MINUTES (Unconfirmed) - IEEE 802 LMSC
EXECUTIVE COMMITTEE MEETING, Revision 1

Friday, November 11, 2011 – 1:00 p.m.
All times Pacific Daylight Time (PDT)

Atlanta, GA

EC members present:
Paul Nikolich – Chair, IEEE 802 LAN / MAN Standards Committee
Pat Thaler – Vice Chair, IEEE 802 LAN / MAN Standards Committee
Mat Sherman – Vice Chair, IEEE 802 LAN / MAN Standards Committee
James Gilb – Recording Secretary, IEEE 802 LAN / MAN Standards Committee
Jon Rosdahl – Executive Secretary, IEEE 802 LAN / MAN Standards Committee
Bob Grow – 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
Mike Lynch – Chair, IEEE 802.18 – Regulatory TAG
Steve Shellhammer – Chair, IEEE 802.19 – Wireless Coexistence Working Group
Subir Das – Chair, IEEE 802.21 – Media Independent Handover Working Group
Apurva Mody – Chair, IEEE 802.22 – Wireless RANs Working Group
Geoff Thompson – Member Emeritus (non voting)

EC members absent:
John Lemon – Chair (non-voting), IEEE 802.17 – Resilient Packet Ring Working Group
Mark Klerer – Chair (non-voting), IEEE 802.20 – Mobile Broadband Wireless Access Working Group
Buzz Rigsbee – Meeting Planner, Member Emeritus (non-voting)

v03 DRAFT AGENDA - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING
Friday 1:00PM-6:00PM

Key: ME - Motion, External, MI - Motion, Internal, DT- Discussion Topic, II - Information Item
Special Orders
Category (* = consent agenda)

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

Meeting called to order at 1:00 pm

2.00 MI APPROVE OR MODIFY AGENDA **Nikolich** **9** **01:01 PM**

Proposed agenda is ec-11-0020-02.

Gilb requested that items 7.05, 7.06, 7.07, 7.08 and 7.09 be removed from the consent agenda.

Thaler requested that item 4.06 be taken off the consent agenda.

Kraemer asked for two new study group requests to be added to the agenda,
6.08, MI, 802.11 C60G China 60 GHz new SG
6.09, MI, 802.11 ISD Infrastructure service discovery.

Kraemer asked to add two additional items for liaison and external interfaces,
7.11, ME, Approval of head of delegation for ISO SC6 meeting

7.12, ME, Approval of liaison with P1905.1

Motion to approve the agenda as amended

Moved Lynch, seconded by Marks

Vote is 14/0/0, motion passes

v03		DRAFT AGENDA - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING			
		Friday 1:00PM-6:00PM			
Key:		ME - Motion, External, MI - Motion, Internal, DT- Discussion Topic, II - Information Item			
		Special Orders			
		Category (* = consent agenda)			
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	II	Announcements from the Chair	Nikolich	5	01:10 PM
3.01	MI*	APPROVE updated minutes of March opening meeting, 20110314-opening-minutes-v1.pdf	Gilb	0	01:15 PM
3.02	MI*	APPROVE updated minutes of July opening meeting, 20110718-opening-minutes-v1.pdf	Gilb	0	01:15 PM
3.03	MI*	APPROVE minutes of July closing meeting, 20110718-opening-minutes-v3.pdf	Gilb	0	01:15 PM
4.00		LMSC Internal business			01:15 PM
4.01	ME	802.15.9 recommended practice for Key Management, PAR forward to NesCom	Heile	5	01:15 PM
4.02	DT	Proposal for IEEE 802 University outreach program	Law	5	01:20 PM
4.03	MI	Network services contract status and authorize EC sub-committee (Rigsbee, Grow, Nikolich and Rosdahl) to review RFP results, select vendor and manage completion of contact.	Rosdahl	5	01:25 PM
4.04	MI	Provide alternate method to distribute Standards CD	Gilb	5	01:30 PM
4.05	DT	802 Overview and Architecture report	Gilb	3	01:35 PM
4.06	II*	IEEE 802 EC Interim Teleconference, February 7, 2012, 1-2 pm EST.	Rosdahl	5	01:38 PM
4.07	II	Treasurer's report	Grow	10	01:43 PM
4.08	DT	Hawaii meeting fees	Grow	10	01:53 PM
5.00		IEEE Standards Board and Sponsor Ballot Items			02:03 PM
5.01	ME	802.22b amendment for Enhanced Broadband and Monitoring, PAR forward to NesCom	Mody	5	02:03 PM
5.02	MI	802.22.2 forward to Sponsor Ballot (conditional)	Mody	10	02:08 PM
5.03					02:18 PM
5.04	ME	802.1Q-2011 corrigendum PAR forward to NesCom	Jeffree	5	02:18 PM
5.05	MI	802.1BR forward to Sponsor ballot (conditional)	Jeffree	10	02:23 PM
5.06	MI	802.1Qbg forward to Sponsor ballot (conditional)	Jeffree	10	02:33 PM
5.07	MI	802.1AXbk forward to Sponsor ballot	Jeffree	5	02:43 PM
5.08					02:48 PM
5.09	ME	802.3bh Ethernet Maintenance, forward to Sponsor Ballot (conditional)	Law	10	02:48 PM
5.10					02:58 PM
5.11	MI	802.11ad forward to Sponsor ballot (conditional)	Kraemer	10	02:58 PM
5.12	ME	802.11mb forward to RevCom (conditional)	Kraemer	10	03:08 PM
5.13					03:18 PM
5.14		Break		10	03:18 PM
5.15	ME	802.15.6 PAR extension forward to NesCom	Heile	3	03:28 PM
5.16	ME	802.15.6 PAR modification forward to NesCom	Heile	3	03:31 PM
5.17	ME	802.15.4e PAR extension forward to NesCom	Heile	3	03:34 PM
5.18	ME	802.15.4e forward to RevCom	Heile	10	03:37 PM
5.19	ME	802.15.4f forward to RevCom	Heile	5	03:47 PM
5.20	ME	802.15.4g forward to RevCom (conditional)	Heile	10	03:52 PM
5.21	ME	80.15.6 forward to RevCom (conditional)	Heile	10	04:02 PM
5.22	ME	Approve the response to interpretation request 1 for IEEE Std 802.15.4-2006	Heile	5	04:12 PM
5.23	ME	802.16.1b amendment for enhancements to support machine-to-machine applications in 802.16.1, PAR forward to NesCom	Marks	5	04:17 PM
5.24	ME	802.16p modificatiion, amendment for enhancements to support machine-to-machine applications in 802.16, PAR forward to NesCom	Marks	5	04:22 PM
5.25	ME	802.16.1a, amendment for higher reliability networks in 802.16.1 PAR forward to NesCom	Marks	5	04:27 PM

