA (letters of assurance) issue
 - LoAs are submitted linked to a standard
 - Moving the material to another standard breaks the link.
 - Therefore PatCom advised seeking LoAs from all previous submitters of LoAs on the project or on the base standard after approval of the project.
 - The LOAs must use the current LoA form

LOA Status

- LoAs
 - 4 LoAs submitted against IEEE 802.3ad link agg
 - 8 LoAs submitted against IEEE 802.3 after link agg
 - Total of 12 to request
- Requests have been sent by the 802.3 Chair
 - Advice of PatCom has been carried out
 - Some challenges who to send request to
 - Some response, awaiting others
- Any outstanding responses will be brought to the attention of PatCom

P802.3 & P802.1AX WG motion

Request that the IEEE 802.3 Working Group Chair request IEEE 802 EC approval to submit IEEE P802.3 (802.3ay) D2.3 and IEEE P802.1AX (802.3ax) D2.1 for September consideration by RevCom and the SASB.

M: W. Diab on behalf of the TF
Technical ($\geq 75\%$)
Y: 92, N: 0, A: 1

Motion passed 17-July-2008 2:06PM

IEEE P802.3 & IEEE P802.1AX to RevCom

The EC grants approval for IEEE P802.3 (IEEE 802.3ay), and IEEE P802.1AX (IEEE 802.3ax) submission to RevCom.

M: D. Law S: T. Jeffree

Y: ??, N: ??, A: ??

IEEE 802.3ay (IEEE P802.3) D2.0 Maintenance #9 (Revision) comments

Cl 21 SC 21.1.2 P 2 L 42 # 17
 Dawe, Piers J G Individual

Comment Type TR Comment Status A

21. Introduction to 100 Mb/s baseband networks...' This is mendacious because it includes some but not all 100 Mb/s types. It doesn't matter whether there is an introduction to EFM elsewhere or not, the reader is reading this, here. 100BASE-LX10, 100 Mb/s Ethernet on traditional SMF, is part of the core portfolio, and deserves a mention here, more than Backplane Ethernet does in Clause 34. By core portfolio I mean the matrix 100/1000/10G by SMF, MMF, electrical. Whether or not we need a list of all the port types, we do need a list of the places in the document where they are to be found. 'Distinct Identity: ... Easy for document reader to select relevant spec': it's not easy to select if the document pretends it doesn't exist. What I ask for is not an onerous change.

SuggestedRemedy

Add a new paragraph '100BASE-LX10 and 100BASE-BX10 (Clause 58) use a pair of single-mode fibers and one single-mode fiber, respectively.'

Response Response Status U

ACCEPT IN PRINCIPLE.

Straw poll in realtion to these PHYs:

- Do nothing 6
- Add these PHYs 2
- Do something else 7

Motion

Change the text to read:

The following portion of this standard specifies a family of Physical Layer implementations. Typically 100BASE-TX (Clauses 24 and 25) uses two pairs of Category 5 balanced cabling as defined by ISO/IEC 11801, 100BASE-FX (Clauses 24 and 26) uses two multimode fibers. There are a number of other PHY types and their associated media.

M: Thompson S: Dawe
 Y: 10 N:1 A: 1

Cl 34 SC 34.1.2 P 2 L 43 # 21
 Dawe, Piers J G Individual

Comment Type TR Comment Status A

As we are modifying this introduction to 1000 Mb/s to include Backplane Ethernet, to be even handed we have to point to the other 1000 Mb/s Ethernet types. Whether or not we need a list of all the port types, we do need a list of the places in the document where they are to be found. 'Distinct Identity: ... Easy for document reader to select relevant spec': it's not easy to select if the document pretends it doesn't exist. What I ask for is not an onerous change.

SuggestedRemedy

Insert a new sentence 'For 1000BASE-LX10, 1000BASE-BX10, 1000BASE-CX, 1000BASE-PX10 and 1000BASE-PX20, see Clause 56.'

Response Response Status U

ACCEPT IN PRINCIPLE.

M:Grow S: Noseworthy

The following portion of this standard specifies a family of Physical Layer implementations. 1000BASE-T (Clause 40) uses four pairs of balanced copper cabling. 1000BASE-SX (Clause 36, Clause 37 and Clause 38) uses two multimode fibers. There are a number of other PHY types and their associated media.

Y: 4
 N: 0

IEEE 802.3ay (IEEE P802.3) D2.0 Maintenance #9 (Revision) comments

Cl 70 SC 70.3 P 385 L 37 # 81
 Dawe, Piers J G Individual

Comment Type TR Comment Status R

(Updated comment) TD1.1 comment 45 was implemented in reverse, undoing part of what was implemented of D1.0 comment 132. The response to D1.2 comment 53 does not resolve the issue raised by these comments. As we have established previously, we are discussing a requirement on the PCS, and this is not the PCS clause. The PCS is specified in Clause 36. This requirement is explicit in 36.2.5.2.7 with PICS in 36.7.4.3. Clause 70 cannot make requirements on something outside its scope: the sentence in this draft is improper. All Clause 70 can do is inform the reader that another clause has normative requirements that are of interest. The style guide allows 'must' to describe unavoidable situations', which is exactly what we have here. But I note that the style guide says 'shall equals is required to.' 71.3 and 72.3 have a similar problem; attempting to do what's already done in 48.2.7 and 49.2.16.

SuggestedRemedy

Change 70.3 to the intention of D1.1: to read 'The reader is advised that 36.2.5.2.7 requires the PCS associated with this PMD to support the AN service interface primitive AN_LINK.indication as defined in 73.9.' Make the similar change in 71.3 and 72.3. Delete 71.10.4.1 and 72.10.4.1 (whole subclauses - the equivalent in Clause 70 has gone since D1.1). Alternatively 'The PCS associated with this PMD must support the AN service interface primitive AN_LINK.indication as defined in 73.9 (See 36.2.5.2.7).', make the similar change in 71.3 and 72.3, delete 71.10.4.1 and 72.10.4.1.

Response Response Status U

REJECT.

See comment #12.

Cl 70 SC 70.3 P 385 L 37 # 12
 Dawe, Piers J G Individual

Comment Type TR Comment Status R

D1.1 comment 45 was implemented in reverse, undoing part of what was implemented of D1.0 comment 132. The response to D1.2 comment 53 does not resolve the issue raised by these comments. As we have established previously, we are discussing a requirement on the PCS, and this is not the PCS clause. The PCS is specified in Clause 36. This requirement is explicit in 36.2.5.2.7 with PICS in 36.7.4.3. Clause 70 cannot make requirements on something outside its scope: the sentence in this draft is improper. All Clause 70 can do is inform the reader that another clause has normative requirements that are of interest. The style guide allows 'must' to describe unavoidable situations', which is exactly what we have here. But I note that the style guide says 'shall equals is required to.'

SuggestedRemedy

Change 70.3 to the intention of D1.1: to read 'The reader is advised that 36.2.5.2.7 requires the PCS associated with this PMD to support the AN service interface primitive AN_LINK.indication as defined in 73.9.' Make the similar change in 71.3 and 72.3. Delete 71.10.4.1 and 72.10.4.1 (whole subclauses - the equivalent in Clause 70 has gone since D1.1). Alternatively 'The PCS associated with this PMD must support the AN service interface primitive AN_LINK.indication as defined in 73.9 (See 36.2.5.2.7).', make the similar change in 71.3 and 72.3, delete 71.10.4.1 and 72.10.4.1.

Response Response Status U

REJECT.

There is no consensus to make this change.

Straw poll:

How many like:

Shall 5

Must 2

Motion:

Change 'shall' to must in 71.3 and 72.3.

M: Dawe S: Frazier

Y: 3

N: 6

IEEE 802.3ay (IEEE P802.3) D2.1 Maintenance #9 (Revision) comments

Cl 36 SC 36.1.2 P 35 L 32 # 20
 Dawe, Piers J G Individual

Comment Type TR Comment Status R

There's no point revising old objectives if we don't get it right. 1000BASE-LX10, 1000BASE-BX10 and 1000BASE-PX10 are rated for 10 km, and 1000BASE-PX20 is rated for 20 km. 1000BASE-PX10 and 1000BASE-PX20 don't usually (but could) preserve full duplex behaviour of underlying PMD channels. There's nothing in the PCS or PMA that enforces these limits.

SuggestedRemedy

Change "5 km" to "10 km", change "5000 m" to " 10 km". Or "multiple kilometers".

Response Response Status U

REJECT.

Support for a network extent of 5km was indeed the objective for the 1000BASE-X project (IEEE P802.3z) which is what this subclause is recording.

Support for 10km, provided by 1000BASE-LX10, 1000BASE-BX10 and 1000BASE-PX10 and for 20km, provided by 1000BASE-PX20, was added by the subsequent Ethernet in the First Mile (EFM) project (IEEE P802.3ah).

These EFM objectives are covered in subclause 59.1.1 which states 'c) 1000BASE-X up to 10km over SM fiber' and 60.1.1 which states 'b) 1000 Mb/s up to 10 km on one single-mode fiber supporting a fiber split ratio of 1:16.' and 'c) 1000 Mb/s up to 20 km on one single-mode fiber supporting a fiber split ratio of 1:16.'

Cl 70 SC 70.3 P 385 L 37 # 44
 Dawe, Piers J G Individual

Comment Type TR Comment Status R

As noted before, this sentence in a PMD clause purports to place a requirement on a PCS, which obviously it can't. That requirement is already placed by 36.2.5.2.7. Doing this right does not go against P802.3ap's wish to make this primitive mandatory, only their plan to implement the requirement twice over, badly. This is not settled text; it has been criticised at every ballot.

SuggestedRemedy

Change "shall support" to "must support". Also in 71.3, 72.3. Delete 71.10.4.1 and 72.10.4.1 (the equivalent in Clause 70 has gone since D1.1).

Response Response Status U

REJECT.

This is restatement of a previous comment. See comment #12 from the initial ballot.

IEEE 802.3ay (IEEE P802.3) D2.2 Maintenance #9 (Revision) comments

Cl 36 SC 36.1.2 P 32 L 39 # 3
Dawe, Piers J G Individual

Comment Type TR Comment Status A

As stated in D2.1 comment 20, the recent modifications made to the 5 km network extent objective in 36.1.2 Objectives are not correct. per 36.1.1, the name "1000BASE-X" is a family of 1000 Mb/s Physical Layer implementations (created within whichever project - and they all eventually refer back to this Clause 36 anyway). It is/was not the name of a former project. Old projects have no relevance after their amendments have been rolled up. And the objective was 3 km not 5 (see <http://ieee802.org/3/z/public/minutes/CDA0996.txt> and I'm not aware that it was changed again). Rewriting history is a problem but telling people that 1000BASE-X is good to only 5 km is flat wrong when the bulk of the market at 1310 nm is 10 km rated, as well as further PMDs in Clause 59 and Clause 60.

SuggestedRemedy

Add a NOTE of explanation (a NOTE being not part of the standard) at the end of 36.1.2:

'NOTE - The 1000BASE-X PCS and PMA do not constrain the network extent. PMDs in Clause 59 and Clause 60 have ranges beyond 5 km.'

or, 'NOTE - The full duplex 1000BASE-X PCS and PMA do not constrain the network extent. PMDs in Clause 59 and Clause 60 have ranges beyond 5 km.'

Response Response Status U

ACCEPT IN PRINCIPLE.

Will add the following note:

NOTE - The 1000BASE-X PCS and PMA do not constrain the extent of a full duplex network. PMDs in Clause 59 and Clause 60 have ranges beyond 5 km.

5.12 ME 802.11y to RevCom

- Kraemer

Moved to forward 802.11y to RevCom, moved Kraemer, seconded Stevenson

Vote: 16/0/0, motion is approved

Agenda#: 5.13

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: Stevenson

**Move to approve IEEE 802.11 Working Group TGy
Draft *11.0* to go to RevCom.**

WG Vote on the motion: Passes 75 : 0 : 6

P802.11y had a 97% approval on SB Recirculation-4 Ballot. The only comment received was from the IEEE Editor, indicating that the draft met all IEEE requirements.

Approve: 16

Do Not Approve:0

Abstain:0

**IEEE P802.11
Wireless LANs**

802.11y Sponsor Ballot Report**Date:** 2008-04-29**Author(s):**

Name	Affiliation	Address	Phone	email
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Abstract

This is the report documenting the results of the Sponsor Ballots on IEEE P802.11y. This report is to be submitted to the IEEE 802 Executive Committee to support the request to forward IEEE 802.11y to RevCom for publication.

1. Introduction and Summary

This is the report to the IEEE 802 Executive Committee documenting all the Sponsor Ballots of IEEE 802.11y, including voting results, comment statistics, and unresolved negative comments.

The total number of sponsor voters on IEEE 802.11y is 128. The final results of the voters on IEEE 802.11y are 100-3-5, for an approval percentage of 97%, a return percentage of 84%, and an abstain percentage of 5%.

There are ten outstanding negative comments from three remaining negative voters; none of these outstanding negative comments are from the final recirculation ballot, seven are previously recirculated negative comments from initial sponsor ballot, three are previously recirculated negative comments from the first recirculation ballot.

Based on results of the Sponsor recirculation ballots about P802.11y as documented in this report, we are asking for approval from the IEEE 802 Executive Committee to forward IEEE P802.11y to RevCom for publication.

Agenda Items and motions requesting conditional approval to forward when the prior ballot has closed shall be accompanied by:

- Date the ballot closed
- Vote tally including Approve, Disapprove and Abstain votes
- Comments that support the remaining disapprove votes and Working Group responses.
- Schedule for recirculation ballot and resolution meeting.

Initial Sponsor Ballot was a vote on Draft 7.0, and ran for 40 days starting 21 December 2007, and ending on 30 January 2008. Seventy required comments were received.
98 voted, 87 yes, 7 no, 4 abstained, 92.9% approval rate

Sponsor Recirculation-1 Ballot on Draft 8.0 and resolutions in 11-08-0226-08, and ran for 10 days from 27 Feb 2008 until 8 Mar 2008. There were no new negative voters and fifteen required comments were received.

102 voted, 91 yes, 5 no, 6 abstained, 94.9% approval rate

Sponsor Recirculation-2 Ballot on Draft 9.0 and resolutions in 11-08-0277-02 ran for 15 days from 12 March 2008 until 27 March 2008. There were no new negative voters and two required comments were received.

105 voted, 95 yes, 4 no, 6 abstained, 95.9% approval rate

Sponsor Recirculation-3 Ballot on Draft 10.0 and resolutions in 11-08-0467-01 ran for 15 days from 3 April 2008 until 18 April 2008. There were no new negative voters and no negative required comments were received. Two comments were received.

107 voted, 98 yes, 3 no, 6 abstained, 97% approval rate

Sponsor Recirculation-4 Ballot on Draft 11.0 and resolutions in 11-08-0735-00 ran for 15 days from 5 June 2008 until 20 June 2008. There were no new negative voters and no negative required comments were received. One comment was received.

108 voted, 100 yes, 3 no, 5 abstained, 97% approval rate

At this time there are three Negative voters, with comments recorded in the comment database.

There are five Required Comments on Draft 7.0 from a commenter who did not subsequently vote or respond about SB comment resolutions; three comments requested to define terms already defined in the base standard, the others were Accepted in Principle and changes made in Draft 8.0.

One negative voter wants P802.11y to adapt P802.11k measurements and text, but does not say how 11k measurements can be changed and communicated from the enabling STA to dependent STAs, and responses returned to the enabling STA.

One negative voter has one unsatisfied comment about the relaying of commands and status between the enabling STA and dependent STAs. We chose to change the definition to note that "An enabling STA may choose for other DSE messages to be exchanged over the air, over the DS, or by mechanisms that rely on transport via higher layers."