5.26	ME	802.16n modification, amendment for higher reliability networks in 802.16 PAR forward to NesCom	Marks	5	04:32 PM
5.27	MI	802.16Rev3 forward to Sponsor ballot (conditional)	Marks	10	04:37 PM
5.28	MI	802.16.1 forward to Sponsor ballot (conditional)	Marks	10	04:47 PM
5.29	MI	802.16p forward to Sponsor ballot (conditional)	Marks	10	04:57 PM
5.30	ME	802.21a forward to RevCom (conditional)	Das	10	05:07 PM
5.31	ME	802.21b forward to RevCom (conditional)	Das	10	05:17 PM
6.00		Executive Committee Study Groups, Working Groups, TAGs			05:27 PM
6.01	MI*	802.22 RASGCIM, 1st extension	Mody	0	05:27 PM
6.02	MI	802.3 EPON PHY for Coax (EPoC) new SG	Law	5	05:27 PM
6.03	MI*	802.3 Next Generation 100 Gb/s Optical Ethernet, 1st extension	Law	0	05:32 PM
6.04	MI*	802.3 Extended EPON, 1st extension	Law	0	05:32 PM
6.05	MI	802.15 Peer aware communications, new SG	Heile	5	05:32 PM
6.06	MI	802.15 Communication requirements for Positive Train Control, new SG	Heile	5	05:37 PM
6.07	MI	802.15.4 Amendment for medical applications in unlicensed bands in China, new SG	Heile	5	05:42 PM
6.08	MI	802.11 C60G China 60 GHz new SG	Kraemer	5	05:47 PM
6.09	MI	802.11 IST Infrastructure service discovery	Kraemer	5	05:52 PM
6.10					05:57 PM
6.11					05:57 PM
7.00		LMSC Liaisons and External Interface			05:57 PM
7.01	ME	Press releases for 802.22 WG receiving 2011 IEEE SA Emerging Technology of the year award	Mody	5	05:57 PM
7.02	ME*	Approve FCC filing 18-11-0090-02-0000	Lynch	0	06:02 PM
7.03	ME*	Approve FCC filing 18-11-0091-01-0000	Lynch	0	06:02 PM
7.04	II	Liaison response to ITU-T SG15	Jeffree	5	06:02 PM
7.05	ME	Liaison letter to ITU-T Study Group 15: OTNT Standardization Work Plan	Law	2	06:07 PM
7.06	ME	Liaison letter to IEC requesting access to IEC 68025-1 and IEC 68025-2	Law	2	06:09 PM
7.07	ME	IEEE 802.3 Interpretation 1-11/11 response: Simultaneous Output Power	Law	2	06:11 PM
7.08	ME	IEEE 802.3 Interpretation 2-11/11 response: MMD register access	Law	2	06:13 PM
7.09	ME	IEEE 802.3 Interpretation 3-11/11 response: Missing Section	Law	2	06:15 PM
7.10	ME	IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group press release	Law	3	06:17 PM
7.11	ME	Approval of head of delegation for ISO SC6 meeting	Kraemer	3	06:20 PM
7.12	ME	Approval of liaison with P1905.1	Kraemer	3	06:23 PM
8.00		IEEE SA items			06:26 PM
8.01					06:26 PM
8.02					06:26 PM
9.00		Information Items			06:26 PM
9.01	II	Update on upcoming venues – Geneva, July 2013	Heile/Roshdahl	5	06:26 PM
9.02	II	JTC1 ad-hoc report	Myles	5	06:31 PM
9.03	II*	Notification that 802.15 voted 68/0/1 to allow Heile to be a WG chair candidate	Heile	0	06:36 PM
9.04	II*	Notification that 802.1 voted 36/0/0 to allow Jeffree to be a WG chair candidate	Jeffree	0	06:36 PM
9.05	II*	Notification that 802.16 voted 32/0/0 to allow Marks to stand for reelection	Marks	0	06:36 PM
9.06	II	Regulatory report	Lynch	10	06:36 PM
9.07	II	Charles Steinmetz award	Heile/Thompson	5	06:46 PM
9.08	II	Executive secretary report	Rosdahl	5	06:51 PM
9.09	II	802 EC November 2011 Workshop logistics	Kraemer	10	06:56 PM
9.10	II	Appeals report	Gilb	1	07:06 PM
9.11	II	Network Services report	Alfvin	5	07:07 PM
10.00		ADJOURN SEC MEETING	Nikolich		06:00 PM

3.00 II Announcements from the Chair Nikolich 5 01:10 PM

Nikolich announced that there were no announcements.

3.01 MI * APPROVE updated minutes of March opening meeting, 20110314-opening-minutes-v1.pdf Gilb 0

Approved as part of the consent agenda

3.02 MI * APPROVE updated minutes of July opening meeting, 20110718-opening-minutes-v1.pdf Gilb 0

Approved as part of the consent agenda

3.03 MI * APPROVE minutes of July closing meeting, 20110718-opening-minutes-v3.pdf Gilb 0

Approved as part of the consent agenda

4.00 LMSC Internal business

4.01 ME 802.15.9 recommended practice for Key Management, PAR forward to NesCom Heile 5 01:10 PM

Heile presented 15-11-0849-01-000, slides 5-7

Jeffree spoke against the motion. The security experts in 802.1 had concerns about how the transport protocol is being constructed. This appears to create a registration authority for something that could be done with EtherTypes. Using EtherTypes would open this up for all currently defined key systems to be used. Suggested holding teleconferences with 802.1 security experts, but to date no coordination with 802.1.

Suggests waiting until March for time to coordinate.

Bob Moskowitz (Verizon) It may in the future enable the full use of EtherTypes. This is a narrow project to expedite this process as a recommended practice.

Law asked why 802.1 protocols not use 802.1X.

Moskowitz said that 802.1X cannot be used in 802.15.4 because there is not EtherType.

Law asked if this means that 802.15.4 is not an 802 LAN.

Jeffree said if 802.15.4 was an 802 LAN standard there would not be a problem.

Moskowitz said that the limit on the PPDU size creates challenges. It would require above MAC fragmentation.

Rosdahl said that as a recommended practice would explain how to use existing parts. That was 802.11 understanding.

Moskowitz said that he is taking 3 pieces in .4 and 2 pieces in .7 and using those to split the information in the key management protocol and get it across the medium.

Das asked about the list of standards with similar scopes was limited to IEEE or all groups.

Thaler said that it was all groups.

Das said what was the problem with adding the other groups.

Moskowitz said that it was his understanding that it was 802 only.

Thompson said that to use the EtherType requires 2 bytes for the type field and one byte for the extra information for a total of 3 bytes. He asked if the goal to reduce frame size is why there was a new numbering.

Moskowitz said that the registration authority would name new protocols. It would be a more direct interface for new KMPs. He said that at least three bytes is required, but it would be more.

Law said that we are getting into a technical discussion. But from a process view, this is making 802.15.4 more 802 LAN like and these discussions should take place in 802.1

Vote is 7/4/3, motion passes.

Heile said that he will personally ensure that the coordination will be tight.

Thompson said that it will also need coordination with the RAC.

802.15.9 KMP PAR to NesCom

- Comments and Comment responses contained in doc:
  - https://mentor.ieee.org/802.15/dcn/11/15-11-0805-02-0kmp-par-comments.doc
- Revised PAR and 5C can be found at:
  - https://mentor.ieee.org/802.15/dcn/11/15-11-0613-06-0kmp-key-management-protocol-par.doc
  - https://mentor.ieee.org/802.15/dcn/11/15-11-0665-05-0kmp-kmp-5c-draft.doc

802.15.9 KMP PAR to NesCom

- Net result of resolutions:
  - Removed explicit reference to 15.6
  - Added language to clarify or tighten various sections
- In Response, 802.1 felt we needed a yes to 6.1b- we agree and will make that change
- In Response 802.21 agreed with our most of our resolutions but still felt we still should say yes to other similar standards- we continue to disagree

802.15.9 KMP PAR to NesCom

- Motion: 802.15 Working Group seeks EC approval to forward the KMP PAR (15-11-0613-06) including a yes response to 6.1b, to NesCom

(WG 41-1-9)

- Moved: Heile Second: Gilb

4.02 DT Proposal for IEEE 802 University outreach program Law 5 01:28 PM

Law presented 802_University_Outreach_Proposal_pptx.pdf

I asking for an ad-hoc to be created to consider this. The ad-hoc will work out the costs, number of attendees allowed, will the EC subsidize part, what should one day should cost, etc. Goal would be to have this in place in July.

Law said that he needs the Grow someone from Face 2 Face events, Mark Cummings, and David Law as a minimum.

Thompson asked if it would be one day or multiple days.

Nikolich said that

Shellhammer asked if this would happen at interims.

Law said that it could, but it would have to come interim treasury

Das spoke in favor of this.

Mody spoke in favor of this as he started participation as a student.

Marks supports the ad-hoc and offers to participate.

Nikolich will charter the ad-hoc and appoints Law as the chair of the ad-hoc, the mimimum set of individuals are: the Chair, Grow, Mark Cummings, and a representative from Face to Face events. Additional members are possible.

IEEE 802 University Outreach

Proposal to EC

By

Mark Cummings, David Law

Opportunity

- University engagement
  - Expose students & faculty to value of standards
    - Process
    - Importance of standards and their role in evolution of technology and market development
    - Use
- Engage future standards participants and users

Proposal

- Outline
  - One day open to students & faculty to visit meeting
    - May need a limit (first-come, first-served)
  - Outreach to universities local to meeting location
  - Day would start with brief intro
  - Day Fee (if any) based on cost recovery
- Charter an Ad Hoc
  - Develop a detailed proposal
    - Delivered in March 2012
    - First implementation in July 2012

4.03 MI Network services contract status and authorize EC sub-committee (Rigsbee, Grow, Nikolich and Rosdahl) to review RFP results, select vendor and manage completion of contact. **Rosdahl 5 01:38 PM**

Rosdahl presented ec-11-0025-02, slides 3-4.

Meeting planner contract was signed of in the first part of Sept. 2011.

Motion is to authorize an EC subcommittee consisting of Rigsbee, Grow, Nikolich and Rosdahl to receive the network services RFP, select the vendor and manage completion of the contract.

Moved by Rosdahl, seconded by Heile

Marks asked about renewal through March as backup.

Vote is 14/0/0, motion passes

4.03 Meeting Planner and Network Services Contract Extensions

- **The Meeting Planner Contract (Face to Face events) was signed off the first part of Sept. 2011.**

- **The RFP for Network Services is nearly complete. Plan of record is to have it completed and sent out on Dec 1.**
  - Selection of Network Service Provider
  - Signed new Network Service Provider Contract

- **We have an extended Verilan contract through March as a backup to our main plan.**
  - Signed by Verilan and Buzz, sent to IEEE Procurement for signing.

Motion to form Selection Committee

- **Motion: Network services contract status and authorize EC sub-committee (Rigsbee, Grow, Nikolich and Rosdahl) to review RFP results, select vendor and manage completion of contact.**
- **Moved: Jon Rosdahl - 2nd Bob Heile**
- **14-0-0 motion passed.**

4.04 MI Provide alternate method to distribute Standards CD Gilb 5 01:44 PM

Motion is to provide an alternate method of obtaining the Standards CD that places a zipped copy of the CD protected with a password on the local document server for the duration of the session. The password would be given to paid session attendees when they pick up their badge. Providing that the IEEE provides approval for distribution in this manner.

Moved by Gilb, seconded Sherman

Question was if the IEEE was OK from a copyright point of view.

Marks said he wasn't sure why a CD was required.

Thompson was not in favor of both CD and server access. Would prefer that only one method was available.

Law spoke in favor of the motion.

Vote 12/1/1, motion passes

4.05 DT 802 Overview and Architecture report Gilb 3 01:51 PM

Gilb said they have finished resolving comments from the first letter ballot. The current schedule is to complete the draft by the end of November and start a long letter ballot during December. It will be a full ballot as the 802.1 voter pool is stale because it has been over a year since the first ballot.

Kraemer asked for at least 30 days and not to have it end over Christmas.

Jeffree said that it could be as long as 40 days if it runs over Christmas.

4.06 II IEEE 802 EC Interim Teleconference, February 7, 2012, 1-2 pm EST. Rosdahl 5 01:54 PM

Gilb noted that the time is supposed to be 1-3 pm.

Thaler said that she might not be available for the call.

Rosdahl presented ec-11-0025-02, slide 5

4.06: IEEE 802 EC Interim Teleconference -- Feb 7, 2012, 1pm ET

- **The tentative agenda for the Telecon is expected to be determined during our closing session.**
- **Current Agenda includes:**
  1. Single Sales Channel Update -- Paul
  2. Status report on Network RFP -- Rosdahl/Risgbee
  3. Update on November Workshop Action items – Kraemer
  4. Report on July 2013 Meeting options – Rosdahl/Risgbee
  5. AOB

4.07 II Treasurer's report **Grow 10 01:57 PM**

Grow presented the closing treasurer's report, 2011_11 TreasClosing.pdf.

Current estimate is about a 15K surplus.

For March meeting, the estimate is a $66K deficit. Adding lunch would increase the deficit by $75K.

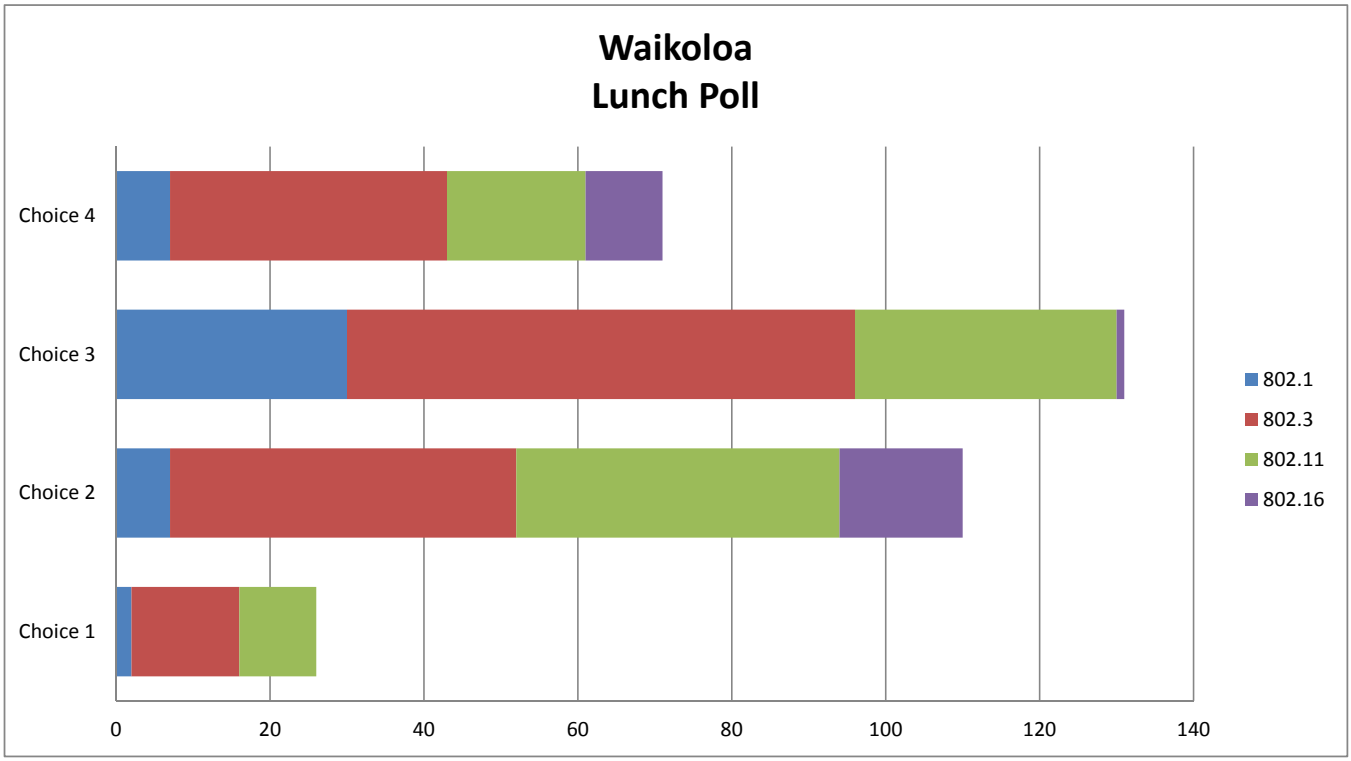
IEEE Project 802
Statement of Operations
November 2011 Plenary Session
Atlanta
As of November 11, 2011

		Estimate			Budget		
Income	**Fee**	**Net**	**Net Amt**	**%**	**Net**	**Net Amt**	**%**
Net Registration Income	$ 474	**760**	$ 360,050	87%	796	$374,350	86%
Non-registration Income							
Deadbeat collections			$ -	0%			0%
Bank interest			$ 900	0%		$ 900	0%
Comps, Commissions & Discounts			$ 55,000	13%		$ 60,000	14%
Other			$ -	0%		$ -	0%
Total Session Income			**$ 415,950**	**13%**		**$ 435,250**	**14%**
Expenses							
Audio Visual			$ 13,000	3%		$ 20,000	5%
Bank Charges			$ 350	0%		$ 350	0%
Credit Card Discounts & Fees			$ 18,003	4%		$ 18,718	4%
Equipment Expenses			$ 14,000	3%		$ 14,000	3%
Get IEEE 802 Conttribution (Net paid attendees * $75.00)			$ 57,000	14%		$ 59,700	14%
Infrastructure			$ 2,750	1%		$ 3,150	1%
Meeting Administration			$ 79,230	20%		$ 75,970	18%
Misc Meeting Expenses			$ 3,500	1%		$ 3,400	1%
Networking			$ 87,000	22%		$ 87,000	20%
Shipping			$ 12,000	3%		$ 12,000	3%
Social			$ 52,000	13%		$ 43,780	10%
Food & Beverage			$ 62,500	16%		$ 87,560	21%
Total Session Expense			**$ 401,333**	**100%**		**$ 425,628**	**100%**
Net Session Surplus/(Loss)			**$ 14,618**			**$ 9,623**	