SB	Comment	Accept	Accept in Principle	Reject
Initial	Technical Required	19	31	16
Recirc-1		2	6	7
	Total	21	37	23

The Comment Resolution Committee responses to all of the unsatisfied comments are on the following pages:

Cl 05 SC 5.1.1.1 P14 L 40 # 111
 Palm, Stephen Individual
 Comment Type **TR** Comment Status **R**
 Mobile STA term not defined nor is the term used
 SuggestedRemedy
 Clarify and use
 Response Response Status **U**
 REJECT. the term "mobile station (STA)" is defined in section 3.86 of 802.11-2007

Cl 05 SC 5.1.1.1 P14 L 40 # 110
 Palm, Stephen Individual
 Comment Type **TR** Comment Status **R**
 Portable STA term not defined nor is the term used.
 SuggestedRemedy
 clarify
 Response Response Status **U**
 REJECT. the term "portable station (STA)" is defined in section 3.109 of 802.11-2007

Cl 05 SC 5.1.1.1 P14 L 46 # 109
 Palm, Stephen Individual
 Comment Type **TR** Comment Status **R**
 Hidden STA not defined
 SuggestedRemedy
 Clarify the term and why it is needed
 Response Response Status **U**
 REJECT. the term "hidden station (STA)" is defined in section 3.64 of 802.11-2007

Cl 07 SC 7.4.7.7 P14 L # 121
 Kwak, Joseph Individual
 Comment Type **TR** Comment Status **R**
 The DSE measurement function duplicates the functionality already defined in the TGk Frame Request measurement.
 SuggestedRemedy
 Use and modify the TGk Frame Request measurement in Tgy. A new optional sub-element in the frame measurement request may be used to specify a tailored level of detail for Tgy purposes.

Response Response Status **U**
 REJECT. TGk measurement functions are optional and within a BSS. 802.11y measurement functions are mandatory, and requests come from the enabling STA, which may be outside the BSS. Commenter is encouraged to provide a proposed resolution in sufficient detail so that the specific wording of the changes that will cause the negative voter to change his vote to "approve" can readily be determined.

Cl 09 SC 9.8.1 P28 L 60 # 145
 Palm, Stephen Individual
 Comment Type **TR** Comment Status **A**
 "accross" seems to have specialized but undefined regulatory meaning
 SuggestedRemedy
 Clarify
 Response Response Status **U**
 ACCEPT IN PRINCIPLE. Will delete the first insertion "that is enabled for operation across regulatory domains" as it changes no meaning of the first two paragraphs.

Cl 09 SC 9.8.4 P29 L 46 # 146
 Palm, Stephen Individual
 Comment Type **ER** Comment Status **A**
 use a non-breaking hyphen in aSlot-Time
 SuggestedRemedy
 use a non-breaking hyphen in aSlot-Time
 Response Response Status **U**
 ACCEPT IN PRINCIPLE. Editor will use 'Esc n s' to surpress hyphenation of aSlotTime.

Cl 17	SC 17.3.10.5	P47	L 62	# 132
Kwak, Joseph		Individual		

Comment Type TR Comment Status R

Received signal strength (RSSI) cannot be used for any quantitative and verifiable performance requirement. RSSI is not defined in base standard. CCA-ED performance (which relies on RSSI) is not defined in base standard and cannot be used for any new Tgy performance requirements.

SuggestedRemedy

Suggest that Tgy modify the TGk defined IPI measurments (in 12.3.5) to include new performance spec for accuracy of idle power measurement. Then Tgy should modify CCA-ED to rely on measurement of IPI values (in place of RSSI) for its specified and testable performance. Otherwise strike out all references to CCA-ED in the TGy draft. Repeating the errors of the past will only further degrade the baseline standard going forward.

Response Response Status U

REJECT. Regulators decide what homologation tests to perform independent of IEEE 802.11y. RSSI for the clause 17 PHY and CCA-ED as defined for operation in 3650-3700 MHz band are testable in the same way as RSSI and CCA for the clause 17 PHY in the 5 GHz band is testable.

Cl 00 SC 0 P1 L 64 # 1
 Stephens, Adrian P Individual

Comment Type TR Comment Status A

"An enabling STA communicates an enabling signal to its dependants over the air, but all other DSE messages may be exchanged over the DS."

This assumes that a serving AP and an enabling STA can communicate over the DS. Is this always true?

I am concerned that there is the assumption DSE messages may be exchanged over the DS - because I see no mechanism that makes this work. OK we have an MLME interface, but how does an enabling STA magically cause a dependent AP's SME to generate specific MLME-DSE* primitives?

Abstract interfaces are not implementation interfaces. This interface is not exposed in an AP, and there is no interoperable way that an enabling STA can access this interface across the wire.

SuggestedRemedy

Either limit the extent of the distribution to single-hop relaying of DSE public action frames, or define an interoperable interface between an enabling STA and a dependent AP across the wire - i.e. by tunnelling DSE public action frames using a specific Ethertype.

Response Response Status U

ACCEPT IN PRINCIPLE. Will change to: "enabling STA: A registered STA that is authorized to control when and how a dependent STA can operate. An enabling STA may choose for other DSE messages to be exchanged over the air, over the DS, or by mechanisms that rely on transport via higher layers."

Cl 07 SC 7.4.7.7 P14 L # 17
 Kwak, Joseph Individual

Comment Type TR Comment Status R

Comment#121 from prior ballot: DSE measurement request not fully specified.

SuggestedRemedy

As indicated in TGk draft, there is a very high overhead of procedure specification text (see TGk 11.10.0 - 11.10.5) needed to unambiguously specify the function of any measurement; Tgy draft does not include such required procedure detail and without such detail, no "standard" STA operation will result. Modify PICS to indicate that Tgy STA is required to be TGk STA and will thus implement the already defined procedures for measurement request and report. ADDITIONAL DETAIL: Need to copy TGk sections 11.10.0-11.10.5 and include tailored version of these clauses in clause 11 of Tgy draft. Without these procedures important issues including scheduling of measurement, prioritization of measurement tasks vs other services, off channel measurement scheduling, non-availability of measurement resources, non-continuous measurement duration, inability to perform requested measurement and other measurement issues will remain unspecified. No "standard" measurement behavior should be expected without complete measurement procedure specification.

Response Response Status U

REJECT. There are none of the issues commenter raises, no scheduling, prioritization or non-availability of measurement resources issues in 802.11y. TGk measurement functions are optional and within a BSS. 802.11y measurement functions are mandatory, and requests come from the enabling STA, which may be outside the BSS. Details of any modification to TGk text are missing from commenter's proposed change. Commenter is encouraged to provide a proposed resolution in sufficient detail so that the specific wording of the changes that will cause the negative voter to change his vote to "approve" can readily be determined.

<i>Cl</i> 17	<i>SC</i> 17.3.10.5	<i>P</i> 51	<i>L</i> 62	# 18
Kwak, Joseph		Individual		

Comment Type TR *Comment Status* R

Comment#132 from prior ballot: Received signal strength (RSSI) cannot be used for any quantitative and verifiable performance requirement. RSSI is not defined in base standard. CCA-ED performance (which relies on RSSI) is not defined in base standard and cannot be used for any new Tgy performance requirements.

SuggestedRemedy

Suggest that Tgy modify the TGk defined IPI measurments (in 12.3.5) to include new performance spec for accuracy of idle power measurement. Then Tgy should modify CCA-ED to rely on measurement of IPI values (in place of RSSI) for its specified and testable performance. Otherwise strike out all references to CCA-ED in the TGy draft. Repeating the errors of the past will only further degrade the baseline standard going forward. ADDITIONAL DETAIL: RSSI is not specified with any unit or accuracy. RSSI is unitless and may only be used to compare relative signal levels perceived within any single STA. It is meaningless to compare a STA's subjective and unitless RSSI to any objective CCA-ED threshold specified in dBm.

Response *Response Status* U

REJECT. This standard does not define regulatory tests, nor what must be demonstrated. We do not agree with commenter's presumption of what those FCC tests are, and what Canada will require.

5.13 ME 802.15.3 reaffirmation to RevCom

- Heile

Moved to forward 802.15.3 reaffirmation to RevCom, moved Heile, seconded Gilb

Vote: 16/0/0, motion is approved

802.15.3 Reaffirmation to RevCom

- Conditional Approval granted at March 2008 802 Plenary
- Decided instead to run two recirculations instead and seek unconditional approval at the July 2007 Plenary

Initial 15.3 Reaffirmation Sponsor Ballot Results

Ballots Sent:	106
Ballots Returned:	81
o Affirmatives	70
o Negatives with comment	4
o Negatives without comment	1
o Abstentions	6
o Total	81
No Response	25
Total Ballots	106

Percent Returned $(70 + 4 + 6) / 106 = 76\%$

Percent Affirmative $70 / (70 + 4) = 94\%$

Percent Abstentions $6 / 106 = 7\%$

Ballot closed March 18, 2008

15.3 Reaffirmation-Initial Ballot

- 5 comments received from the 4 disapproving voters (see next slide and/or Doc 15-08-0193-00-0000).
- 4 comments basically advocated that 802.15.3 be withdrawn because of failure to achieve “Broad Market Potential” and/or that 802.11 already “does it”, 1 comment objected to a lack of a Coexistence Assurance Document
- 4 comments were rejected with the following response or similar
 - 802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work.
- 1 comment was rejected because a coexistence plan is already included in Annex C of the Standard

15.3 Reaffirmation -1st Recirculation

Ballot Open Date: 01-Apr-2008

Ballot Close Date: 11-Apr-2008

RESPONSE RATE

This ballot has met the 75% returned ballot requirement.

106 eligible people in this ballot group.

73 affirmative votes

6 negative votes with comments

0 negative votes without comments

5 abstention votes

84 votes received = 79 % returned 5 % abstention

APPROVAL RATE

The 75% affirmation requirement is being met.

15.3 Reaffirmation –2nd Recirculation

Ballot Open Date: 11-Jun-2008

Ballot Close Date: 21-Jun-2008

RESPONSE RATE

This ballot has met the 75% returned ballot requirement.

106 eligible people in this ballot group.

76 affirmative votes

5 negative votes with comments

0 negative votes without comments

5 abstention votes

86 votes received = 81% returned 5% abstention

APPROVAL RATE

The 75% affirmation requirement is being met.

76 affirmative votes, 5 negative votes with comments, 81 votes = 93%
affirmative

802.15.3 Reaffirmation to RevCom

- No new “NO” votes and no new “NO” Voters were received in 2nd Recirc.
- WG Motion to forward 802.15.3 Reaffirmation to RevCom passed 51/0/0

802.15.3 Reaffirmation to RevCom

- Move that the EC grant approval to forward 802.15.3 Reaffirmation to RevCom

Mover: Heile

Second: Gilb

802.15.3 Reaffirmation to RevCom

Background Slides from March
2008 Conditional Approval

Conditional Approval for 15.3 Reaffirmation

Ballots Sent:	106
Ballots Returned:	81
o Affirmatives	70
o Negatives with comment	4
o Negatives without comment	1
o Abstentions	6
o Total	81
No Response	25
Total Ballots	106

Percent Returned $(70 + 4 + 6) / 106 = 76\%$

Percent Affirmative $70 / (70 + 4) = 94\%$

Percent Abstentions $6 / 106 = 7\%$

Ballot closed March 18, 2008

Conditional Approval for 15.3 Reaffirmation

- 5 comments received from the 4 disapproving voters (see next slide and/or Doc 15-08-0193-00-0000).
- 4 comments basically advocated that 802.15.3 be withdrawn because of failure to achieve “Broad Market Potential” and/or that 802.11 already “does it”, 1 comment objected to a lack of a Coexistence Assurance Document
- 4 comments were rejected with the following response or similar
 - 802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work.
- 1 comment was rejected because a coexistence plan is already included in Annex C of the Standard

Conditional Approval for 15.3 Reaffirmation

Comment	Proposed Change	Resolution Detail
<p>Industry has superseded the requirements through IEEE 802.11 and thus 802.15.3 is now obsolete. By Palm, Stephen</p>	<p>Rescind and delete 802.15.3.</p>	<p>802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work.</p>
<p>Industry has superseded the requirements through IEEE 802.11 and thus 802.15.3 is now obsolete. By Palm, Stephen</p>		<p>802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work.</p>
<p>A large (measured in units or dollars) WPAN consumer multimedia industry has not come about. Although the standard provides data rates high enough to satisfy a set of consumer multimedia industry needs for WPAN communications, that market has preferred to use other technology. The consumer multimedia industry uses other technology for their needs and many suppliers have been shipping high rate radios for five years. The 2007 versions of some 802.11 a/b/g radios in 130 nm technology have areas under 30 sq mm. The power consumption of all volume consumer radios is being continually improved, as process improvements are paid back in a short time. By Ecclesine, Peter</p>	<p>The standard should be submitted for withdrawal.</p>	<p>802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work. There is significant industry interest in this area and the 802.15.3 standard is well suited to this type of PHY.</p>
<p>I would like to know if this standard shall be accompanied with the coexistence assurance document. If it is the case, I would like to see the coexistence assurance document. If not, I would like to know the reason why the document is not needed. By Takagi, Masahiro</p>		<p>The 802.15.3 standard includes a coexistence assurance document in Annex C of the standard.</p>
<p>At the time the PAR & 5 Criteria for 802.15.3 were approved in 2000 it was asserted that the proposed standard had "broad market potential". It was similarly claimed in 2004 when the 802.15.3b PAR & 5 Criteria were approved that there was "broad market potential". It is now 2008, five years after 802.15.3 was ratified. At this time there appears to be no commercially available 802.15.3 compliant devices in existence, somewhat disproving the assertions made in the PARs and 5 Criteria. It now seems safer to say that there was "no market" for 802.15.3 based on a 2.4GHz radio. The lack of a market for 802.15.3 based equipment would suggest that the standard should be immediately withdrawn. A first counter argument to this conclusion is that elements of the 802.15.3 MAC are used by non standard systems, particularly those based on UWB PHYs. This may be true but this is not something that should be taken into account without a formal and approved liaison from another recognised SDO or similar organisation. A second counter argument is that 802.15 TG3c is using the 802.15.3 MAC as the basis of its work. This is a more compelling argument. However, it would be better for the 802.15.3c TG to not be constrained by the mistakes of the past. They do not need 802.15.3 to be reaffirmed for them to continue their work. Rather, they can draw on that work to create a new standard that is unconstrained by the earlier work, and certainly does not include the 2.4GHz radio. A third counter argument is that 802.15.3 products are available but that they are not obvious or not promoted as such. This may well be the case. However, it is incumbent of those "users" of the 802.15.3 standard to demonstrate the standard should be reaffirmed. By Andrew Myles</p>	<p>Withdraw 802.15.3 and 802.15.3b, unless it can be shown there is a "substantial market" for the standard today or a liaison is approved for a normative reference to 802.15.3 from another recognised SDO or similar organisation. In the event that 802.15.3 and 802.15.3b are withdrawn, encourage 802.15.3c to extract the useful elements into a new standard that is unconstrained by history.</p>	<p>802.15.3 provides capabilities that are different from 802.11. There is an active project, 802.15.3c, which is an amendment to 802.15.3 to add a millimeter wave PHY to the standard. This group regularly attracts more than 100 attendees to its meetings and is in the process of moving to working group letter ballot. 802.15.3c needs 802.15.3 to complete its work.</p>

Conditional Approval for 15.3 Reaffirmation

Motion in the WG: *the 802.15 WG requests the 802 EC grant conditional approval to forward 802.15.3-2003 to RevCom*

Moved: Pat Kinney

Second: Rick Alfvín

23-0-0

Conditional Approval for 15.3 Reaffirmation

Move that 802.15.3-2003 be conditionally approved for forwarding to RevCom upon successful completion of the Sponsor recirculation ballot

Moved: Bob Heile

Second: Arnie Greenspan

Vote: 15/0/0

5.14 ME Conditional approval of 802.21 to RevCom

- Gupta

Moved for conditional approval, under Clause 19, to forward of 802.21 to RevCom, moved Gupta, seconded Kraemer

Vote: 15/1/0, motion is approved

LMSC Motion

- To grant conditional approval, under Clause 19, to forward P802.21 to RevCom
 - Moved: Vivek Gupta
 - Seconded: Bruce Kraemer

 - Approve: 15
 - Disapprove: 1
 - Abstain: 0
- Result: Motion Passes

Conditional Approval Rules

Clause 19

Motions requesting Conditional Approval to forward where the prior ballot has closed shall be accompanied by:

- • Date the ballot closed
- • Vote tally including Approve, Disapprove and Abstain votes
- • Comments that support the remaining disapprove votes and Working Group responses.
- • Schedule for confirmation ballot and resolution meeting



Date the Ballot Closed

16 July, 2008



Stage	Open	Close
Sponsor Ballot	Aug 17, 2007	Sep 17, 2007
Sponsor Ballot Recirc #1	Dec 20, 2007	Jan 09, 2007
Sponsor Ballot Recirc #2	Feb 08, 2008	Feb 25, 2008
Sponsor Ballot Recirc #3	April 24, 2008	April 27, 2008
Sponsor Ballot Recirc #4	June 03, 2008	June 18, 2008
Sponsor Ballot Recirc #5	July 01, 2008	July 16, 2008

Vote Tally

Draft Ver	Approve	Disapprove	Total	Approval Ratio	Abstain	Ballots	Members	Return Ratio
D12.0	124	7	131	$124/131 = 94.63\%$	11	142	165	$142/165 = 86\%$

- In last re-circ SB-Recirc-5
 - 1 New Disapprove voter
 - Total 7 Disapprove Voters with Comments
 - *WG resolved comments and 1 voter (New Disapprove) changed to Approve*

So now:

No New Disapprove voters

Total 6 Disapprove voters with 11 outstanding comments towards Disapprove vote

- Draft will be updated and version D13 to be re-circulated for confirmation



Voting Results



	SB #1	Recirc-1	Recirc-2	Recirc-3	Recirc-4	Recirc-5	
						July-16	July-18
Draft	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Ballot Group	165						
Approve	71	103	112	115	121	124	125
Disapprove with Comments	43	21	15	12	7	7	6
Disapprove without Comments	2	0	0	0	0	0	0
Abstain	13	13	13	13	12	11	11
Total Ballots	129	137	140	140	140	142	142
Approval %	62%	83%	88%	90%	94%	94%	95%
Return %	78%	83%	84%	84%	84%	86%	86%

Comment Resolution

	SB	Recirc-1	Recirc-2	Recirc-3	Recirc-4	Recirc-5	Total
Draft	7.0	8.0	9.0	10.0	11.0	12.0	
Total comments Submitted	650	335	259	12	95	56	1407
Technical	523	234	190	11	55	43	1053
Editorial	127	101	69	1	40	13	454
Comments NOT part of Disapprove vote	189	181	95	11	51	40	513
Comments part of Disapprove vote	461	154	164	1	44	16	894



Comments that support the Remaining disapprove votes and Working Group responses

- *Attached*



Confirmatory Email Message from Voter Changing Vote

- *Dear Vivek,*
- *This is to inform you that I am changing my vote from Disapprove to Approve based on today's discussions in WG and the comment resolution disposition.*
- *Regards,
Farrokh Khatibi*



Schedule for Confirmation Ballot and Resolution Meeting

- July 28 Issue D13.0
- Aug 1 – Aug 16 Recirculation
- Sept 8 - 12 Comment Resolution,
if required at 802.21
#28, September meeting
at Big Island

802.21 WG Motion

- Motion: To authorize the WG Chair to request Conditional Approval for P802.21/D13 to be submitted to RevCom
 - Moved By: Les Eastwood
 - Seconded By: Bryan Lyles
 - Yes: 22
 - No: 0
 - Abstain: 3
- Result: Motion Passes

LMSC Motion

- To grant conditional approval, under Clause 19, to forward P802.21 to RevCom
 - Moved: Vivek Gupta
 - Seconded: Bruce Kraemer

 - Approve: 15
 - Disapprove: 1
 - Abstain: 0
- Result: Motion Passes

Comments that support the Remaining Disapprove votes and Working Group Responses

Andrew Myles 1/3

- **Category:** Technical, **Must be satisfied:** Yes
- **Comment:**
 - P245L45-65: Annex F: There is an entry for 802.11 LCI in the table, but this does not address new capabilities coming in 802.11v.
- **Proposed Change:**
 - Change "IEEE 802.11 LCI" to "IEEE 802.11"; add a new type as "LbyR with IEEE 802.11". Note that 802.11v supports both methods. Add the following: "Add SIP LbrR" with the following citation:
<http://www.ietf.org/internet-drafts/draft-polk-sip-location-get-00.txt>
- **Resolution Status:** Disagree
- **Resolution Detail:**
 - "The IETF draft is an individual submission in the IETF and is not a standard document yet.

Andrew Myles 2/3

- **Must be satisfied:** Yes, **Category:** Technical
- **Comment:**
 - pp247, line6-16: Annex D: Wireless - IEEE 802.11 there should be no revisions for this technology. Bands supported are not revisions in 802.11 specifications.
- **Proposed Change:**
 - Delete the text.
- **Resolution Status: Principle**
- **Resolution Detail:**
 - The revision column is for distinguishing the network with additional information such as the data rate (.3), frequency band (.11, .16), release version (3GPP). Rename the column as "Network Sub-type". The corresponding title and other references are updated as well.

Andrew Myles 3/3

- **Must be satisfied:** Yes **Category:** Technical
- **Comment:**
 - pp245, line45-65: Annex F: There is an entry for 802.11 LCI in the table, but this does not address new capabilities coming in 802.11v.
802.21 WG stated in the last comment resolution spreadsheet, "IEEE P802.11v is not. It is better to include future items at a future time (i.e, when 802.11v is approved)". This does not make sense to me since 802.21 WG was quite willing to cite 802.11u before it reach 75% approval rate.
- **Proposed Change:**
 - Change "IEEE 802.11 LCI" to "IEEE 802.11"; add a new type as "LbyR with IEEE 802.11". Note that 802.11v supports both methods.
- **Resolution Status:** Disagree
- **Resolution Detail:**
 - The WG will add in the corresponding type once the specification is approved.

- **Category:** Technical, **Must be satisfied:** Yes
- **Page:** 35 **Sub-clause:** 6.2.4 **Line #:**10
- **Comment:**
 - Registration should be mandatory for command and event services
- **Proposed Change:**
 - Change the last sentence of the clause to MIH Registration is mandatory for command and event services.
- **Resolution Status: Principle**
- **Resolution Detail:**
 - Registration is mandatory for the Command Service and the Information Service push mode. Registration is *not* mandatory for event service since there is already a subscription mode for event service.

Michael Montemurro 1/3

- **Category:** Technical
- **Page:**140 **Sub-clause:** 8.6.4.3 **Line #:**184
- **Comment:**
 - There is no normative description on how this message is use. I assume that these messages are generated by the MIS Server (?) to the MN after successful registration.
- **Proposed Change:**
 - Add text to describe how "MIS_Push_Information" is used. It could be as simple as "MIS_Push_Information" is generated by the MIIS Server(?) to a MN to update policy information following a successful registration. It can be generated at any time during the session.“
- **Resolution Status:** Agree
- **Resolution Detail:**
 - The registration information required for push is stated in sub-clause 6.2.4. For the message generation refer to the MIH_Push_Information.indication primitive definition (sub-clause 7.4.26.1 p132L59 onwards). Add the following text to sub-clause 7.4.26 "MIH_Push_Information is generated by the MIIS Server to update policy information following a successful registration. This primitive can be generated at any time during the life time of the registration."

Michael Montemurro 2/3

- **Must be satisfied:** Yes **Category:** Technical
- **Page:**155 **Sub-clause:** 8.2.4.3.3 **Line #:**155
- **Comment:**
 - The text for the Unsolicited Capability Discovery sub-clause describes a request/response mechanism for capability discovery. This sub-clause describes a solicited mechanism as a timer.
- **Proposed Change:**
 - Either change the title of the clause to accurately describe the behavior or combine the clause with clause 8.2.4.3.4
- **Resolution Status:** Agree
- **Resolution Detail:**
 - The request and response mechanism is removed from the sub-clause 8.2.4.3.3. Apply the contribution <http://mentor.ieee.org/802.21/file/08/21-08-0220-03-0000-mih-capability-discovery.doc>.

Michael Montemurro 3/3

- **Must be satisfied:** Yes **Category:** Technical
- **Page:** 35 **Sub-clause:** 6.2.4 **Line #:** 14
- **Comment:**
 - The text indicates that Registration is mandatory for "MIIS" push mode. There previously was text in this sub-clause to indicate that Registration is mandatory for the event service and command service to resolve one of my comments. However that change was reverted in a subsequent comment resolution.
- **Proposed Change:**
 - Modify the text to state that registration is mandatory for the command service, the event service, and the information service "push mode"
- **Resolution Status: Principle**
- **Resolution Detail:**
 - The registration is mandatory for the Command Service and the Information Service push mode. Registration is **not** mandatory for event service since there is already a subscription mode for event service.



Clint Chaplin 1/1



- **Category:** Technical **Page:**32 **Sub-clause:** 5.7.2 **Line #:**23
- **Comment:**
 - "8917" The Ethertype is in Hex
- **Proposed Change:**
 - "89-17 (value in hex)"
- **Resolution Status: Principle**
- **Resolution Detail:**
 - Apply with "0x89 0x17"

Tony Jeffree 1/2

- **Must be satisfied:** Yes **Category:** Technical
- **Comment:**
 - In your (revised) response to my comment #143 on recirc 2 you state: "The PICS Proforma has been developed w.r.t the following references: [1] ITU-T Recommendation X.290 (1995), OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - General concepts. and [2] ITU-T Recommendation X.296 (1995), OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Implementation conformance statements." Both recommendations refer to (protocol specification) conformance clauses, which is a concept that is discussed, defined, and mandated in Recommendation X.291 (1995) for "Each base specification, which specifies an OSI protocol, abstract syntax, encoding rules, or information object..." (Clause 6 of Rec X.291). If you are claiming that the PICS proforma has been developed with respect to those two references then: (a) the list of references is incomplete, because X.291 is also part of the story, as you are developing an OSI protocol; and (b) your specification is incomplete, as it does not include a protocol specification conformance clause.
- **Proposed Change:**
 - Add a reference to X.291 in Clause 2 of the draft, and follow its guidance (in Clause 6 and elsewhere) by developing a protocol specification conformance clause.
- **Resolution Status:** Disagree
- **Resolution Detail:**
 - Neither IEEE nor IEEE 802 require a PICS Proforma. Neither IEEE or IEEE 802 provide any guidance for its creation. Therefore the only authoritative reference for the creation of a PICS Proforma is ITU-T X.296 (ISO/IEC 9646:7). Following its guidance only X.290 and X.296 are required as per 8.2.4.

- **Must be satisfied:** Yes **Category:** Technical
- **Comment:** In your (revised) response to my comment #145 on the second recirc you state: "The MIH Protocol is interoperable at both L2 and L3. At L2 the MIH Protocol uses an ethertype as specified by MIH Protocol Ethertype to achieve interoperability. The IEEE 802.21 WG has applied for this ethertype with the IEEE ethernet assignment body. At L3 the MIH Protocol frames are encapsulated within IP frames using a transport protocol such as UDP/TCP/SCTP. Please refer to subclause 5.7. for more details on transport considerations. The protocol behavior is specified in clause 8." Firstly, if you haven't yet been allocated an Ethertype, then the specification is incomplete and cannot be published; please note that this isn't simply an administrative/editorial issue, as the Ethertype allocation process involves technical vetting of the protocol specification by the IEEE RA's consultant. Secondly, the specification of the protocol doesn't appear to make any clear statements about how L2 addressing is used "...when destination MIHF ID is not known to a sending MIHF" (8.3.1.) The following sentence in 8.3.1 states: "When MIH protocol message with broadcast MIHF ID is transmitted over data plane, the MIH protocol message is broadcasted over either L2 or L3 data plane." If what you are suggesting is that the protocol makes use of the broadcast MAC address (all F's), then think again; this is not a great idea in a LAN environment, as the scope of that address is literally every station on the LAN. No self-respecting protocol specification uses the broadcast MAC address these days. If you mean to use one or more of the reserved group addresses specified in Clause 8 of IEEE Std 802.1Q that have defined transmission scopes within LAN environments, then you'd better specify which addresses you plan to use, and in what circumstances.
- **Proposed Change:**(1.) Specify the Ethertype value in the draft. This is a pre-(not post-) condition for getting the standard approved, for the reasons stated in the comment. (2.) Specify, in detail, how individual and group MAC addressing is used in support of this protocol.
- **Resolution Status: Principle**
- **Resolution Detail:** The ethertype value (8917) as assigned by IEEE Registration Authority has been added in the draft (clause 5.7.2). The group MAC address (01-80-C2-00-00-0E) as specified in 802.1aj has been included in the draft (clause F.3.11) and its usage has been specified in sub-clause 8.2.4.3. Please refer to contribution <http://mentor.ieee.org/802.21/file/08/21-08-0220-03-0000-mih-capability-discovery.doc> for details.

Rich Siefert 1/1

- **Must be satisfied:** Yes **Category:** Technical
- **Page:**149 **Sub-clause:** 8.2.3.4 **Line #:**16
- **Comment:**
 - The MIH protocol relies on the underlying mechanisms (I.e., the lower layers) to provide fragmentation and reassembly. However, many such underlying technologies do not provide this function, e.g. IEEE 802.3.
- **Proposed Change:**
 - If fragmentation/reassembly is needed for proper operation of MIH, then it must be provided as a function within the protocol. If not, then eliminate all references to fragmentation, and ensure that the maximum message size (SDU) submitted by MIH to any allowable lower layer does not exceed the maximum frame size supported by those layers (i.e., determine an acceptable maximum SDU that will work with any allowable MAC).
- **Resolution Status:** Principle
- **Resolution Detail:**
 - A fragmentation and reassembly mechanism has been provided as part of protocol for use with underlying technologies such as 802.3

5.15 ME Approval of 802.1ap to sponsor ballot

- **Jeffree**

Moved to forward 802.1ap to sponsor ballot, moved Jeffree, seconded Law

Vote: 16/0/0, motion is approved

MOTION

- 802.1 requests approval of the EC to submit 802.1ap for Sponsor ballot.
- Proposed: haddock Second: parsons
- For: 48 Against: 0 Abstain: 2
- EC proposed: Jeffree Second: Law

Supporting material – P802.1ap

- WG ballot closed 10th July
- Tally: Yes 31 No 0 Abstain
- 100% approval; 60% response
- No outstanding negative comments
- The draft will be edited to include OID arcs for the MIBs (standard procedure when a draft goes to SB)

5.16 ME Approval of 802.11w to sponsor ballot

- Kraemer

Moved to submit 802.11w D6.0 for sponsor ballot, moved Kraemer, seconded Hawkins

Vote: 16/0/0, motion is approved

Agenda#: 5.17

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: HAWKINS

Move to submit 802.11w D6.0 for Sponsor Ballot

TG Vote on the motion: 11-0-0

WG Vote on the motion: 31-0-0 (May 08) Affirmed: 44-0-6 (July 08)

(Closing Plenary votes)

TGw had a 97.08% approval on the last WG Recirculation Ballot (LB128). 8 of 427 voters remaining with NO votes. 5 of these have stopped IEEE 802.11 WG participation. The other 3 have not answered e-mail.

Approve: 15

Do Not Approve:0

Abstain:0

IEEE P802.11
Wireless LANs

802.11w May Sponsor Ballot Report**Date:** 2008-05-16**Author(s):**

Name	Affiliation	Address	Phone	email
Jesse Walker	Intel Corporation	2111 NE 25 th Avenue JF3-206, Hillsboro, OR, USA 97124	+1-503-712-1849	jesse.walker@intel.co m

Abstract

This document reports the results of the WG letter ballots on IEEE P802.11w. This report is to be submitted to the IEEE 802 Executive Committee to support the request to forward IEEE P802.11w to Sponsor Ballot.

1. Introduction and Summary

This report documents to the IEEE 802 Executive Committee all the WG letter ballots for IEEE P802.11w, including voting results, comment statistics, and unsatisfied negative comments.

The size of the IEEE P802.11w voter pool is 427. The final results for the Working Group balloting for IEEE P802.11w are 328 voted, 266 yes, 8 no, 54 abstained, for a 97.08% approval rate, a return percentage of 76.81%, and an abstain percentage of 16.46%.