IEEE Project 802
Statement of Operations
March 2012 Plenary Session
Waikoloa
As of 11 November 2011

	Fee	Budget		
Income		**Net**	**Net Amt**	**%**
Net Registration Income	$ 477	750	$357,750	88%
Non-registration Income				
Deadbeat collections				0%
Bank interest			$ 900	0%
Comps, Commissions & Discounts			$ 50,000	12%
Other			$ -	0%
Total Session Income			**$ 408,650**	**12%**
Expenses				
Audio Visual			$ 20,000	4%
Bank Charges			$ 300	0%
Credit Card Discounts & Fees			$ 17,888	4%
Equipment Expenses			$ 2,000	0%
Get IEEE 802 Conttribution (Net paid attendees * $75.00)			$ 56,250	12%
Infrastructure			$ 7,000	1%
Meeting Administration			$ 76,870	16%
Misc Meeting Expenses			$ 7,700	2%
Networking			$ 86,600	18%
Shipping			$ 20,000	4%
Social			$ 86,250	18%
Food & Beverage			$ 93,750	20%
Total Session Expense			**$ 474,608**	**100%**
Net Session Surplus/(Loss)			**$ (65,958)**	

Option 2 Lunch subsidy would increase the deficit by $75k



802.15 did not take a poll, WG Chair certain Choice 2, Choice 1 would be strongly preferred

Meeting planning will consider this advice

March meeting cancellation fee will likely be increased ($50 -> $100)
March meeting cancellation no fee deadline will likely be increased (Fri prior -> 1 week)

4.08 DT Hawaii meeting fees **Grow 10 02:03 PM**

Choice 1: Increase in meeting fee by $200, no deficit.

Choice 2: $100 increase in meeting fee, $75k deficit.

Choice 3: is the most popular (grab and go lunches). Will be a risk that a minimum number of lunches won't be bought and we would be required to make up the difference.

Choice 4: is longer lunches

Grow is trying to get input from the EC. Those involved in the meeting planning will make the decision. He is also suggesting that there be an increase cancellation fee and advance the date for a no-charge cancellation.

Das said that he had a straw poll and choice 2 was first priority.

Sherman favors 3 as the downside is least and $200 is too much.

Shellhammer favors 2.

Heile favors 2.

Thaler is concerned that we have had 3 meetings in a row that have been a deficit.

Rosdahl said that the increase on the straw poll is close to accurate but not necessarily correct. The initial budgeted number can usually be reduced.

Jeffree spoke in favor of choice 3.

Marks spoke in favor of choice 2, but would ask for a less heavy lunch.

Thompson said that 802.3 was in favor of a combination of choice 3 and 4 (wanting a longer lunch period).

Law asked how the choice was going to be made.

Grow said that Rigsbee, Rosdahl, Grow and Slykhouse will decide based on better numbers, favoring choice 2, with choice 3 as next.

5.00 IEEE Standards Board and Sponsor Ballot Items

5.01 ME 802.22b amendment for Enhanced Broadband and Monitoring, PAR forward to NesCom **Mody 5 02:12 PM**

Mody presented 22-11-0141-02-0000-motions-november-ec-meeting.ppt, slides 3-6

Motion is that the EC approves the P802.22b PAR :22-11-0118Rev4 (RASG) https://mentor.ieee.org/802.22/dcn/11/22-11-0118-04-rasg-par-for-enhanced-broadband-and-monitoring-amendment.doc and 5C: 22-11-0119Rev4(RASG) https://mentor.ieee.org/802.22/dcn/11/22-11-0119-04-rasg-5c-for-enhanced-broadband-and-monitoring-amendment.docx and forwards the PAR to NESCOM

Moved by Mody, seconded by Das

No discussion.

Vote is 14/0/0, motion passes

Motion to Approve the P802.22b PAR on Enhancement for Broadband Services and Monitoring Applications

Working Group Motions – September 2011 Okinawa

Move to approve the contents of the document 22-11-118r1 (https://mentor.ieee.org/802.22/dcn/11/22-11-0118-01-rasg-par-for-enhanced-broadband-ar) as the contents for the P802.22b amendment PAR form and the contents of the document 22-11-119r1 (https://mentor.ieee.org/802.22/dcn/11/22-11-0119-01-rasg-5c-for-enhanced-broadband-and) as 5C as approved by the RASGCIM study group and forward the same to the 802 Executive Committee before October 5th to meet the 30 day rule for consideration during the November plenary for the EC approval. Move to upload the PAR to the IEEE SA NESCOM before October 17th pending approval from the Sponsor Chair, so that it can be on the agenda for the December meeting of the NESCOM.

Move: Aziz Rahman

Second: Jerry Kalke

Yes: 8

No: 0

Abstain: 0

Motion passes

P802.22b Comments and Resolutions

- Subsequently 802.22 Working Group received comments from 802.19 and 802.11 Working Groups and James Gilb on the PAR and 5C.
- These comments were addressed and resolved. Steve Shellhammer (802.19) and Jon Rosdahl (802.11) were invited to participate in the discussions and comment resolutions. James was notified of the change based on his comment and he expressed his satisfaction.
- The comments and resolutions can be found in the following presentation: 22-11-0139-04-rasg. https://mentor.ieee.org/802.22/dcn/11/22-11-0139-04-rasg-response-to-commen
- The contents of the revised PAR and 5C documents can be found in the following documents:
- PAR - 22-11-0118Rev4 (RASG) https://mentor.ieee.org/802.22/dcn/11/22-11-0118-04-rasg-par-for-enhanced-br
- 5C - https://mentor.ieee.org/802.22/dcn/11/22-11-0119-04-rasg-5c-for-enhanced-bro

WG Motion #6 Approving the Revised PAR and 5C (
https://mentor.ieee.org/802.22/dcn/11/22-11-0142-00-0000-802-22-wg-motions-november-p
)

Move to approve the contents of the document:22-11-0118Rev4 (RASG)
https://mentor.ieee.org/802.22/dcn/11/22-11-0118-04-rasg-par-for-enhanced-broadband-ar
and document: 22-11-0119Rev4(RASG)
https://mentor.ieee.org/802.22/dcn/11/22-11-0119-04-rasg-5c-for-enhanced-broadband-and
as the contents of the P802.22b Broadband Extension and Monitoring PAR and 5C respectively to be forwarded to the IEEE 802 EC. To allow the Chair to make a motion during the November Closing EC Meeting seeking approval to submit the PAR form to IEEE SA NESCOM. To allow the Chair to make subsequent submission of the PAR form to the IEEE SA NESCOM upon its approval from the EC and highlight the changes as contained in the new PAR form to the NESCOM administrator. To allow the Chair to make the necessary changes to the PAR form at his discretion based on the comments from IEEE 802 EC or the IEEE SA NESCOM members and submit the revised PAR to the NESCOM.
Move: Aziz Rahman
Second: Chang-woo Pyo
For: 9, Against: 0, Abstain: 0 Motion Passes

EC Motion – To Forward P802.22b PAR and 5C to NESCOM

Move that the EC approves the P802.22b PAR :22-11-0118Rev4 (RASG)
https://mentor.ieee.org/802.22/dcn/11/22-11-0118-04-rasg-par-for-e
and 5C: 22-11-0119Rev4(RASG)
https://mentor.ieee.org/802.22/dcn/11/22-11-0119-04-rasg-5c-for-enl
and forwards the PAR to NESCOM

Move: Apurva Mody
Second: Subir Das
For:
Against:
Abstain:

5.02 MI 802.22.2 forward to Sponsor Ballot (conditional) Mody 10 02:11 PM

Mody presented 22-11-0141-02-0000-motions-november-ec-meeting.ppt, slides 8-13

Motion is Motion to grant conditional approval as per the IEEE 802 Operations Manual to forward IEEE P802.22.2 to the Sponsor Ballot.

Moved by Mody, seconded by Heile

Thaler said that normally we get presented with the disapprove comments or a summary of them.

Mody said that they are at the end of the slide deck.

Vote is 14/0/0, motion passes.

Nikolich recognized Mody and 802.22 for being awarded the emerging technology awards.

Thaler said that other groups work with the commenters to see if they have accepted the resolutions and present only the ones that are still a problem.

Nikolich said that Gerald Chouinard, the Vice Chair from the beginning of the group, is retiring.

Motion for a Conditional Approval to forward the IEEE P802.22.2 to the IEEE Sponsor Ballot

Rules

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 confirmation ballot and resolution meeting.**

Motion for a Conditional Approval to forward the IEEE P802.22.2 to the IEEE Sponsor Ballot

- Date the last ballot closed: WG Letter Ballot 2 - September 20th 2011
- Vote tally including Approve, Disapprove and Abstain votes:
  Ballot Pool = 24, Response = 21 (87.5%),
  # of comments = 129
  Number of Approves = 14
  Number of Disapproves = 3
  Number of Abstains = 4
  Approval Ratio = 78.5%
- Comments that support the remaining disapprove votes and Working Group responses – The negative comments and working group responses have been provided as a reference.
- Schedule for confirmation ballot and resolution meeting – All the comments for the P802.22.2 Draft v2.0 have been addressed and resolved. We are planning to launch the WG Re-circ #1 on Draft v3.0 by Nov. 25th 2010.

Negative Comments and Resolutions

- **P802.22.2 – Current Negative Comments Draft v2.0, WG Letter Ballot 2**

Commentor	# of Comments
Apurva Mody	23 (3 Editorial, 20 Technical)
Shigenobu Sasaki	2 (2 Editorial)
Tom Gurley	9 (7 Editorial, 2 Technical)

All comments have been addressed and resolved: The negative comments and their resolutions can be found in the following spreadsheet:
https://mentor.ieee.org/802.22/dcn/11/22-11-0111-07-0002-ieee-p802-22-2-reco
The negative comments and their resolution are also presented in the reference section at the end of this presentation.

Motion for a Conditional Approval to forward the IEEE P802.22.2 Draft Standard to the IEEE SA RevCom

Time-line for the Launch of P802.22 WG Re-circ #1 and Sponsor Ballot #1

- Nov. 25th 2011 - Issue IEEE P802.22 Draft v3.0, Begin Re-circ #1
- Address and Resolve Comments
- Dec. 2011 Start the Formation of the Sponsor Ballot Pool
- Jan. 21st 2012 – Issue Draft v4.0 and Launch Re-circ #2
- Feb. 5th 2012 – Re-circulation Ballot #2 Closes
- Feb. 27th 2012 – Launch Sponsor Ballot #1

WG Motion

P802.22.2 WG Motion 2 – Document – 22-11-0142 Rev0 (https://mentor.ieee.org/802.22/dcn/11/22-11-0142-00-0000-802-22-wg-motions-n)

Move to authorize the P802.22 WG Chair to make a motion to the IEEE 802 Executive Committee Meeting for a conditional approval to forward the P802.22.2 Draft Standard to the Sponsor Ballot and to launch the Sponsor Ballot based on the latest P802.22 Draft that has met all the conditions as stated in the IEEE 802 Operations Manual

Move: Tom Gurley
Second: Shigenobu Sasaki
Discussion:
For: 9
Against: 0
Abstain: 0
Motion Passes

Motion for a Conditional Approval to forward the IEEE P802.22.2 Draft Standard to the Sponsor Ballot

Motion to grant conditional approval as per the IEEE 802 Operations Manual to forward IEEE P802.22.2 to the Sponsor Ballot.

Move: Apurva N. Mody,

Second:

For:

Against:

Abstain:

Motion Passes / Fails

5.04 ME 802.1Q-2011 corrigendum PAR forward to NesCom Jeffree 5 02:25 PM

Jeffree presented 2011-11-exec-motions.pdf, slide 2

Mtion is 802.1 requests approval from the EC to submit the 802.1Q-2011 Corrigendum draft PAR to NesCom.
http://www.ieee802.org/1/files/public/docs2011/new-p802-1q-2011-cor-2-draft-par.pdf

Moved by Jeffree, seconded by Thaler

No discussion.

Vote is 14/0/0, motion passes.

MOTION

- Motion: 802.1 requests approval from the EC to submit the 802.1Q-2011 Corrigendum draft PAR to NesCom.
- http://www.ieee802.org/1/files/public/docs2011/new-p802-1q-2011-cor-2-draft-par.pdf

- Proposed: Congdon
- Second: Messenger
  - For: 31
  - Against: 0
  - Abstain: 0

  - Passes

5.05 MI 802.1BR forward to Sponsor ballot (conditional) Jeffree 10 02:28 PM

Jeffree presented 2011-11-exec-motions.pdf, slides 3-4

Motion is 802.1 requests conditional approval to forward P802.1BR to sponsor ballot.

Moved by Jeffree, seconded by Thaler

No discussion.

Vote is 14/0/0, motion passes.

MOTION

- 802.1 requests conditional approval to forward P802.1BR to sponsor ballot.
- Proposed: thaler
- Second: Pelissier
- For: 17 Against: 0 Abstain: 11
- passes
- EC proposed: Jeffree Second: Thaler
- For: XX Against: XX Abstain: XX

P802.1BR supporting material

- WG Recirc closed: October 31
- Total responses: 46 Response rate: 88.5%
- Approve: 20 Disapprove: 1 Abstain: 25 Approval rate: 95.2%
- Outstanding Disapprove comments (Parsons):

  Comment 1479: Unfortunately I missed the discussion (#$%@#$%). And while I don not agree with the outcome of the meeting, the resolution (part c) of comment 1283 is not correctly implemented. The module identity currently duplicates the LLDP V2 extensions MIB that is in 802.1Q,

  Suggested Remedy: Fix the module identity for this MIB module.

  Response: Accept

  Status: This has been fixed in the current draft.

  Comment 1480: Do not publish multiple REVISION lines as this will be the first pubication of this module.

  Suggested Remedy: Only have one REVISION line

  Response: Accept

  Status: All but the most recent REVISION line have been removed in the current MIB.

- Recirc already started. Comment resolution, if necessary, by telecon meetings.

5.06 MI 802.1Qbg forward to Sponsor ballot (conditional) Jeffree 10 02:29PM

Jeffree presented 2011-11-exec-motions.pdf, slides 5-6

Motion is 802.1 requests conditional approval to forward P802.1Qbg to sponsor ballot.

Moved by Jeffree, seconded by Thaler

No discussion.

Vote is 14/0/0, motion passes.

MOTION

- 802.1 requests conditional approval to forward P802.1Qbg to sponsor ballot.
- Proposed: thaler
- Second: lynch
- For: 23 Against: 0 Abstain: 5
- passes
- EC proposed: Jeffree Second: Thaler
- For: XX Against: XX Abstain: XX

P802.1Qbg supporting material

- WG Recirc closed 1 November
- Total responses: 44 Response rate: 84.6%
- Approve: 28 Disapprove: 0 Abstain: 16
  Approval rate: 100%
- Outstanding Disapprove comments: None.
- Recirc will start in the next week. Comment resolution, if necessary, by telecon meetings.

5.07 MI 802.1AXbk forward to Sponsor ballot **Jeffree 5 02:30 PM**

Jeffree presented 2011-11-exec-motions.pdf, slides 7-8

Motion is 802.1 requests conditional approval to forward P802.1AXbk to sponsor ballot.

Moved by Jeffree, seconded by Thaler

No discussion.

Vote is 14/0/0, motion passes.

MOTION

- 802.1 requests EC approval to submit P802.1AXbk to Sponsor Ballot.