There are 25 unsatisfied required negative comments from eight remaining negative voters, none from the latest latter ballot; all 25 unsatisfied negative comments are previously recirculated but whose resolution the commentors have not accepted. None of the voters with unsatisfied negative comments from prior have responded to our efforts to learn whether the resolutions adopted by IEEE 802.11 Task Group w satisfy their objections.

Based on results of the letter ballots on IEEE P802.11w as documented in this report, we are asking for approval from the IEEE 802 Executive Committee to forward IEEE P802.11w to sponsor ballot.

Agenda Items and motions requesting approval to forward when the prior ballot has closed shall be accompanied by:

- Date the ballot closed
- Vote tally including Approve, Disapprove and Abstain votes
- Comments that support the remaining disapprove votes and Working Group responses.
- Schedule for recirculation ballot and resolution meeting.

Letter Ballot 88 was a vote on Draft 1.0, and ran for 40 days starting 10 October 2006, and ending on 19 November 2008. 295 voted, 202 yes, 34 no (452 comments received), 59 abstained, 85.59% approval rate.

Letter Ballot 102 was a vote on Draft 2.0, and ran for 15 days starting 17 April 2007, and ending on 5 May 2007. 317 voted, 227 yes, 29 no, 61 (751 comments received), abstained, 88.67% approval rate.

Letter Ballot 114 was a vote on Draft 3.0, and ran for 15 days starting 4 October 2007, and ending on 19 October 2007. 325 voted, 245 yes, 21 no (146 comments received), 59 abstained, 92.10% approval rate.

Letter Ballot 117 was a vote on Draft 4.0, and ran for 15 days starting 10 October 2007, and ending on 19 November 2008. 326 voted, 245 yes, 21 no (87 comments received), 60 abstained, 92.10% approval rate.

Letter Ballot 121 was a vote on Draft 5.0, and ran for 15 days starting 5 February 2008, and ending on 20 February 2008. 328 voted, 259 yes, 14 no (52 comments received), 55 abstained, 94.87% approval rate.

Letter Ballot 128 was a vote on Draft 6.0, and ran for 15 days starting 3 April 2008, and ending on 18 April 2008. 328 voted, 266 yes, 8 no (29 comments received), 54 abstained, 97.08% approval rate.

The following table summarizes the no voters with unsatisfied negative comments:

Voter	LB 88	LB 102	LB 114	LB 117	LB 121	LB 128	Total
Keith Amann		3					3
John Bahr	1						1
Kaberi Banerjee	4						4
Pat Calhoun	1						1
Roger Durand	4						4
Jon Edney	1						1
Stephen Palm	5			4			9
Ning Zhang				2			2
Total	16	3		6			25

The following details each of the remaining unsatisfied comments:

Cl 03 SC 3 P1 L 41-4 # 1097
Banerjee, Kaberi Individual

Comment Type TR Comment Status R

Define robust management frame exchange as a part of clause 3, as disassociation, deauthentication and management action frames; current definition seems

SuggestedRemedy

Response Response Status U

REJECT. The full definition is already defined in 5.4.3.7. This conforms to the customary usage in the base standard

Cl 05 SC 5.4.3.2 P3 L 25 # 1092
Banerjee, Kaberi Individual

Comment Type TR Comment Status A

Define Disconnect Hash Value, before using the term.

SuggestedRemedy

Response Response Status U

ACCEPT IN PRINCIPLE. Resolved by submission 11-06-1932r0

Cl 05 SC 5.4.3.7 P4 L 25-2 # 1093
Banerjee, Kaberi Individual

Comment Type TR Comment Status R

EAPOL frame exchanges to perform the IGTK transfer and installation are done via RSNA protected frames ?Please clarify

SuggestedRemedy

Response Response Status U

REJECT. This question is more relevant to the base 802.11 standard, whereby EAPoL frames are protected by the 4-Way Handshake or the Group Key Handshake to distribute group keys. TGw protection does not change this definition.

Cl 05 SC 5.8.2.1 P10 L 8 # 1194
Palm, Stephen Individual

Comment Type TR Comment Status R

Is "Robust management Frame" a state? If so, where is the bitfield?

SuggestedRemedy

Clarify how to "enable"

Response Response Status U

REJECT. We cannot correlate the comment with the cited page and line

Cl 07 SC 7.3.2.27 P10 L 24 # 1084
Bahr, John Individual

Comment Type TR Comment Status A

Draft is not complete: "{edNOTE : TBD}"

SuggestedRemedy

Determine the Element ID field value.

Response Response Status U

ACCEPT IN PRINCIPLE. An editorial note has been added to note that a value must be assigned by ANA, until such time, TBD remains.

Cl 07 SC Table 9 P8 L # 1099
Banerjee, Kaberi Individual

Comment Type TR Comment Status R

TBD in Table 9

SuggestedRemedy

Response Response Status U

REJECT. ANA, not TGw, must assign this code (Note: comment refers to Table 19, not Table 9)

Cl 08 SC 8.3.3.3.2 P 18 L 20 # 47
Zhang, Ning Individual

Comment Type TR Comment Status A

Since the text now states that the Order bit will be "set to 1 otherwise", this will not allow interoperation with non-HT STAs. Such STAs which are currently compliant to the 2007 std will NOT set the Order bit in the frame control field and will NOT set it to 1 in the AAD.

SuggestedRemedy

Change "set to 1 otherwise" to "unmasked otherwise".

Response Response Status U

ACCEPT IN PRINCIPLE. The text has been introduced by TGn which is no longer tracked by TGw and thus, the offending text no longer exists in TGw.

Cl 08 SC 8.3.3.3.2 P 23 L 52 # 53
Palm, Stephen Individual

Comment Type TR Comment Status A

Presence or absence of a field is not a sufficient criteria for setting the mask

SuggestedRemedy

Make dependent on the value of a field

Response Response Status U

ACCEPT IN PRINCIPLE. The comment is insufficient to decipher wha "field" is the offending one as the page and line number do not correspond to clause 8.3.3.3.2 and several fields are masked in that clause. If it is in reference to the Order bit, see CID 44.

Cl 08 SC 8.3.4.2 P 20 L 5 # 73
Amann, Keith Individual

Comment Type ER Comment Status R

Frame formats are defined in clause 7. The inclusion of this frame format here is confusing.

SuggestedRemedy

Move the frame format definition to clause 7 with the other frame formats.

Response Response Status U

REJECT. The BIP encapsulation is not defining a new frame format much like TKIP (8.3.2.2) and CCMP (8.3.3.2) as they also do not define a new frame format but rather describe how security is added to the existing data or management frame format.

Cl 08 SC 8.3.4.3 P 20 L 1 # 1200
Palm, Stephen Individual

Comment Type TR Comment Status A

Why mention 802.11 here?

SuggestedRemedy

Delete "802.11", add a better modifier

Response Response Status U

ACCEPT IN PRINCIPLE. Remove "IEEE 802.11"

Cl 08 SC 8.3.4.3 P 20 L 3 # 1201
Palm, Stephen Individual

Comment Type TR Comment Status R

Why mention 802.11 here?

SuggestedRemedy

Delete "802.11", add a better modifier

Response Response Status U

REJECT. The same language is already used for CCMP in the base standard

Cl 08 SC 8.3.4.3 P 21 L 32 # 58
Zhang, Ning Individual

Comment Type ER Comment Status A

To be consistent with figure 8-17, I recommend removing the muted bits from Figure 8-19b, Remove the muted bits.

SuggestedRemedy

ACCEPT

Response Response Status U

ACCEPT.

CI 08 SC 8.3.4.4 P 27 L 25 # 61
 Palm, Stephen Individual
 Comment Type TR Comment Status A
 By monotonically increasing do you mean increment by one?
 SuggestedRemedy
 Clarify
 Response Response Status U
 ACCEPT IN PRINCIPLE. This usage is consistent with existing 802.11-2007. As mentioned in the same clause, the receiver will check for the new SeqNo to be higher than the one received in an earlier frame.

CI 08 SC 8.3.4.4 P 27 L 25 # 62
 Palm, Stephen Individual
 Comment Type TR Comment Status A
 How is wrap around handled?
 SuggestedRemedy
 Clarify
 Response Response Status U
 ACCEPT IN PRINCIPLE. Insert the text on page 21 line 54: "The transmitter may refresh the IGTK with a new sequence number at any time."

CI 08 SC 8.3.4.4 P 27 L 25 # 63
 Palm, Stephen Individual
 Comment Type TR Comment Status A
 Should the "replay" in line 26 and subsequent also be replaced with Sequence as in the previous line? The field operations seem to be a jumble in this paragraph
 SuggestedRemedy
 Clarify
 Response Response Status U
 ACCEPT IN PRINCIPLE. See CID 60

CI 08 SC 8.4.1.2.1 P 22 L 38 # 1202
 Palm, Stephen Individual
 Comment Type TR Comment Status R
 Why mention 802.11 here?
 SuggestedRemedy
 Delete "802.11", add a better modifier
 Response Response Status U
 REJECT. This modifier is already in the base standard, and TGw is not changing the nomenclature used in the based standard

CI 08 SC 8.5.1.3A P 29 L 27 # 74
 Amann, Keith Individual
 Comment Type TR Comment Status A
 If I interpret the text correctly here the IGTK is nothing more that a random value. Should there be some rules around this to prevent having the same random value used as a seed every time?
 SuggestedRemedy
 Add normative text to more clearly define the key initialization/derivation rules for the IGTK. I understand that this clause was not updated, and that the task group may elect to reject this comment, but I think that it is important to clarify the intent here to ensure that this key is acceptable.

Response Response Status U
 ACCEPT IN PRINCIPLE. Replace the first sentence in 8.5.1.3A with "The Authenticator shall select the IGTK as a random value each time it is generated." Annex H.5 already provides guidance on generating and selecting random values.

CI 08 SC 8.5.4 P 22 L # 331
 Edney, Jon Individual
 Comment Type TR Comment Status R
 There is no mechnism specified to enable a station to reconnect to the network in the event that it unexpectedly loses key state, such as due to a reboot while out of range of the AP.
 SuggestedRemedy
 Consider mechanisms to avoid deadlock
 Response Response Status U
 REJECT. 802.11i requires the AP to flush its PTK for the STA when receiving an associate request (yes; this is a DoS problem, but it is what 802.11i says)

Cl **General** SC P L # 454
 Durand, Roger Individual

Comment Type **TR** Comment Status **R**

The disassociate or dis auth is often legitimately used to re-sync or start over a client that has gotten it's present state "lost" thru any of several scenarios that could happen on either end to include a cold or partial re-boot of either the client or the AP. It is unclear how to communicate to a client to "start everything over" if the frame becomes protected.

SuggestedRemedy

Either we allow a finite number of non-protected de-auth/dis-assoc and we somehow limit it's use (say once every x minutes) or we need to create a new frame that communicates the need to reset state or that one end has recently reset (and this command may need to be time limited to usage of once every x minutes).

Response Response Status **U**

REJECT. This feature is not supported by the base standard when security is used. 8.4.10 requires that the security association is deleted upon receiving a disassociate or deauthenticate. TGw is not authorized to change the behavior for data frames.

Cl **General** SC P L # 453
 Durand, Roger Individual

Comment Type **TR** Comment Status **R**

The document is incomplete or unclear relative to providing management frame protection for each access control scenario, how does this happen when no radius server is present or specifically when a pre-shared key method is the network scenario.

SuggestedRemedy

Separately call out the key creation and exchange mechanism for each access control scenario so as to create an 11w protected network, in particular when using a pre-shared key.

Response Response Status **U**

REJECT. No changes are made to the PMK by 802.11w; 802.11w uses the same PMK for management as for unicast data. 802.11i uses PSK as a PMK. The only new key added is the IGTK, which is used to protect broadcast management frames. It is assigned by the AP, just as the GTK is, not derived from the PMK.

5.17 ME Approval of response to 3 interpretation requests

- Kraemer

Move to approve 802.11 working group responses to the 3 interpretation requests as described in Doc 11-08-093r0 as the official response and request approval to publish them as appropriate. Moved Kraemer, seconded Marks.

Vote: 15/0/0, motion is approved

Agenda#: 5.18

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: MARKS

Move to approve IEEE 802.11 Working Group responses to the 3 Interpretation Requests as described in Doc 11-08-0930r0 as the official response and request approval to publish them as appropriate.

TG Vote on the motion: Individual response votes: 5-0-0; 3-0-1; 3-0-2

WG Vote on the motion: 40-1-9

Approve: 15

Do Not Approve:0

Abstain:0

3 Responses to Interpretations for July 2008

Date: 2008-07-18

Authors:

Name	Affiliations	Address	Phone	email
Jon Rosdahl	CSR	Highland, UT	+1 801-376-6435	jrosdahl@ieee.org

Interpretation Request #1

- **Introduction:**
- **Service Providers use Multi-SSID many ways:**
 - extra SSID for particular use-case, device-class, WEP...
 - very important for non-enterprise (hotspots, homes...)
- **But...There are interop issues**
 - Beacon timing
 - Some devices cannot cope with a variable or very-short beacon interval
 - no problems if 50mSec apart, BUT $t=SIF$ gives problems with some devices !
 - Needs defining for multi-SSIDs
 - All clients need to cope with such timing
 - Spacing beacons by just SIFS/DIFS
- **Question:**
- **If an AP device is generating multiple BSSID signals what is the proper spacing between those SSIDs?**

Interpretation Request Response #1

- **The IEEE 802.11-2007 only defines one MAC/PHY pair as a STA. When a product virtualizes multiple STAs within the same physical device, the interaction of the virtual STAs are currently outside the scope of the standard, however the use of multiple BSSID/SSID functionality is currently being defined.**
- **The commenter (and others interested) are invited to come and participate with the 802.11 WG.**

Interpretation Request #2

- **Section 7.3.1.17 of [1] says that the Max SP Length subfield of the QoS Info field is reserved when all four U-APSD flags are set to 0. Section 7.1.1 of [1] says that reserved fields and subfields are set to 0 upon transmission and are ignored upon reception.**
- **If a non-AP STA sets all four U-APSD flags to 0 in the QoS Info field in the QoS Capability IE in the Association Request, and then uses an ADDTS Request to set up a delivered-enabled TS (and also sets up a trigger-enabled TS -- perhaps the same TS), how many buffered MSDUs and MMPDUs may the AP deliver to this non-AP STA during an SP triggered by this non-AP STA?**

Interpretation Response #2

- **The standard does not specify, when the bits are set to 0, a maximum limit to how many MSDU or MMPDUs are buffered by an AP. Therefore the maximum number would be AP implementation dependent value and would be dependent on the amount of traffic buffered at the AP (See table 7-25 bit 5-6). When Bit 5 and 6 are not set to 0, then a limit is prescribed.**

Interpretation Request #3

- **An interpretation is requested on the following:**
- **Section 7.3.2.20 of [1] says that the Minimum PHY Rate field of the TSPEC IE is “the desired minimum PHY rate to use for this TS, in bits per second, that is required for transport of the MSDUs belonging to the TS in this TSPEC.”**
- **What are the exact semantics of this field?**
- **Does this need to correspond to an operational rate of the AP which the non-AP STA can transmit at, for a TS with an uplink component (vice-versa for a TS with a downlink component)? [*]**
- **If not, must it be a rate supported by the PHY being used (though perhaps not a rate supported by the non-AP STA and/or AP)?**
- **If not, must it be less than or equal to the highest rate supported by the PHY being used? Or the highest rate supported by the non-AP STA and AP?**
- **And if the answer to question marked with [*] is no, then how is K.2.2 to be used?**

Interpretation Request #3-- Example

- **An example may help. Say we're using 802.11a, the AP supports 6, 12, 24 and 48 Mbps, and the STA supports 6, 9, 12 and 24 Mbps (here "supports" means both tx and rx). Which of the following values would be valid values in the Minimum PHY Rate field for an uplink TSPEC, and for those values, what value would be used for to compute the MPDUEXchangeTime in section K.2.2 of [1]?**
- **24 000 000 (supported by both STAs)**
- **9 000 000 (not supported by AP)**
- **48 000 000 (not supported by non-AP STA)**
- **18 000 000 (valid .a rate, but not supported by either STA)**
- **36 000 000 (valid .a rate, but not supported by either STA and higher than non-AP STA's highest rate)**
- **27 000 000 (valid .a rate, but only in "half-clocked" operation)**
- **54 000 000 (highest rate on .a; not supported by either STA)**
- **1 111 111 111 (not a valid rate for any PHY; higher than highest rate on any PHY)**
- **111 111 111 (not a valid rate for any PHY; higher than highest rate on .a)**
- **11 111 111 (not a valid rate for any PHY, but in .a rate range)**
- **1 111 111 (not a valid rate for any PHY; lower than lowest rate on .a)**
- **111 111 (not a valid rate for any PHY; lower than lowest rate on any PHY)**
- **11 000 000 (not a valid .a rate, but valid .b rate and in .a rate range)**
- **1 000 000 (not a valid .a rate and not in .a rate range, but valid .b rate)**

Response for Interpretation Request #3

- **In clause 7.3.2.30, the Minimum PHY Rate field definition:**
 - The Minimum PHY Rate field is 4 octets long and contains an unsigned integer that specifies the desired minimum PHY rate to use for this TS, in bits per second, that is required for transport of the MSDUs belonging to the TS in this TSPEC²¹.
 - Footnote 21: This rate information is intended to ensure that the TSPEC parameter values resulting from an admission control negotiation are sufficient to provide the required throughput for the TS. In a typical implementation, a TS is admitted only if the defined traffic volume can be accommodated at the specified rate within an amount of WM occupancy time that the admissions control entity is willing to allocate to this TS.