- Proposed: Haddock Second: messenger
- For: 25 Against: 0 Abstain: 5
- passes

- EC proposed: Jeffree Second: XXX
- For: XX Against: XXAbstain: XX

P802.1AXbk supporting material

- WG Recirc closed 24th October
- Total responses: 34 Response rate: 77%
- Approve: 23 Disapprove: 0 Abstain: 11
  Approval rate: 100%
- Outstanding Disapprove comments: None.

5.09 ME 802.3bh Ethernet Maintenance, forward to Sponsor Ballot (conditional) **Law** **10** **02:30 PM**

Law presented 802d3_1111_closing_EC.pdf, slides 3-5.

Motion is The LMSC Executive Committee grant Sponsor Ballot conditional approval for IEEE P802.3 (IEEE 802.3bh)

Moved by Law, seconded by Grow

No discussion.

Vote is 14/0/0, motion passes.

IEEE P802.3 (IEEE 802.3bh) Maintenance #10 (revision) conditional to Sponsor ballot

- Item 1 - Date the ballot closed:
  - The 1st Working Group ballot recirculation on IEEE P802.3 draft D2.1 closed on October 27th at 11:59 PM AOE.
- Item 2 - Vote tally:

Comments: 92	WG 1st Recirculation Draft D2.1			Req %
	#	%	Status	
Abstain	2	2.33	PASS	< 30
Disapprove with comment	5	-	-	-
Disapprove without comment	0	-	-	-
Approve	79	94.05	PASS	≥ 75
Ballots returned	86	68.80	PASS	> 50
Voters	125	-	-	-

IEEE P802.3 (IEEE 802.3bh) Maintenance #10 (revision) conditional to Sponsor ballot

- Item 3 - Comments that support the remaining disapprove votes and WG responses
  - 24 unresolved negative comments from 5 commenters
    - Initial: 14 comments from 4 commenters
    - 1st recirculation: 10 from 2 commenters (one of which is from initial)
  - See attached file 'IEEE802d3_WG_unsatisfied_comments.pdf'

- Item 4 - Schedule for recirculation ballot and resolution meeting
  - Estimated recirculation ballot open date November 18, 2011
  - Estimated recirculation ballot close date December 3, 2011
  - Proposed interim meeting date December 12, 2011

IEEE P802.3 (IEEE 802.3bh) Maintenance #10 (revision) conditional to Sponsor ballot

- The LMSC Executive Committee grant Sponsor Ballot conditional approval for IEEE P802.3 (IEEE 802.3bh)

  M: D Law, S: ????

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

  Working Group vote:

  Y: 74, N: 0, A: 0

5.11 MI 802.11ad forward to Sponsor ballot (conditional) Kraemer 10 02:34 PM

Kraemer presented 11-11-1584-00-0000-november-2011-ec-motions.ppt, slides 2-4 and 11-11-1447-03

Motion is to grant conditional approval to forward P802.11ad to Sponsor Ballot.

Grow asked if there was a decay in the number of comments over the recirculations.

Kraemer said that there were 1229 comments in the first ballot and 41 in the last recirculation.

Moved by Kraemer, seconded by Marks

Vote is 14/0/0, motion passes

Motion – 802.11ad Conditional Approval to Sponsor Ballot

- **Grant conditional approval to forward P802.11ad to Sponsor Ballot.**
- **Moved: Bruce Kraemer**
- **Seconded:**

- **Document 11-11/1447r3 is the report the requirements for conditional approval to forward P802.11ad to Sponsor Ballot**
- **URL: https://mentor.ieee.org/802.11/dcn/11/11-11-1447-03-00ad-conditional-sb-r**

- **Result in WG: 73,0,11**

Cl 9.2.5.4 Draft 1 Page 159.43 Comment# 114
Chaplin, Clint

Comment Type ER Resolution Status Revised MAC - DCF

".11 Editor's instructions: fix sentence in the last paragraph as follows:" "fix" is not a valid instruction

SuggestedRemedy

"change" or "modify"

Response

AGREE IN PRINCIPLE (TGad: 2011-02-09 01:14:55Z)

paragraph was removed.

Cl 9.7d.2 Draft 1 Page 164.35 Comment# 115
Chaplin, Clint

Comment Type ER Resolution Status Revised MAC - Aggregation

.11 Editor Note: change all occurrences of "HT" by "HT/mmWave" and of "Table 7-43l" by "Table 35 7-43l for an HT STA and in the mmWave Capabilities element for an mSTA"

SuggestedRemedy

.11 Editor Note: change all occurrences of "HT" to "HT/mmWave" and of "Table 7-43l" to "Table 35 7-43l for an HT STA and in the mmWave Capabilities element for an mSTA"

Response

AGREE IN PRINCIPLE (TGad: 2011-02-09 16:28:17Z)

See CID775

Cl 9.7d.3 Draft 1 Page 165.03 Comment# 116
Chaplin, Clint

Comment Type ER Resolution Status Accepted MAC - Aggregation

.11 Editor Note: change all occurrences of "HT" by "HT/mmWave", of "Table 7-43l" by "Table 7-3 43l for an HT STA and in the mmWave Capabilities element for an mSTA", and of "20.6" by "20.6 4 for an HT STA and 21 for an mSTA"

SuggestedRemedy

.11 Editor Note: change all occurrences of "HT" to "HT/mmWave", of "Table 7-43l" to "Table 7-3 43l for an HT STA and in the mmWave Capabilities element for an mSTA", and of "20.6" to "20.6 4 for an HT STA and 21 for an mSTA"

Response

AGREE (TGad: 2011-02-09 16:28:39Z)

Showing the exact changes.

Cl 9.23.6.2 Draft 1 Page 175.18 Comment# 117
Chaplin, Clint

Comment Type ER Resolution Status Accepted MAC - DTT

"CBP only" this is really confusing. Is this a field that is named "CBP only", or is this a field that is only "CBP"?

SuggestedRemedy

"CBP Only" or "CBP-only" or use quotes. This is a problem throughout this document.

Response

AGREE (TGad: 2011-02-10 00:27:30Z)

Capitalize all.

Cl 11.1.2 Draft 1 Page 240.07 Comment# 118
Chaplin, Clint

Comment Type ER Resolution Status Revised MAC - Sync

".11 Editor Note: modify the first paragraph as indicated below"

SuggestedRemedy

".11 Editor Note: modify the first two paragraphs as indicated below"

Response

AGREE IN PRINCIPLE (TGad: 2011-02-11 01:01:02Z)

Cl 11.1.3 Draft 1 Page 245.27 Comment# 119
Chaplin, Clint

Comment Type TR Resolution Status Accepted Motion 37

"respectively" means a one to one relationsip between the stuff before the word and the stuff after the word. Unfortunately, there are two things before this instance of "respectively" and three things after, breaking the requirement for a one-to-one relationship.

SuggestedRemedy

Reword.

Response

AGREE (TGad: 2011-01-26 23:25:15Z)

1) Delete ", respectively,"
2) In L26 and L27 replace "and" with "or", since it can never be both.

Cl 8.3.1.18 Draft 4 Page 128 Comment# 4067
Hunter, David

Comment Type ER Resolution Status Accepted

This is the first instance of "A-BFT" in the text, so per the IEEE Style Manual it must be defined here.

SuggestedRemedy

Repalce "A-BFT" with "association beamforming training (A-BFT) period".

Response

ACCEPTED (LB183: 2011-08-18 22:14:03Z)

Cl 8.3.4.1 Draft 4 Page 136 Comment# 4068
Hunter, David

Comment Type ER Resolution Status Accepted

This is the first instance of "AT" in the text, so per the IEEE Style Manual it must be defined here.

SuggestedRemedy

Replace "AT" with "announcement time (AT) period".

Response

ACCEPTED (LB183: 2011-08-18 22:17:27Z)

Cl 8.5.3.2 Draft 4 Page 204 Comment# 4069
Hunter, David

Comment Type TR Resolution Status Rejected Motion 57

The extended ADDTS frames apply only in PBSSs and not to BSSs and IBSSs that operate in the Dband.

SuggestedRemedy

Replace "DBand ADDTS" with "PBSS ADDTS" throughout the draft.

Response

REJECTED (LB183: 2011-08-10 23:19:48Z)

See CID4042. Everything in the DBand is unified for all types of BSSs.