Response for Interpretation Request #3 (cont)

- **The standard does not require the use any of the Operational Rates for the value of the Minimum PHY Rate.**
- **K2.2 is part of an Informative Annex, and is provided to assist implementers, but it does not specify required functionality.**

5.18 ME Approval of 802.15.4c to sponsor ballot

- Heile

Moved to forward 802.15.4c to sponsor ballot, moved Heile, seconded Gilb

Vote: 15/0/0, motion is approved

802.15.4c to Sponsor Ballot

- Final results of WG Letter Ballot Recirculation:

ELIGIBLE VOTERS:	174
VOTED	144 (82.76%)
YES	108 (100.00%)
ABSTAIN	36 (25.00%)
NO	0 (0%)

- WG Motion to request approval to forward to Sponsor Ballot passed 47/0/4

802.15.4c to Sponsor Ballot

- Move that EC grant approval to start the Sponsor Ballot on Draft P802.15.4c/D4

Mover: Heile

Second: Gilb

5.19 ME Conditional approval of 802.15.4d to sponsor ballot

- Heile

Moved for conditional approval, under Clause 19, to forward 802.15.4d to sponsor ballot, moved Heile, seconded Gilb

Vote: 15/0/1, motion is approved

802.15.4d to Sponsor Ballot-Conditional

- Results of Initial WG Letter Ballot
 - Yes: 102 (98.08%)
 - No: 2 (1.92%)
 - Abstain: 36 (25.71%)
 - Total voting=140
 - % return=83.33%
- Zhongding Lei (I2R) had 1 technical comment which he withdrew after Clint explained the narrow bandwidth available.
- James Gilb (SIBEAM) had 5 technical comments, all of which were accepted.
- Expect recirculation to be completed by the Sept 2008 Interim and to be 'clean'
- Sponsor Ballot would be scheduled to start mid September 2008
- WG motion to request conditional approval passed 43/1/0

802.15.4d to Sponsor Ballot-Conditional

Move that 802.15.4d, Draft 3, be conditionally approved to begin Sponsor Ballot upon successful completion of the Working Group recirculation ballot

Moved: Heile

Second: Gilb

Vote:

5.20 ME Conditional approval of 802.15.5 to sponsor ballot

- Heile

Moved for conditional approval, under Clause 19, to forward 802.15.5 to sponsor ballot, moved Heile, seconded Gilb

Vote: 16/0/0, motion is approved

802.15.5 to Sponsor Ballot-Conditional

- Results of Primary WG Ballot
 - Yes: 81 (95.29%)
 - No: 4 (4.71%)
 - Abstain: 23 (21.30%)
 - Total voting=108
 - % return=67.50%
- Comments of the 4 'NO' voters were accepted

802.15.5 to Sponsor Ballot-Conditional

- Results of First Recirculation
 - Yes: 95 (97.94%)
 - No: 2 (2.06%)
 - Abstain: 27 (21.77%)
 - Total voting=124
 - % return=77.50%
- One “NO” voter was new and one was a repeat with some new comments.
- Both ‘NO’ voters have accepted the comment resolutions
- We expect the recirculation in progress to be clean and plan to start Sponsor Ballot Aug 8
- WG passed motion to request Conditional Approval 38/0/4

802.15.5 to Sponsor Ballot-Conditional

Move that 802.15.5, Draft 2, be conditionally approved to begin Sponsor Ballot upon successful completion of the Working Group recirculation ballot

Moved: Heile

Second: Gilb

Vote:

5.21 ME Approval of 802.16h to sponsor ballot

- Marks

Moved to forward 802.16.h to sponsor ballot, moved Marks, seconded Hawkins

Vote: 16/0/0, motion is approved

2008-07-17

IEEE 802.16-08/038r1

P802.16h to Sponsor Ballot

17 July 2008

Date the ballot closed: **10 July 2008**

Stage	Open	Close	
WG Ballot	5 Oct	4Nov	2007
WG Ballot Recirc #1	19 Feb	9 March	2008
WG Ballot Recirc #2	7 Apr	2 May	2008
WG Ballot Recirc #3	23 May	7 Jun	2008
WG Ballot Recirc #4	25 Jun	10 Jul	2008

Vote tally including Approve, Disapprove and Abstain votes

- 206 Approve 99%*
- 2 Disapprove 1%
- 60 Abstain 22.4%

Return 80%

- No comments or votes received in the last recirculation
- *Approve ratio: 100%, excluding negative votes without comments

Comments that support the remaining disapprove votes and Working Group responses

- Zero outstanding Disapprove comments
- The two disapprove votes were with no comments

802.16 WG Motion

802.16 Opening Plenary: 14 Jul 2007:

Motion: To accept IEEE P802.16h/D7 as a Working Group draft and request approval from the IEEE 802 Executive Committee to forward IEEE P802.16h/D7 for Sponsor Ballot.

- Moved: Mariana Goldhamer
- Seconded: Brian Kiernan
- Approved 82-0-8.

5.22 ME 802.16h PAR extension to NESCOM

- Marks

Moved to forward 802.16h PAR extension to NesCom, moved Marks, seconded Hawkings

Vote: 16/0/0, motion is approved

[Modify this Extension Request](#)
[Submit to NesCom](#)
[Delete this Extension Request](#)
[Print](#)

Extension Request for P802.16h, Approved on 2004-12-08
Submitter Email: r.b.marks@ieee.org Change Submitter Email
PAR Expiration Date: 2008-12-31
Number of Previous Extensions Requested: 0 Last Extension Approval Date: 0000-00-00
Number of Years being requested: 1
Sponsor: IEEE Computer Society/Local and Metropolitan Area Networks(C/LM) Chair: Paul Nikolich 18 Bishops Lane Lynnfield, MA 01940 US Email: p.nikolich@ieee.org
Working Group: Broadband Wireless Access Working Group(C/LM/WG802.16) Chair: Roger Marks 4040 Montview Blvd Denver, CO 80207 US Email: r.b.marks@ieee.org Reassign Working Group
Title: Standard for Local and Metropolitan Area Networks - Part 16: Air Interface for Fixed Broadband Wireless Access Systems - Improved Coexistence Mechanisms for License-Exempt Operation Amendment Scope: This amendment specifies improved mechanisms, as policies and medium access control enhancements, to enable coexistence among license-exempt systems based on IEEE Standard 802.16 and to facilitate the coexistence of such systems with primary users. Purpose: This amendment provides measures to increase the efficiency and robustness of license-exempt operation.
Do the title, scope and purpose match that of the current draft? Yes
Why is an extension required? The WG has approved the last draft - P802.16h/D7 – with an approval ratio of 99% and is ready to move to Sponsor Ballot. However, it is difficult to ensure that Sponsor Ballot will conclude by the time the current PAR expires.
Document Development Information: <ol style="list-style-type: none"> What date did you begin writing the first draft? 2005-07-11 How many people are actively working on the project? 10 How many times a year does the working group meet: <ol style="list-style-type: none"> In person? 6 Via teleconference? 3 How many times a year is a draft circulated to the working group via electronic means? 6 What percentage of the Draft is stable? 95% How many significant work revisions has the Draft been through? 7
Project Plan: When will IEEE sponsor balloting begin? 0000-00-00 When do you estimate that the final IEEE Sponsor ballot will be completed? 2009-02-28 When do you expect to submit the proposed standard to RevCom? 2009-03-13
Adoption: Will this document be adopted by another source? No Explanation:

Contact the [NesCom Administrator](#)

5.23 ME Conditional approval of 802.16j to sponsor ballot

- Marks

Moved for conditional approval, under Clause 19, to forward 802.16j to sponsor ballot, moved Marks, seconded Gupta

Vote 16/0/0, motion is approved

Supporting report to EC for request of conditional approval to initiate sponsor ballot on P802.16j

IEEE 802.16 Presentation Submission Template (Rev. 9)

Document Number:

IEEE 802.16-08/039r1

Date Submitted:

2008-07-17

Source:

Mike Hart, Mitsuo Nohara, Jung Je Son, Peiying Zhu
UK Broadband, KDDI, Samsung, Nortel Networks

Voice:

E-mail: mike.hart@ukbroadband.com

Venue:

Session #56

Base Contribution:

None

Purpose:

Report to the EC on the status of LB28 in support of request for conditional approval to initiate sponsor ballot on the IEEE P802.16j draft.

Notice:

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Patent Policy:

The contributor is familiar with the IEEE-SA Patent Policy and Procedures:

<<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>> and <<http://standards.ieee.org/guides/opman/sect6.html#6.3>>.

Further information is located at <<http://standards.ieee.org/board/pat/pat-material.html>> and <<http://standards.ieee.org/board/pat>>.

Rules

- Motions requesting conditional approval to forward where the prior ballot has closed shall be accompanied by:
 - Date the ballot closed
 - Vote tally including Approve, Disapprove and Abstain votes
 - Comments that support the remaining disapprove votes and Working Group responses.
 - Schedule for confirmation ballot and resolution meeting.

Date the Ballot Closed

7 July 2008

Stage	Open	Close
Letter Ballot 28	10 Aug 2007	9 Sept 2007
Letter Ballot Recirc 28a	24 Dec 2007	14 Jan 2008
Letter Ballot Recirc 28b	29 Feb 2008	15 Mar 2008
Letter Ballot Recirc 28c	25 Apr 2008	9 May 2008
Letter Ballot Recirc 28d	6 June 2008	7 July 2008

Vote tally including Approve, Disapprove and Abstain votes

- Approve: 287
- Disapprove: 4
 - only 1 with outstanding comments
 - The remaining 3 have no comments.
- Abstain: 22
- Return ratio: 89.4%
- Approve ratio: 98.6%
(Approve ratio: 99.7% [excluding Disapprove without Comments])

Comments that support the remaining disapprove votes and Working Group responses

- LB 28:
 - 1 outstanding comments, *comment was accepted verbatim*
- LB recirc 28a:
 - No outstanding comments
- LB recirc 28b:
 - No outstanding comments
- LB recirc 28c:
 - No outstanding comments
- LB recirc 28d:
 - 1 outstanding comment (received very late)

Comment #1 that support the remaining disapprove votes and Working Group responses

- Comment (No. **0908 in LB28**)

Access channel utilizes frequency diversity to improve link performance. Same technique would also be valuable to improve link performance on the AMC subchannels. This feature should be added.

- Remedy

Contribution C802.16j-07464 should be accepted into document to achieve added link performance.

- Resolution: *Accepted*

- Note: This comment submitted at the initial ballot, accepted, but no response received from the originator.

Comment #2 that support the remaining disapprove votes and Working Group responses

•Comment (No. [LL5188](#) in [LB28d](#))

The AAS mode description is properly documented in D5 with the inclusion of C802.16j-08/133, C802.16j-08/134, C802.16j-08/135 currently on the upload server. These contributions were held over from Macau, China to further accommodate the membership's review. These contributions directly address only the optional AAS mode and have no impact whatsoever on any other mode. With the acceptance of these contributions, I have no further reservation and can change my vote to approve.

•Remedy

Adopt c802.16j-08_133, c802.16j-08_134, c802.16j-08_135.

Resolution: Rejected

•Reasons:

- 1. The proposed scheme is incomplete.
- 2. The proposed private MAP message in contribution 133 is not consistent with the Table 453 in IEEE 802.16e baseline document.
- 3. Partition/Burst Control encode defined in Table 2 is not a proper message, it only defined the high level structure, need to format it into a proper message.
- 4. UL timing/frequency adjustment introduces a new ranging scheme, which needs to provide proper update in Section 6, where describes the ranging process.
- 5. Probe-preamble is not consistently defined, need to clarify

•Note: The comment submitted on July 16, while the ballot closed on July 7. The comment was considered and rejected. No other comment received from this disapprove voter.

Schedule for confirmation ballot and resolution meeting

- 22 July : Open WG confirmation ballot
- 6 Aug.: Close WG confirmation ballot
TG Chair and WG Chair to resolve any comments by 8 Aug.
- 15 Aug: Open sponsor ballot

Appendix: 802.16 WG Motions

- 1. To authorize the WG Chair to request EC's conditional approval to initiate Sponsor Ballot on P802.16j, closing that ballot before session #57, if possible.**
 - Motion 1st: Mitsuo Nohara, 2nd: Ron Murias at 20:**
 - Passed: 66/0/0**
- 2. To authorize the WG Chair and Relay TG Chair to resolve comments received in Confirmation Ballot.**
 - Motion 1st: Mitsuo Nohara, 2nd: Avner Aloush at 20:45**
 - Passed: 64/0/1**

Appendix: List of Disapprove Voters

- Cai, Sean (No comments)*
- Li, Thomas (No comments)
- Popoli, Robert (2 comments)
- Wu, Yingzhe (No comments)

*: expressed conversion to approve as recorded in meeting minutes.

5.24 ME Conditional approval of 802.16 revision to sponsor ballot - Marks

Moved for conditional approval, under Clause 19, to forward 802.16 revision to sponsor ballot, moved Marks, seconded Gilb

Vote: 16/0/0, motion is approved

Supporting report to EC for request of conditional approval to initiate sponsor ballot on P802.16Rev2

IEEE 802.16 Presentation Submission Template (Rev. 9)

Document Number:

IEEE 802.16-08/040r1

Date Submitted:

2008-07-18

Source:

Jonathan Labs, Phillip Barber, Scott Probasco, Jose Puthenkulam
Wavesat, Huawei, Nokia, Intel

Voice:

E-mail: jlabs@wavesat.com

Venue:

Session #56

Base Contribution:

None

Purpose:

Report to the EC on the status of LB26 in support of request for conditional approval to initiate sponsor ballot on the IEEE P802.16Rev2 draft.

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Patent Policy:

The contributor is familiar with the IEEE-SA Patent Policy and Procedures:

<<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>> and <<http://standards.ieee.org/guides/opman/sect6.html#6.3>>.

Further information is located at <<http://standards.ieee.org/board/pat/pat-material.html>> and <<http://standards.ieee.org/board/pat>>.

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 - Comments that support the remaining disapprove votes and Working Group responses.
 - Schedule for confirmation ballot and resolution meeting.

Date the Ballot Closed

21 June 2008

Stage	Open	Close
Letter Ballot 26	5 Oct 2007	4 Nov 2007
Letter Ballot Recirc 26a	20 Dec 2007	14 Jan 2008
Letter Ballot Recirc 26b	20 Feb 2008	10 Mar 2008
Letter Ballot Recirc 26c	4 Apr 2008	19 Apr 2008
Letter Ballot Recirc 26d	6 June 2008	21 June 2008

Vote tally including Approve, Disapprove and Abstain votes

- Approve: 284
- Disapprove: 1
 - 6 comments, all on MIMO, 4 specifically on cyclic delay diversity (CDD)
- Abstain: 5
- Return ratio: 87.1%
- Approve ratio: 99.6%

Comments that support the remaining disapprove votes and Working Group responses

- LB 26:
 - no outstanding comments
- LB recirc 26a:
 - no outstanding comments
- LB recirc 26b:
 - 3 outstanding comments: 1 rejected, 2 superceded
- LB recirc 26c:
 - 3 outstanding comments: 3 rejected,
- LB recirc 26d:
 - no outstanding comments.

Comment by: Zhou Frank

Membership Status: Member

Date: 3/10/2008

Comment # 2166

Document under Review: P802.16Rev2/D3

Ballot ID: 26b

Comment Type Technical Part of Dis Satisfied Page ? Line Fig/Table# 543 Subclause 11.4.1

We propose BS to announcement its CDD parameters when using CDD. Please see detail at C80216maint-08/070r1 or its later revision.

Suggested Remedy

Please see detail at C80216maint-08/070r1 or its later revision.

GroupResolution

Decision of Group: Superseded

Reason for Group's Decision/Resolution

by 2147

Group's Notes

Editor's Notes

Editor's Actions b) none needed

Comment by: Zhou FrankMembership Status: MemberDate: 3/10/2008Comment # 2237Document under Review: P802.16Rev2/D3Ballot ID: 26b

<u>Comment</u>	<u>Type</u>	<u>Technical</u>	<u>Part of Dis</u>	<input checked="" type="checkbox"/> <u>Satisfied</u>	<input type="checkbox"/>	<u>Page</u> ?	<u>Line</u>	<u>Fig/Table#</u>	<u>Subclause</u>
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Two conditions need to be satisfied for a mobile to request a transition into band AMC mode (from PUSC mode):

i. The average CINR of the whole bandwidth should be larger than the band AMC entry average CINR for at least band AMC allocation timer frames.

ii. The maximum of the standard deviation of the individual band's CINR measurements should be lower than the band AMC allocation threshold (σ_{MAX}) for at least band AMC allocation timer frames.

The method for computing the average CINR as outlined in the IEEE 802.16e-2006, Rev2/D1 is performed by averaging instantaneous ratios of signal power to noise plus interference power, this type of averaging results in a bias and will impact condition (i) above.

Further, the method for computing the standard deviation as outlined in IEEE P802.16 (e.g., 802.16e-2006, Rev2/D1) specification is performed using linear values of CINR moments and not decibel values of the CINR moments. This causes a problem when checking for condition (ii) above.

Suggested Remedy

C80216maint-07_067r1 or its later version

Group ResolutionDecision of Group: Rejected

Adopt C802.16maint-08/0159r2

Reason for Group's Decision/Resolution

Concerns about backward compatibility

Group's Notes

Result of vote: 3 in favor, 13 opposed.

Editor's NotesEditor's Actions b) none needed

Comment by: Zhou FrankMembership Status: MemberDate: 3/10/2008Comment # 2238Document under Review: P802.16Rev2/D3Ballot ID: 26b

<u>Comment</u>	<u>Type</u>	<u>Part of Dis</u>	<input checked="" type="checkbox"/> <u>Satisfied</u>	<input type="checkbox"/>	<u>Page</u> ?	<u>Line</u>	<u>Fig/Table#</u>	<u>Subclause</u>
	Technical		<input checked="" type="checkbox"/>	<input type="checkbox"/>				8.4.8.7, 11.4.1

Currently CDD (cyclic delay diversity) is not defined in the 802.16 standard (OFDMA PHY) however widely used in practice in WiMAX system. This contribution attempts to bridge this gap by formally defining transparent CDD and supplying necessary restrictions. Although there is an effort to make these definitions in RPD in WiMAX forum we believe the correct place for them is the 802.16 standard since:

1. These definitions are necessary for the interoperability of devices, not only in the scope of WiMAX.
2. In order to refrain from contradictions between WiMAX and 802.16

CDD affects symbol timing estimation. The signal transmitted from the antenna with delay D has the same symbol timing as the normal signal, but in frequency domain processing (channel estimation, correlation, etc) it would appear to have a delay of D. In order to correctly set the symbol timing without causing ISI and artificial phase roll, the SS needs to know the value of D.

Without the CDD announcement and since CDD is optional at BS, 1% CDD delay could result in about 1 us timing error which will cause 1% ISI and limit the SNR at max 20 dB. This will cause problem for 64 QAM.

Suggested Remedy

C80216maint-08_006r5 or its later version

GroupResolutionDecision of Group: SupersededReason for Group's Decision/Resolution

by 2147

Group's NotesEditor's NotesEditor's Actions b) none needed

Comment by: Frank Zhou

Membership Status: Member

Date: 4/19/2008

Comment # 3215

Document under Review: P802.16Rev2/D4

Ballot ID: 26c

Comment Type Technical Part of Dis Satisfied Page 841 Line 19 Fig/Table# Subclause 8.4.5.4.10.15

The 3-Bit 2-Tx codebook in 16e was designed 3-4 years ago without the power balance across antennas in mind. Similar mis-haps at that time were Antenna Selection and Antenna Grouping in 16e. Typical contemporary BS implementation involves one constant PA per antenna. In order to maximize the usage of PA power, the codeword should have constant modulus over its elements. The property of constant modulus with quaternary alphabet can also enable faster search and potentially eliminate SVD operations in MS implementations. Competing standard has codebooks designed with the above considerations in mind. Here we propose a new 3-Bit 2-Tx codebook that further improves the counterpart in competing standard. It has been shown that performance of the 3-Bit 2-Tx codebook in the competing standard is similar compared with the 16e 3-Bit 2-Tx codebook; therefore the 3-Bit 2-Tx codebook we propose outperforms the 16e 3-Bit 2-Tx codebook.

Suggested Remedy

Please see C80216maint-07_218 or its later version.

GroupResolution

Decision of Group: Rejected

adopt c801.16maint-08/218

Reason for Group's Decision/Resolution

adequate performance from existing solution; lack of harmonization.

Group's Notes

deferred until MIMO

vote: 5 approve, 10 opposed, 0 abstain

Editor's Notes

Editor's Actions b) none needed

Comment by: Frank ZhouMembership Status: MemberDate: 4/19/2008Comment # 3232Document under Review: P802.16Rev2/D4Ballot ID: 26c

<u>Comment</u>	<u>Type</u> Technical	<u>Part of Dis</u> <input checked="" type="checkbox"/>	<u>Satisfied</u> <input type="checkbox"/>	<u>Page</u> ?	<u>Line</u> 45	<u>Fig/Table#</u>	<u>Subclause</u> 8.4.8.7, 11.4.1
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I am unsatisfied with the resolution of my comment 2238 in LB26b. It was superceded without my permission.

Per comment 2238 in LB26b:

Currently CDD (cyclic delay diversity) is not defined in the 802.16 standard (OFDMA PHY) however widely used in practice in WiMAX system. This contribution attempts to bridge this gap by formally defining transparent CDD and supplying necessary restrictions. Although there is an effort to make these definitions in RPD in WiMAX forum we believe the correct place for them is the 802.16 standard since:

1. These definitions are necessary for the interoperability of devices, not only in the scope of WiMAX.
2. In order to refrain from contradictions between WiMAX and 802.16

CDD affects symbol timing estimation. The signal transmitted from the antenna with delay D has the same symbol timing as the normal signal, but in frequency domain processing (channel estimation, correlation, etc) it would appear to have a delay of D. In order to correctly set the symbol timing without causing ISI and artificial phase roll, the SS needs to know the value of D.

Without the CDD announcement and since CDD is optional at BS, 1% CDD delay could result in about 1 us timing error which will cause 1% ISI and limit the SNR at max 20 dB. This will cause problem for 64 QAM.

Suggested Remedy

Please see C80216maint-08_006r8 or its later version.

GroupResolution

Decision of Group: Rejected

Adopt contribution C80216maint-08_006r9

Reason for Group's Decision/Resolution

maximum cdd delay to restrictive

Group's Notes

deferred until MIMO

vote: 16 approved, 20 opposed, 0 abstain

Editor's Notes

Editor's Actions b) none needed

Comment by: Frank Zhou

Membership Status: Member

Date: 4/19/2008

Comment # 3245

Document under Review: P802.16Rev2/D4

Ballot ID: 26c

Comment Type Technical Part of Dis Satisfied Page ? Line 15 Fig/Table# 563 Subclause 11.4.1

I am unsatisfied with the resolution of my comment 2166 in LB26b. It was superceded without my permission.

Per comment 2166:

We propose BS to announcement its CDD parameters when using CDD. Please see detail at C80216maint-08/070r4 or its later revision.

Suggested Remedy

Please see detail at C80216maint-08/070r4 or its later revision.

GroupResolution

Decision of Group: Rejected

adopt C80216maint-08/070r4

Reason for Group's Decision/Resolution

do not see benefit to broadcast the number or value of CDD

Group's Notes

deferred until MIMO

vote: 23 approve, 10 opposed, 0 abstain

Editor's Notes

Editor's Actions b) none needed

Comment by:

Yuval Lomnitz

Membership Status:Date: 3/10/2008Comment # 2147Document under Review: P802.16REV2/D3Ballot ID: 26bComment Type Technical Part of Dis Satisfied Page 953 Line 45 Fig/Table#Subclause 8.4.8Definitions for transparent transmit diversity and beamforming

Currently CDD (cyclic delay diversity) is not defined in the 802.16 standard (OFDMA PHY) and is even contradictory to the standard, however widely used in practice in WiMAX system. It is necessary to define transparent CDD and supply necessary restrictions. Beamforming is also included in this scope since it requires similar definitions for interoperability which are missing in the standard today.

Suggested Remedy

Adopt contribution IEEE C802.16maint-08/006r4 or latest revision

GroupResolutionDecision of Group: Rejected

Adopt C802.16maint-08/006r6

Reason for Group's Decision/Resolution

The requirement #5 in the contribution (maximum delay) is too restrictive.

Group's Notes

Result of vote to adopt C802.16maint-08/006r6: 23 in favor, 8 against

Result of revote to adopt C802.16maint-08/006r6: 31 in favor, 16 against

Editor's NotesEditor's Actions b) none needed

Comment by: Louay Jalloul

Membership Status: member

Date: 6/20/2008

Comment # 4184

Document under Review: P802.16REV2/D5

Ballot ID: 26d

<u>Comment</u>	<u>Type</u>	<u>Technical</u>	<u>Part of Dis</u>	<input type="checkbox"/>	<u>Satisfied</u>	<input type="checkbox"/>	<u>Page</u>	<u>?</u>	<u>Line</u>	<u>Fig/Table#</u>	<u>Subclause</u>
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Cyclic delay diversity (CDD) is not defined in the 802.16 standard (OFDMA PHY). However, CDD is widely used in WiMAX systems. This formally defines transparent CDD and supplying necessary restrictions for it to work.

Suggested Remedy

Adopt C802.16maint-08/006r9.

GroupResolution

Decision of Group: Accepted-Modified

Adopt C802.16maint-08/006r11

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes

Editor's Actions

Schedule for confirmation ballot and resolution meeting

- July 25: Release Rev2/D6
- July 25: Open WG confirmation ballot
- August 9: Close WG confirmation ballot
- August 11: Submit the draft to IEEE for SB
- August 18: open sponsor ballot

Appendix: 802.16 WG Motions

- 1. To accept draft P802.16Rev2/D5 as modified by the comment resolutions (80216-08/032r2) and to open a Working Group Confirmation Letter Ballot on that Draft (P802.16Rev2/D6), and to request conditional approval to the 802 EC to forward the draft to Sponsor Ballot.**
 - Moved: Jonathan Labs, Seconded: Lei Wang**
 - Passed: 72/0/0**
- 2. To authorize the WG Chair and TG Chair to resolve any comments that may be submitted in Letter Ballot Recirc #26e.**
 - Moved: Jonathan Labs, Seconded: John Humbert**
 - Passed: 68/0/0**

Appendix: List of Disapprove Voters

- Frank Zhou

5.25 ME Conditional approval of 802.21 to sponsor ballot

(Editorial error, repeat of item 5.14, so there is no item 5.25)

- Gupta

5.26 ME 802.3ba 5C modification

Moved to approve 5C modification, moved Law, seconded Jeffree

- Law

Vote: 16/0/0, motion is approved

Broad Market Potential (1 of 2)

- Broad sets of applications
 - Multiple vendors and numerous users
 - Balanced cost (LAN versus attached stations)
-
- **Bandwidth requirements for computing and core networking applications are growing at different rates, which necessitates the definition of two distinct data rates for the next generation of Ethernet networks in order to address these applications:**
 - Servers, high performance computing clusters, blade servers, storage area networks and network attached storage all currently make use of 1G and 10G Ethernet, with significant growth of 10G projected in '07 and '08. I/O bandwidth projections for server and computing applications, [including server traffic aggregation](#), indicate that there will be a significant market potential for a 40 Gb/s Ethernet interface.
 - Core networking applications have demonstrated the need for bandwidth beyond existing capabilities and the projected bandwidth requirements for computing applications. Switching, routing, and aggregation in data centers, internet exchanges and service provider peering points, and high bandwidth applications, such as video on demand and high performance computing environments, have demonstrated the need for a 100 Gb/s Ethernet interface.

Economic Feasibility

- Known cost factors, reliable data
 - Reasonable cost for performance
 - Consideration of installation costs
-

- The cost factors for Ethernet components and systems are well known. The proposed project may introduce new cost factors which can be quantified.
- Presentations indicate that for the server market and computing applications, [including server traffic aggregation](#), the optimized rate to provide the best balance of performance and cost is 40 Gb/s. For the network aggregation market and core networking applications, the optimized rate offering the best balance of performance and cost is 100 Gb/s.
- In consideration of installation costs, the project is expected to use proven and familiar media, including optical fiber, backplanes, and copper cabling technology.
- Network design, installation and maintenance costs are minimized by preserving network architecture, management, and software.

IEEE P802.3ba Five criteria change

- The LMSC Executive Committee approves the change to the IEEE P802.3ba Five Criteria document

M: D Law, S:

Y: ??, N: ??, A: ??

Working Group vote

Passed by voice vote without opposition

5.27 ME Conditional approval of P802.22.1 to sponsor ballot

- Stevenson

Moved that the LMSC EC grant conditional approval to forward the Working Group's most recently approved draft of P802.21, under Clause 19, to forward 802.22.1 to sponsor ballot, moved Stevenson, seconded Heile

Vote: 15/0/1, motion passes

Motion: Move that the IEEE802.22 Working Group accepts the comment resolutions they appear in document P802.22.1d3.0_cmts_004.xls, empower the editor to complete revision of P802.22.1/D3 and release document P802.22.1/D4 and authorize a recirculation ballot that will begin no later than July 28 and run for a period of 30 days.

Moved: Ivan Reede
Seconded: Baowei Ji

Yes: 28
No: 0
Abstain: 0

The motion passed (Technical Motion).

Moved that the P802.22 Working Group authorizes the Chair to seek conditional approval from the 802 Executive Committee to forward the most recently approved draft of P802.22.1 to Sponsor Ballot once all conditions outlined in section 19 of the LMSC P&P have been met.

Moved: Ivan Reede
Seconded: Victor Tawil

Yes: 18
No: 2
Abstain: 7

The motion passed. (Technical Motion)

Moved that the LMSC EC grant conditional approval to forward the Working Group's most recently approved draft of P802.22.1 to Sponsor Ballot once all conditions outlined in section 19 of the LMSC P&P have been met.

Moved: Stevenson
Seconded: Heile

Yes: 15
No: 0
Abstain: 1

P802.22.1 Ballot History

Ballot Description	Initialized	Ballot Opening Date	Ballot Closing Date
5 P802.22.1_D3 First Recirculation Ballot	2008-04-16	2008-04-16	2008-05-05
2 P802.22.1_D2 Working Group Ballot	2007-10-08	2007-10-09	2007-11-08
1 802.22.1_D1 WG Ballot #1	2007-06-07	2007-06-09	2007-07-09

5.28 ME Approval of 802.1ag interpretation response

- **Jeffree**

Moved that the above interpretation response be approved, moved Jeffree, seconded Law

Vote: 16/0/0, motion is approved

MOTION

- 802.1 approves the 802.1ag interpretation request documented here:
- <http://ieee802.org/1/files/public/docs2008/admin-ag-interpretation-request-0708-v01.doc>
- 802.1: Proposed: haddock Second: finn
- For: 29 Against: 0 Abstain: 10
- EC: Moved that the above interpretation response be approved.
- EC proposed: Jeffree Second: Law

Nikolich calls for a 10 minute recess, at 3:13 pm, to resume at 3:23 pm.