Cl 9.2.1 Draft 4 Page 238 Comment# 4070
Hunter, David

Comment Type ER Resolution Status Revised

The definitions of "A-BFT" and "AT" in subclause 3.3 do not include the term "period".

SuggestedRemedy

Move each of these acronyms in front of the word "period" in each reference. In addition, of these terms are assumed to include the word "period" in the figure, then add "period" into each loction in the figure.

Response

REVISED (LB183: 2011-08-18 23:12:52Z)

As noted, move "(A-BFT)" and "(AT)" before "period"

Cl 9.2.1 Draft 4 Page 238 Comment# 4071
Hunter, David

Comment Type TR Resolution Status Revised Motion 58

Figure 9-1 indicates that the MAC architecture always includes both one of the other PHYs and a DCF MAC but also a DBand PHY and DCA MAC.

SuggestedRemedy

This is inaccurate. Worse, it would destroy legacy 802.11 definitons. Make the DBand part into a separate figure, label Figure 9-1 "MAC architecture in the OBand" and Figure 9-1a "MAC architecture in the DBand". In addtion, you might add multiple MAC SME information from Figure 4-16a (after it is corrected) into Figure 9-1a.

Response

REVISED (LB183: 2011-08-19 16:26:54Z)

There is a simpler solution than having two figures. Include a brace covering each band, captioned "STA operating in the OBand" and "STA operating in the DBand". Keep in mind that DBand operation is in itself optional as indicated by its MIB variable.

Whether or not an implementation will cover both bands is a totally separate issue.

Cl 9.3.2.2 Draft 4 Page 241 Comment# 4072
Hunter, David

Comment Type TR Resolution Status Accepted Motion 57

"if multiple NAVs are supported as defined in 9.33.10" -- but 9.33.10 does not talk about supporting multiple NAVs. Instead it talks about supporting multiple NAV timers.

SuggestedRemedy

Replace "NAVs" with "NAV timers".

Response

ACCEPTED (LB183: 2011-08-12 22:44:17Z)

P802.11ad Report to EC on Conditional Approval to go to Sponsor Ballot

Date: 2011-11-10

Authors:

Name	Company	Address	Phone	email
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Bruce Kraemer	Marvell	5488 Marvell Lane, Santa Clara, CA, USA 95054	**321-427-4098**	bkraemer@marvell.com

Introduction

- **This document contains the report to the IEEE 802 Executive Committee in support of a request for conditional approval to send IEEE P802.11ad Draft 5.0 to Sponsor Ballot.**
- **This document was approved during the plenary session of the 802.11 working group on 9 November 2011.**
  - Passed in the Working Group 73 yes, 0 no , 11 abstain

P802.11ad Draft Stability

Draft	Date	Number of Pages
1.0	Sept 2010	385
2.0	March 2011	500
3.0	May 2011	552
4.0	July 2011	597
5.0	Sept 2011	601

802.11 WG Letter Ballot Results – P802.11ad

Ballot ID	Ballot Close Date	Title	Ballot Type	Pool	Return	%Return	Abstain	%Abstain	Approve	Disapprove	%Approve
168	24 Oct 2010	Technical Letter Ballot for TGad draft 1.0	Technical	278	213	77	26	12	163	24	87
174	5 April 2011	First Recirculation Ballot for TGad draft 2.0	Recirculation	278	225	81	25	11	175	25	88
177	1 June 2011	Second Recirculation Ballot for TGad draft 3.0	Recirculation	278	228	82	24	11	188	16	92
183	9 Aug 2011	Third Recirculation Ballot for TGad draft 4.0	Recirculation	278	228	82	22	10	195	11	95
185	6 Oct 2011	Fourth Recirculation Ballot for TGad draft 5.0	Recirculation	278	228	82	19	8	196	13	94
		Post Ballot 185 vote changes		278	228	82	19	8	197	12	94

802.11 WG Letter Ballot Comments – P802.11ad

Ballot ID	Ballot Close Date	Title	Total Number of Comments received (Yes and No votes)
168	24 Oct 2010	Technical Letter Ballot for TGad draft 1.0	1229 (670 T, 559 E)
174	5 April 2011	First Recirculation Ballot for TGad draft 2.0	330 (198 T, 132 E)
177	1 June 2011	Second Recirculation Ballot for TGad draft 3.0	214 (133 T, 81 E)
183	9 Aug 2011	Third Recirculation Ballot for TGad draft 4.0	165 (95 T, 70 E)
185	6 Oct 2011	Fourth Recirculation Ballot for TGad draft 5.0	41 (27 T, 14 E)

Unsatisfied Technical comments by commenter

Voter	LB168	LB174	LB177	LB183	LB185		Total
Ashley, Alex (NDS Limited)	10				3		13
Bahr, Michael (Siemens AG)	6						6
Chaplin, Clint F (SAMSUNG)	13	5	5	3			26
Hamilton, Mark (Polycom, Inc.)	24	9	7	8	3		51
Hiertz, Guido R. (Philips)	33						33
Hunter, David (TimeFactor)				47	16		63
Ji, Lusheng (AT&T)	1						1
Marshall, Bill (AT&T Labs Research)	37						37
Mccann, Stephen (Research In Motion Limited)					3		3
Miller, Robert R (AT&T)	4						4
Rosdahl, Jon W (CSR)		2	13	30			45
Vlantis, George A (STMicroelectronics)					1		1
Total							**283**

Unsatisfied Technical Comments – Topics

Topic	Beamforming	PHY	MAC (frame formats)	MAC (MLME)	MAC (Others)	General	Total
Ashley, Alex (NDS Limited)			6		5	2	13
Bahr, Michael (Siemens AG)			6				6
Chaplin, Clint F (SAMSUNG)			8	1	9	8	26
Hamilton, Mark (Polycom, Inc.)			9	6	1	35	51
Hiertz, Guido R. (Philips)			4		21	8	33
Hunter, David (TimeFactor)			11	4	17	31	63
Ji, Lusheng (AT&T)					1		1
Marshall, Bill (AT&T Labs Research)			17	1	15	4	37
Mccann, Stephen (Research In Motion Limited)					1	2	3
Miller, Robert R (AT&T)	1	1		1	1		4
Rosdahl, Jon W (CSR)	8		15	4	10	8	45
Vlantis, George A (STMicroelectronics)						1	1
Total	9	1	76	17	81	99	**283**

Unsatisfied Editorial comments by commenter

Voter	LB168	LB174	LB177	LB183	LB185		Total
Ashley, Alex (NDS Limited)	3				4		7
Bahr, Michael (Siemens AG)							0
Chaplin, Clint F (SAMSUNG)	22	8	4	3			37
Hamilton, Mark (Polycom, Inc.)							0
Hiertz, Guido R. (Philips)							2
Hunter, David (TimeFactor)				13	7		20
Ji, Lusheng (AT&T)	2						2
Marshall, Bill (AT&T Labs Research)	19						19
Mccann, Stephen (Research In Motion Limited)							0
Miller, Robert R (AT&T)							0
Rosdahl, Jon W (CSR)		1	9	20			30
Vlantis, George A (STMicroelectronics)							0
Total							117

Unsatisfied Editorial Comments – Topics

Topic	Beamforming	PHY	MAC (frame formats)	MAC (MLME)	MAC (Others)	General	Total
Ashley, Alex (NDS Limited)		1	1	1	2	2	7
Chaplin, Clint F (SAMSUNG)		1	7	7	14	8	37
Hiertz, Guido R. (Philips)					2		2
Hunter, David (TimeFactor)			3		3	14	20
Ji, Lusheng (AT&T)	1				1		2
Marshall, Bill (AT&T Labs Research)			7			12	19
Rosdahl, Jon W (CSR)	9		7	1	7	6	30
Total	**10**	**2**	**25**	**9**	**29**	**42**	**117**

Unsatisfied comments

- **The composite of all unsatisfied comments and the resolutions approved by the comment resolution committee received during working group ballot may be found in the embedded document on the right:**
  - Double click on the icon to the right to open this.

Microsoft Office Excel Worksheet

- **A copy of this same data presented using MyBallot access database report format is attached.**
  - Double click on the icon to the right to open this.