Meeting resumed at 3:25 pm

6.00 Executive Committee Study Groups, Working Groups, TAGs -

6.01 MI* 802.15 Visible light communications (1st extension) - Heile

Consent agenda item, approved.

6.02 MI* 802.21 Emergency communications (1st extension) - Gupta

Consent agenda item, approved

6.03 MI* 802.21 Handovers with Broadcast Services (1st extension) - Gupta

Consent agenda item, approved

6.04 MI 802.11 VHT (2nd extension) - Kraemer

Move to extend IEE 802.11 Very High Throughput Study Group through the next Plenary. Moved Kraemer, seconded Stevenson

Nikolich initiated discussion on what guidance the EC could we give to 802.15 and 802.11 to help move VHT60 PAR through the process.

Suggestion to hold EC conference call prior to September Wireless Interim session.

Nikolich agreed to set an EC conference call time to discuss guidance for the WGs.

Return to original motion.

Vote: 16/0/0, motion is approved

Agenda#: 6.04

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: Stevenson

**Move to extend IEEE 802.11 Very High
Throughput Study Group through the next
Plenary.**

TG Vote on the motion: 55-0-0

WG Vote on the motion: 53-0-1

Approve: 16

Do Not Approve:0

Abstain:0

Guidance from EC to 802.11/802.15

- Notes from discussion – comments:
- EC conference call to resolve the divergent views?
 - Joint Calls are already scheduled – what should be accomplished? (VHT sequence calls on Thursday at 11amET)
- What does the EC require?
 - Change to PAR?
- Why doesn't the EC stay out of it until after the Sept Interim Session and then come back to the EC via Telcon to discuss the proposal prior to the Nov Plenary....
- An EC call prior to the Interim to set the expectations on what is expected as an outcome from the interim.
- Look at what is being presented by the EC prior to the WGs looking at them to help in focusing the PAR.
- Warning if you don't work together the EC will Help you!

6.05 MI 802.15 RFID (2nd extension)

- **Heile**

Moved to extend RFID/SG through the November 2008 802 Plenary, moved Heile, seconded Gilb

Vote: 16/0/0, motion is approved

Executive Committee Actions- SG/RFID

- Progress is being made on establishing relationships/participation with other organizations active in RFID
- A draft PAR and 5C now exists and we may be able to wrap this up by Nov though one more cycle beyond that may be necessary
- Motion to extend SG/RFID passed in the WB by 28/0/0

Executive Committee Actions- SG/RFID

- Move to extend RFID/SG through the November 2008 802 Plenary

Moved: Heile

Second: Gilb

6.06 MI Formation of 802.15 Wireless neighborhood area networks - Heile

Moved to approve the formation of a Study Group in 802.15 to draft a PAR and 5C for Neighborhood Area Networking, moved Heile, seconded Gilb

Grow indicated that there is an initiative at the standard's board for Smart Grid.

Discussion of the characteristics of WNAN.

Vote: 15/0/1, motion is approved

Executive Committee Actions- NAN Study Group

- By neighborhood area network (NAN), we mean a network suitable for applications that have a low data rate and are latency tolerant, like 802.15.4-2006, but having greater range and increased message reliability.
- An exemplary application is the Smart Grid Initiative, which would create a wireless control system for electric utilities. Other industrial wireless users have also expressed interest.

Executive Committee Actions- NAN Study Group

- Tutorial on Monday evening
- 43 people out of 140 or so in attendance expressed interest
- Working Group Interest meetings have been attracting ~40 from 20-25 companies
- Motion in WG to form a Study Group passed 32/0/5

Executive Committee Actions- NAN Study Group

Move to approve the formation a Study Group
in 802.15 to draft a PAR and 5C for
Neighborhood Area Networking

Moved: Bob Heile

Second:

Vote:

6.07 MI 802.21 Security (3rd extension)

- Gupta

Moved that the EC extend (third extension) the 802.21 Security Study Group through the Nov 2008 Plenary meeting, moved Gupta, seconded Lemon

Vote: 16/0/0, motion is approved

LOA Status

- But there is an LoA (letters of assurance) issue
 - LoAs are submitted linked to a standard
 - Moving the material to another standard breaks the link.
 - Therefore PatCom advised seeking LoAs from all previous submitters of LoAs on the project or on the base standard after approval of the project.
 - The LOAs must use the current LoA form

6.08 MI 802.21 Multi-radio power management (3rd extension)

- Gupta

Moved that the EC extend (third extension) the 802.21 Multi-radio power management Study Group through the Nov 2008 Plenary meeting, Moved Gupta, seconded Lemon

Thaler suggested that having a tutorial on this in November 2008 to address where this work should belong.

Vote: 15/0/0, motion is approved

LOA Status

- LoAs
 - 4 LoAs submitted against IEEE 802.3ad link agg
 - 8 LoAs submitted against IEEE 802.3 after link agg
 - Total of 12 to request
- Requests have been sent by the 802.3 Chair
 - Advice of PatCom has been carried out
 - Some challenges who to send request to
 - Some response, awaiting others
- Any outstanding responses will be brought to the attention of PatCom

6.09 II IMT-Advanced update

- Lynch

Lynch presented a report on the IMT-advanced status.

Lynch: The deadlines have a gap due to our meeting schedule

Marks: The submission deadlines are not realistic, there is a lot of work to do for the proposal.

Kraemer: The plan is to come back in November with a process that allows more time for the proposal.

Lynch: The milestones were meant to be a catalyst for the discussion.

IEEE 802 IMT-Advanced Technology Proposal Process

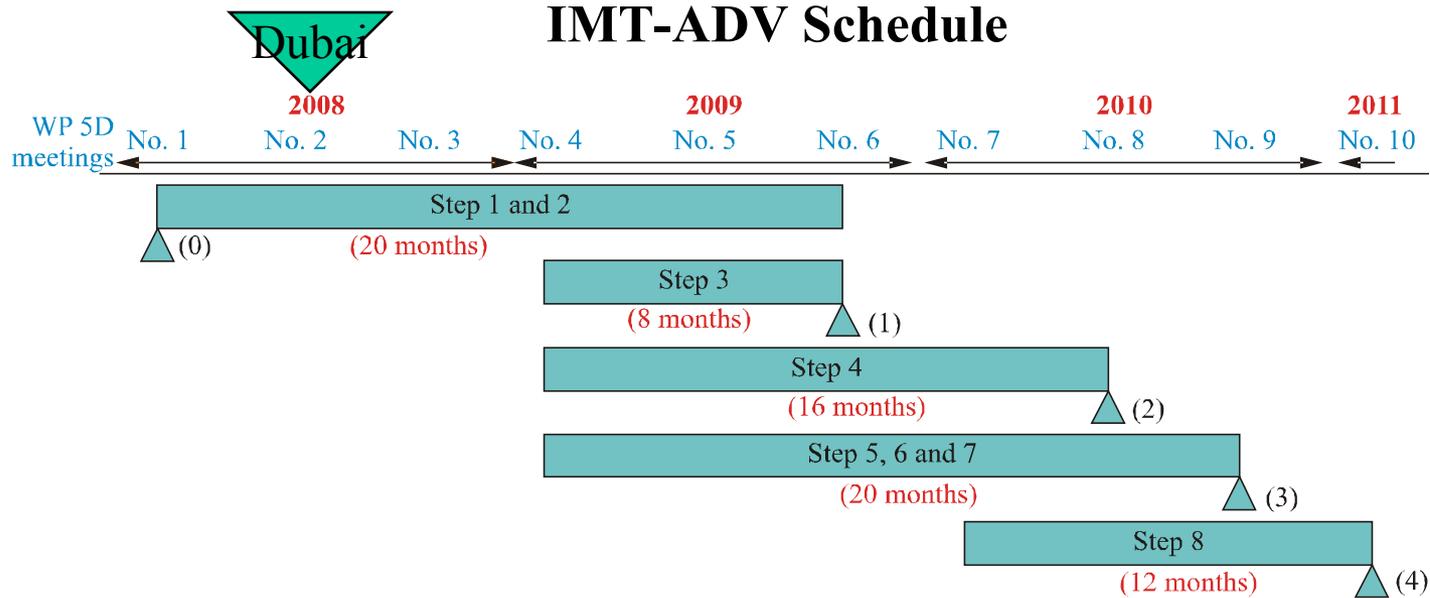
Date: 2008-07-16

Authors:

Name	Company	Address	Phone	email
John Notor	Cadence Design Systems, Inc.	San Jose, CA	408.473.8373	jnotor@cadence.com

Background

- The IMT-Advanced (IMT-Adv) process in ITU-R has advanced to the point where:
 - The technical requirements (IMT.TECH) are complete and approved by WP5D.
 - The evaluation requirements (IMT.EVAL) are substantially complete, and in the process of final revision, with approval expected at the October 2008 WP5D meeting in Seoul.
 - The Circular Letter is being finalized.
 - Final approval of IMT-Adv documents expected at the November SG5 meeting.
- Interested IEEE 802 WG's now need to consider what response(s) to make to IMT-Adv.
 - Submit a Radio Interface Technology proposal (RIT) as a single WG.
 - Submit a Set of Radio Interface Technologies (SRIT) jointly with one or more other WG's.



Steps in radio interface development process:

- Step 1: Issuance of the circular letter
- Step 2: Development of candidate RITs and SRITs
- Step 3: Reception of the RIT and SRIT submissions and acknowledgement of receipt
- Step 4: Evaluation of candidate RITs and SRITs by evaluation groups

- Step 5: Review and coordination of outside evaluation activities
- Step 6: Review to assess compliance with minimum requirements
- Step 7: Consideration of evaluation results, consensus building and decision
- Step 8: Development of radio interface Recommendation(s)

Critical milestones in radio interface development process:

(0): issue an invitation to propose RITs	March 2008	(2): Cut off for evaluation report to ITU	June 2010
(1): ITU proposed cut off for submission of candidate RIT proposals	October 2009	(3): WP 5D decides framework and key characteristics of IMT-Advanced RITs and SRITs	October 2010
		(4): WP 5D completes development of radio interface specification Recommendations	February 2011

IEEE 802 Approval Process for IMT-Advanced Submissions

- A single Working Group (WG), or a joint WG collaboration, creates and submits a draft RIT proposal, or a draft SRIT proposal to 802.18 for review:
 - Proposal requirements: draft must be complete, including self-evaluations, per ITU-R WP5D submission requirements.
 - The WG(s) must approve the draft prior to submission to 802.18.
- 802.18 reviews proposals for completeness relative to WP5D submission requirements (i.e., all required information is present, format is correct, this is not a review of the technical parameters of the submission):
 - If 802.18 finds the proposal is incomplete, 802.18 returns the proposal to the WG with a list of discrepancies and, where possible, suggestions for corrections.
 - If 802.18 finds the proposal complete, 802.18 approves the proposal, forwarding the proposal to the EC for review/approval.
- After EC approval, the IEEE SA ITU-R liaison will submit the proposal to WP5D, with appropriate cover letter.

Critical Milestones

- Last date for WG's to submit technology proposals (final WG approved drafts) to 802.18 for review: June 12, 2009.
- Last date for 802.18 approval of proposals for submission to the EC: July 16, 2009.
- Last date for EC approval of technology proposals: July 17, 2009.
- Last date WP5D will accept technology proposals: October 2009 (exact date is TBD).

7.00 Break -

8.00 IEEE -SA Items -

Chair changed item 8.03 to be the first item.

8.03 II PSDO comments - Thompson

Thompson: Meetings were held during the week which discussed the PSDO. Recommendation is to put the comments to the 802 EC for a comment period and then to send them to the SA for action.

Thompson: There a couple big problems. One is that the document requires an interpretation mechanism, but there is no process for doing interpretations.

Thompson will request the missing portion of the PSDO document.

8.01 II 802 Task Force update - Nikolich

Nikolich: The Task Force discussed

- the PSDO
- attendance tools (needs some updates), the requirements document needs to be compared to the existing attendance tool capabilities.
- strategic plan to determine if 802 would be affected.

8.02 MI 802 EC position on getIEEE 802 for 2009 calendar year - Hawkins

Hawkins: Reviewed curent plan

Moved: That IEEE 802 approve continuation of funding the Get802 program in the amount of \$75 per attended for the 2009 plenary sessions and free posting of standards 6 months following publication data per original program agreement. Moved Hawkins, seconded Rigsbee

Nikolich suggests specifying the date of the program agreement

Motion is now: That IEEE 802 approve continuation of funding the Get802 program in the amount of \$75 per attended for the 2009 plenary sessions and free posting of standards 6 months following publication data per original (July 2004) program agreement.

Rigsbee suggested a small or nominal charge for downloads. Waiting to hear if there has been progress.

Vote: 15/0/1, motion is approved

Get 802 Program

Moved: That IEEE 802 approve continuation of funding the Get802 program in the amount of \$75 per attendee for the 2009 plenary sessions, and free posting of standards 6 months following publication date per original (July 2004) program agreement.

Moved: Hawkins Seconded: Rigsbee

9.00

LMSC Liaisons and External Interface

-

9.01 ME 802.20-M1801-Revision

- **Lynch**

Moved to approve document 18-08-0043r1 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5A. moved Lynch, seconded Klerer

Kraemer noted that there are errors with regards to 802.11 radios and asked how those get fixed

Lynch indicated that 802.11 should mark up the document and submit it for approval by the November plenary.

Vote: 16/0/0, motion is approved

802.18 Motion to SEC

Agenda: 9.01

Date: 07/18/2008

Time: 4:12 p.m.

Motion by: Lynch

Seconded by: Klerer

Moved:

To approve document:

18-08-0043r1 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to ITU-R WP5A. 802.18 approved 9/0/0

Informative: This document provides an update to Recommendation ITU-R M.1801 to include 802.20

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.02 ME Revision of Recommendation ITU-R M.1801

- Lynch

Moved to approve document L802-18-0047-00 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5A. moved Lynch, seconded Marks

Vote: 16/0/0, motion is approved

802.18 Motion to SEC

Agenda: 9.02

Date: 07/18/2008

Time: 4:17 p.m.

Motion by: Lynch

Seconded by: Marks

Moved:

To approve document:

L802-18-0047.doc

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to ITU-R WP5A. 802.18 approved 14/0/0

Informative: This document provides an update to ITU-R Recommendation M.1801 regarding 802.16

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.03 ME Further ECC UWB Consultation

- Lynch

Moved to approve document L802-18-0048-01 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5A. moved Lynch, seconded Marks

Vote: 16/0/0

802.18 Motion to SEC

Agenda: 9.03

Date: 07/18/2008

Time: 4:22 p.m.

Motion by: Lynch

Seconded by: Marks

Moved:

To approve document:

18-08-0048-r1

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to CEPT ECC. 802.18 approved 11/0/1

Informative: This document provides further comments on the further ECC UWB consultation

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.04 ME Parameters of Radio Interface Technologies

- Lynch

Moved to approve document L802-18-0049 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5A. moved Lynch, seconded Marks

Vote 16/0/0, motion is approved

802.18 Motion to SEC

Agenda: 9.04

Date: 07/18/2008

Time: 4:27 p.m.

Motion by: Lynch

Seconded by: Marks

Moved:

To approve document:

18-08-0049

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to ITU-R WP5D & 5A. 802.18 approved 10/0/0

Informative: This document responds to an ITU-R WP5D liaison on parameters for IMT radio interfaces

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.05 ME Further Response on IMT-2000 OFDMA TDD WMAN ACS - Lynch
Values

Moved to approve document L802-18-0050 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5D & WP5A. moved Lynch, seconded Marks

Vote: 16/0/0, motion is approved

802.18 Motion to SEC

Agenda: 9.05

Date: 07/18/2008

Time: 4:32 p.m.

Motion by: Lynch

Seconded by: Marks

Moved:

To approve document:

18-08-0050

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to ITU-R WP5D. 802.18 approved 11/0/1

Informative: Provides a further response on ACS values to ITU-R WP5D

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.06 ME Updated Material on IMT-2000 OFDMA TDD WMAN for - Lynch
Revision 9 of Recommendation ITU-R M.1457

Moved to approve document L802-18-0051-r1 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5D. moved Lynch, seconded Marks

Vote: 16/0/0, motion is approved.

802.18 Motion to SEC

Agenda: 9.06

Date: 07/18/2008

Time: 4:37 p.m.

Motion by: Lynch

Seconded by: Marks

Moved:

To approve document:

18-08-0051-r1

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to ITU-R WP5D. 802.18 approved 9/0/0

Informative: This document provides 802.16 updates for the revision of ITU-R Recommendation M.1457

Approve: 16 Do Not Approve: 0 Abstain: 0 Motion: Approved

9.07 ME Ex Parte Comments of IEEE 802

- Lynch

Moved to approve document L802-18-0052 as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a 'template', create the appropriate input to ITU-R WP5A. moved Lynch, seconded Heile

Marks: 802.16 submitted a document at the last meeting with an opposite position, but no action was taken. Also concerned because this was a majority vote and not a super majority vote.

Lynch stated that this was a procedural issue and only required majority vote.

Vote: 8/4/4, motion is approved.

802.18 Motion to SEC

Agenda: 9.07

Date: 07/18/2008

Time: 4:42 p.m.

Motion by: Lynch

Seconded by: Heile

Moved:

To approve document:

802-18-52

as an 802 document, authorizing the Chair of 802.18 to do necessary editorial and formatting changes and, using the document as a “template”, create the appropriate input to the U.S. FCC. 802.18 approved 5/3/5

Informative: This document provides comments relating to a possible NPRM to be opened by the FCC.

Approve: 8 Do Not Approve: 4 Abstain: 4 Motion: Approved

9.10 ME IEEE 802.3 response to liaison letter from ITU-T SG15 to 802.3 - Law
*

(consent agenda item, approved)

9.11 ME IEEE 802.3 liaison letter to ITU-T SG15 regarding 40 Gb/s and - Law
* **100 Gb/s OTN compatibility**

(consent agenda item, approved)

9.12 II Liaison letter to ITU-T SG15 regarding PBB-TE protection - Jeffree

Jeffree: Sending a liaison letter to ITU (standard

Grow: Isn't this a government body? Doesn't it require approval.

Jeffree: This is an equivalent group to 802.1

9.13 ME A802.11 WG to send Jesse Walker to attend July - Kraemer
JTC1/SC6/WG1 special meeting and to present two documents.

Move to authorize Jesse Walker to attend, on behalf of the IEEE 802.11 WG, the July JTC1/SC6/WG1 special meeting to discuss the integration of WAPI technology into international standards. Jesse Walker is not authorized to enter into any agreements on behalf of the WG. Moved Kraemer, seconded Gilb.

Discussion on the motion indicated that this is not a liaison and so doesn't require approval of the EC. This is just a meeting between people.

Kraemer and Gilb agreed to withdraw the motion as not being necessary

Nikolich: Are there any objections to withdrawing the motion? None heard, motion is withdrawn.

The second proposed motion does not need to be approved if they are 802.11 and not 802 position statements.

Agenda#: 9.13

Date: 07/18/08

Time:

IEEE 802 LMSC RESOLUTION

Motion By: KRAEMER Seconded By: Gilb

Withdrawn -- Not necessary

- Move to authorize Jesse Walker to attend, on behalf of the IEEE 802.11 WG, the July JTC1/SC6/WG1 special meeting to discuss the integration of WAPI technology into international standards. Jesse Walker is not authorized to enter into any agreements on behalf of the WG.

- WG motion: 44-0-4

Approve:

Do Not Approve:

Abstain:

WITHDRAWN ---- Not Necessary

10.00

LMSC Internal Business

10.01 II Treasurer's Report

- Hawkins

Hawkins presents the Treasurer's report.

IEEE Project 802
Statement of Operations
Mar 2008 Plenary Session
Orlando, FL
As of Jul 18, 2008

Session Income				dB	Est/Act	Budget	Deviation
	Net Registrations				1,419	1,300	119
77.1%	1094	Early Registrations	@ \$400	\$ 437,600			
	22	Early cancellations	@ \$400	(8,800)			
	39	Cancellations	@ \$350	(13,650)			
22.9%	325	Registrations	@ \$500	162,500			
	1	Cancellation	@ \$500	(500)			
	3	Cancellation	@ \$450	(1,350)			
0.0%	0	Student	@ \$150	0			
	0	Other credits	@ \$100	0			
	Registraion Subtotal			\$ 575,800	\$ 575,800	\$ 547,820	\$ 27,980
	0	Deadbeat Payment	@ \$500		0	0	0
	Interest				3,876	150	3,726
	Other (Hotel comps and commission)				79,267	75,000	4,267
TOTAL Session Income					\$ 658,943	\$ 622,970	\$ 35,973

Session Expenses				Est/Act	Budget	Deviation
	Audio Visual Rentals			20,546	25,500	4,954
	Audit			6,000	6,000	0
	Bank Charges			195	450	255
	Copying			2,716	3,000	284
	Credit Card Discounts & Fees			16,618	15,652	(966)
	Equipment Expenses			12,737	15,000	2,263
	Get IEEE 802 Contribution			101,625	97,500	(4,125)
	Insurance			2,713	3,000	287
	Meeting Administration			89,344	80,861	(8,483)
	Misc Expenses			3,004 *	5,000	1,996
	Networking			60,307	68,000	7,693
	Other Expenses			0	5,600	5,600
	Phone & Electrical			1,279	2,300	1,021
	Refreshments			129,477	135,000	5,523
	Shipping			9,958	19,000	9,042
	Social			53,990	49,000	(4,990)
	Supplies			2,129	800	(1,329)
TOTAL Session Expense				\$ 512,637	531,663	19,026
NET Session Surplus/(Deficit)				146,306	91,307	54,999
Analysis						
	Refreshments per registration			91	104	13
	Social per registration			38	38	(0)
	Meeting Admin per registration			63	62	(1)
	Surplus/(Loss) per registration			103	70	33

* Misc items: Hotel gratuity,802.20 travel reimb, retirement gift

Cash recognized on hand as of May 1, 2008	\$ 1,425,656
Additional income for March 08 session	\$ 82,005
Reserve for unpaid expenses for prior sessions	\$ (443,429)
Reserve for other outstanding commitments	
Income received for current session	\$ (14,800)
Expenses prepaid for current session	\$ 409
Expenses prepaid for future session:	\$ -
Operating Reserve following this session	\$ 1,049,841

IEEE Project 802
Estimated Statement of Operations
July 2008 Plenary Session
Denver, CO
As of Jul 18 2008

Meeting Income	<i>Estimate</i>	Budget	Variance
Registrations	1,484	1,300	184
Registration income	638,120	559,000	79,120
Cancellation refunds	(12,762)	(11,180)	
Deadbeat collections	0	0	0
Bank interest	500	400	100
Other income	<u>77,500</u>	<u>75,000</u>	2,500
TOTAL Meeting Income	\$ 703,358	\$ 623,220	80,138
Meeting Expenses	<i>Estimate</i>	Budget	Variance
Audio Visual Rentals	27,500	\$ 25,500	(2,000)
Audit	0	0	0
Bank Charges	350	350	0
Copying	2,500	3,500	1,000
Credit Card Discount	17,867	15,652	(2,215)
Equipment Expenses	15,000	15,000	0
Get IEEE 802 Contribution	109,074	95,550	(13,524)
Insurance	0	0	0
Meeting Administration	89,687	80,861	(8,826)
Misc Expenses	3,674	7,500	3,826
Network	61,740	68,000	6,260
Other Expenses	0	0	
Phone & Electrical	100	2,000	1,900
Refreshments	134,000	150,000	16,000
Shipping	15,800	15,000	(800)
Social	87,087	75,000	(12,087)
Supplies	500	800	300
Other Discounts	<u>0</u>	<u>0</u>	0
TOTAL Meeting Expense	\$ 564,880	\$ 554,713	(10,167)
NET Meeting Income/Expense	<u>\$ 138,478</u>	<u>\$ 68,507</u>	69,971
Analysis			
Refreshments per registration	90	115	25
Social per registration	59	58	(1)
Meeting Administration per reg	60	62	2
Networking per registration	42	52	11
Get IEEE 802 Contribution per	75	75	0
Surplus/Deficit per registrator	93	53	41
Pre-registration rate	70%	70%	

* Misc items: Hotel gratuity, space rental, registration desk rental, gift

** Other expenses: N/A

10.02 MI Meeting planner RFP and contract

- Hawkins

Moved to The EC approves the selection of Face-to-Face Events, Inc as the meeting planner for IEEE 802. The Executive Secretary is authorized to engage in contract negotiations with Face-to-Face and to work with IEEE Procurement to execute the resulting contract in time for the November 2008 plenary session. Moved Hawkins, seconded Heile

Recused from the vote: Buzz Rigsbee, Roger Marks

Shellhammer: What is the time frame.

Hawkins: It was intended to be for three years.

Grow: Procurement won't let us sign one for more than 3 years.

Hawkins: The pricing has already been negotiated via the RFP process, the changes are only in formatting.

Vote: 14/0/0, motion is approved.

MP-RFP Status

- 8 invited to bid: 2 no response + 3 hi bids + 3 finalists
- Ran pricing exercise to compare values on 3 finalists
- Eval Team completed individual ratings of 3 finalists
- Met during the week and reached unanimous agreement on a recommendation that we select Face-to-Face Events as our meeting planner for the 3-year period starting with the Nov 2008 plenary session.
- Posted all responses and evaluation team results to EC protected site.

Next Steps

- Approve recommendation today (see attached motion)
- Engage in detailed contract negotiations w/ F2F based on IEEE MSA
- Execute via IEEE Procurement in time for November plenary session

Motion

The EC approves the selection of Face-to-Face Events, Inc as the meeting planner for IEEE 802. The Executive Secretary is authorized to engage in contract negotiations with Face-to-Face and to work with IEEE Procurement to execute the resulting contract in time for the November 2008 plenary session.

Mover: John Hawkins

Seconded: Bob Heile

Y: N: A:

10.03 MI Network services report

- **Rigsbee**

Gilb: This item should be II, no motion is intended

Alfvin presents the network services report verbally. Some problems routing to the 25th and 26th floors due to switches in the back of the hotel that are managed remotely. Because of this, they were not able to fix the issues.

Rosdahl: Some of the 802.11a APs were working on the floors.

10.04 MI Network support contract extension

- **Hawkins**

Moved: the EC approves the Terms and Conditions as detailed in document 802-VeriLAN-AssetTransferT&Cs-04.doc and authorizes the Executive Secretary to incorporate these into the IEEE MSA template and negotiate a final contract extension with VeriLAN for the 3 year period beginning in January 1, 2009. Moved Hawkins, seconded Rigsbee

Lemon: What are we authorizing now?

Hawkins: The asset transfer terms and conditions.

Heile: Wants to have two contracts, one with and one without the asset transfer

Stevenson: Wants to see the analysis of the impact in the future.

Law: Proposed it be done on EC letter ballot after the analysis has been provided.

Nikolich: Tabled until Hawkins is ready with the numbers and then it will be an 802 EC email ballot.

Network Services Contract Extension Proposal

- Our experience with VeriLAN Event Services Inc continues to be very good. Executive Secretary and Treasurer recommend we extend the contract for the 3-year period beginning Jan 1, 2009
- Terms of the extension were distributed to the EC during the week:
 - VeriLAN would agree to take ownership of substantially all of IEEE 802 A/V and network assets.
 - VeriLAN will offer us very attractive rates on projector rentals and guarantee the required service levels for the term of the contract.
 - VeriLAN will allow credits in the amount of the estimated fair market value of the equipment to be applied towards future projector rental charges.
 - Rigsbee, Grow and Hawkins agreed negotiated the valuation, of approximately \$48,000 (assuming we execute the transfer at the end of the November plenary).

Next Steps

- Approve recommendation today (see attached motion)
- Check some details on the asset transfer with IEEE Tax department
- Complete contract w/ VeriLAN and circulate to EC for approval

Motion

The EC approves the Terms and Conditions as detailed in document [802-VeriLAN-AssetTransferT&Cs-04.doc](#) and authorizes the Executive Secretary to incorporate these into the IEEE MSA template and negotiate a final contract extension with VeriLAN for the 3-year period beginning January 1, 2009.

Mover: John Hawkins Second: Buzz Rigsbee

Y: N: A:

10.05 MI nNA site selection

- **Rigsbee**

Rigsbee presented nations of origin of the attendees.

Sherman suggests we move future meeting sites to EC email ballot.

Meeting under consideration for nNA site selection: March 13-18, 2011 Plenary, March 11-16, 2012 Plenary, July 14-19, 2013 Plenary

Nikolich held a vote, each EC member gets one vote per meeting. First vote is for March 2011 plenary. Results:

Venetian Macao in 2011 (5)

Marina Bay Sands 2011 (3)

Geneva in 2011 (8)

Tel Aviv in 2011 (0)

Geneva in 2011 wins

Second vote, March 2012 plenary

Venetian Macao in 2012 (12)

Marina Bay Sands 2012 (4)

Geneva in 2012 (0)

Tel Aviv in 2012 (0)

Macao in 2012 wins

Thaler suggests tabling 2013 decision.

IEEE 802 Plenary Session - July 13-18, 2008 Survey Results

Survey Participation

Responses	522
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Question #1: For the March 13-18, 2011 Plenary Session I think the best choice for IEEE-802 would be:

Macao	132
Singapore	144
Switzerland	167
Israel	58
None	19
Abstain	2

Question #2: For the March 11-16, 2012 Plenary Session I think the best choice for IEEE-802 would be:

Macao	113
Singapore	164
Switzerland	145
Israel	73
None	23
Abstain	4

For the July 14-19, 2013 Plenary Session I think the IEEE-802 Executive Committee should accept the proposal from the University of Twente to host our Plenary Session and work out the final deal based on the proposal guideline: Rooms: \$60-\$300.US/night, Reg-Fee: \$600/800/1000

Yes	343
No	160
Abstain	19

Registrations By Region and Country - July 2008 Plenary

Australia	5	0.34%	A
Austria	2	0.13%	E
Belgium	1	0.07%	E
Canada	47	3.15%	NA
China, Peoples Rep	85	5.70%	A
Croatia	1	0.07%	E
Denmark	1	0.07%	E
Egypt (Arab Rep of)	2	0.13%	E
England, UK	9	0.60%	E
Finland	10	0.67%	E
France	18	1.21%	E
Germany	34	2.28%	E
Hungary	2	0.13%	E
India	13	0.87%	A
Israel	34	2.28%	E
Italy	4	0.27%	E
Japan	117	7.84%	A
Korea South, Rep of	175	11.73%	A
Malaysia	1	0.07%	A
Netherlands	9	0.60%	E
Norway	3	0.20%	E
Portugal	1	0.07%	E
Republic of Ireland	3	0.20%	E
Russian Federation	9	0.60%	E
Scotland, UK	3	0.20%	E
Singapore	6	0.40%	A
South Africa	1	0.07%	E
Sweden	7	0.47%	E
Switzerland	6	0.40%	E
Taiwan ROC	67	4.49%	A
UK	31	2.08%	E
USA	785	52.61%	NA

Total = 1492 100.0%

North America = 832 55.76% NA

Europe = 191 12.80% E

Asia/Oceania = 469 31.43% A

Nikolich adjourns the meeting 6:02 pm

Following items not covered due to meeting adjourning.

11.00 Information Items

11.02 MI Future meeting sites - Rigsbee

11.03 II P&P update - Sherman

11.04 II Global standards collaboration 13 communique - Nikolich

12.00 ADJOURN SEC MEETING - Nikolich

Respectfully submitted
James P. K. Gilb
802 Recording Secretary