Adobe Acrobat Document

TGad Timeline

	Open	Close
Fifth recirculation (TGad D5.0)	9-Nov-11	24-Nov-11
First sponsor ballot	*19-Dec-11*	*18-Jan-12*
Second sponsor ballot	*13-Mar-12*	*27-Mar-12*
Third sponsor ballot	*16-Apr-12*	*30-Apr-12*
Fourth sponsor ballot	*17-May-12*	*31-May-12*
Fifth sponsor ballot	*16-Jun-12*	*30-Jun-12*
EC to RevCom July-12		
RevCom to SB Dec-12		

5.12 ME 802.11mb forward to RevCom (conditional) Kraemer 10 02:42 PM

Kraemer presented 11-11-1584-00-0000-november-2011-ec-motions.ppt, slides 5-7 and 11-11-1533-01.

Motion is to grant conditional approval to forward P802.11REVmb to RevCom

Nikolich asked for the result of the vote in the WG.

Stephens said that it was 48/0/0

Moved by Kraemer, seconded by Marks

Vote is 14/0/0, motion passes

Motion – 802.11REVmb Conditional Approval to RevCom

- **Grant conditional approval to forward P802.11REVmb to RevCom.**
- **Moved: Bruce Kraemer**
- **Seconded:**

- **Document 11-11/1533r1 is the report the requirements for conditional approval to forward P802.11REVmb to RevCom**
- **URL: https://mentor.ieee.org/802.11/dcn/11/11-11-1533-01-000m-excom-request-**

- **Result in WG:**

Cl 3 Draft 1 Page 25.29 Comment# 4
Ashley, Alex

Comment Type ER Resolution Status Rejected Definitions

You have to define each acronym before it is used in every definition.

SuggestedRemedy

Give full name for QoS, mmWave, PPDU before its first use

Response

DISAGREE (TGad: 2011-02-02 23:46:05Z)

mmWave is no longer used. QoS and PPDU are defined in the baseline.

Cl 3 Draft 1 Page 25.39 Comment# 6
Ashley, Alex

Comment Type ER Resolution Status Rejected Definitions

You have to define each acronym before it is used in every definition.

SuggestedRemedy

Give full name for PPDU, mmWave, PHY before its first use

Response

DISAGREE (TGad: 2011-02-02 23:49:02Z)

Defined in the baseline

Cl 5.2.6 Draft 1 Page 30.36 Comment# 8
Ashley, Alex

Comment Type TR Resolution Status Revised Motion 37

A global replace of "AP" with "AP and PCP" does not produce valid text, a more detailed instruction is required.

SuggestedRemedy

Examine the baseline text and provide detailed edit instructions when adding PCP to the text.

Response

AGREE IN PRINCIPLE (TGad: 2011-02-01 16:46:43Z)

See 802.11-11/212r1

Cl 7.1.4 Draft 1 Page 39.22 Comment# 11
Ashley, Alex

Comment Type TR Resolution Status Revised Motion 37

A global replace of "TXOP" with "TXOP and SP" is not correct. For example "transmitted under EDCA by a STA that initiates a TXOP" becomes "transmitted under EDCA by a STA that initiates a TXOP and SP". In this example it probably should be "TXOP or SP" but in other places "TXOP and SP" is correct.

SuggestedRemedy

Examine the baseline text and provide detailed edit instructions when adding SP to the text.

Response

AGREE IN PRINCIPLE (TGad: 2011-02-01 22:44:08Z)

See 802.11-11/212r1

Cl 7.2.3 Draft 1 Page 48.1 Comment# 12
Ashley, Alex

Comment Type TR Resolution Status Rejected Motion 28

What is "a STA contained in the PCP"? Does this mean the STA is the PCP?

SuggestedRemedy

As in comment

Response

DISAGREE (TGad: 2010-12-18 23:40:23Z)

This is the same language used in the baseline. For example, see second para of (7.2.1.4 PS-Poll frame format) in 802.11-2007.

And, yes, the commenter is correct is his understanding.

Cl 7.3.2.21.1 Draft 1 Page 57.09 Comment# 13
Ashley, Alex

Comment Type TR Resolution Status Rejected Motion 30

Where is the country field?

SuggestedRemedy

As in comment

Response

DISAGREE (TGad: 2011-01-10 23:14:51Z)

1) There is no need for a country field. 802.11 spec already has a country IE that, if needed, can be used in conjunction with this IE
2) Further to (1), please note in the baseline 802.11 spec that no country field is needed for this type of measurement request. As an example, please refer to 7.3.2.21.4 or 7.3.2.21.5 in TGmb D4.0.

Cl **9.1** *Draft* **1** *Page* **151.38** *Comment#* 23
Ashley, Alex

Comment Type **ER** *Resolution Status* **Revised** *MAC - Architecture*

"Replace" is a powerful and rather dangerous editing instruction. It assumes that 11ad is 100% up to date with all changes to REVmb + 4 amendments before it.

SuggestedRemedy

Use "change the first paragraph" and show the changes from the 11ad baseline

Response

AGREE IN PRINCIPLE (TGad: 2011-02-09 00:17:30Z)

Define specific subclause to constrain this change

Cl **7.1.3.1.2** *Draft* **1** *Page* **36.1** *Comment#* 34
Bahr, Michael

Comment Type **TR** *Resolution Status* **Rejected** *Motion 24*

There is no justification or need, nor a practical reason to define the mmWave Beacon as and extension frame type. A beacon is a management type, so it should be defined as a management type.

SuggestedRemedy

* define the mmWave Beacon as new Management frame type. There are a few reserved ones.* remove the last two lines from the changed table 7-1.* Remove 7.2.4

Response

DISAGREE (TGad: 2010-11-14 21:39:11Z)

1) The beacon incurs a large overhead in 60GHz. The rate at which the beacon is sent in a practical configuration can be 3000 times less than the data rate. So, the overhead needs to be minimized.
2) This allocation was already made by ANA.

Cl **7.1.3.1.3** *Draft* **1** *Page* **37.01** *Comment#* 36
Bahr, Michael

Comment Type **TR** *Resolution Status* **Revised** *Motion 25*

If a field does not exist, it means, that it is not there and the following fields are at this position. That would result in the Power Management field being at bit 8 in control frames of subtype control frame extension. This will break the standard. But I guess this is not the result that was intended.

SuggestedRemedy

Change the sentence into "In Control frames of subtype Control frame extension, these fields are not defined and their space is part of the Extended Subtype field (reference)."

Response

AGREE IN PRINCIPLE (TGad: 2010-12-02 17:55:52Z)

1) A few editorial changes. Replace the sentence with "In Control frames of subtype Control frame extension, the To DS and From DS fields are not defined and their bit positions are part of the Extended Subtype field (see 7.1.3.1.2, Table 2)."

2) Do the same change in 7.1.3.1.4 and 7.1.3.1.5.

3) Include/modify figure 7-2 (TGmb D4.0) "Frame Control Field" and show that B8-B11 is now the Control frame extension subtype in the DBand.

Cl **7.1.3.1.4** *Draft* **1** *Page* **37.11** *Comment#* 37
Bahr, Michael

Comment Type **TR** *Resolution Status* **Revised** *Motion 26*

If a field does not exist, it means, that it is not there and the following fields are at this position. That would result in the Power Management field being at bit 8 in control frames of subtype control frame extension. This will break the standard. But I guess this is not the result that was intended.Furthermore, the sentence is wrong. The field does exist for control frames, only the control frames of subtype Control frame extension have it not.Moreover, the name of the control frame is wrong.

SuggestedRemedy

Change the sentence into "In Control frames of subtype Control frame extension, this field is not defined and its space is part of the Extended Subtype field (reference)."

Response

AGREE IN PRINCIPLE (TGad: 2010-12-02 18:00:38Z)

See CID36

P802.11 REVmb report to EC on request for conditional approval to proceed to RevCom

Date: 2011-11-10

Authors:

Name	Company	Address	Phone	email
Dorothy Stanley	Aruba Networks	1322 Crossman Ave Sunnyvale, CA 94089	+1 (630) 363 1389	dstanley@arubanetworks.com
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Summary

- P802.11REVmb D12.0 is currently in recirculation ballot
- The most recently completed ballot (the 5th recirculation on D11.0) achieved 94% approval
- This presentation is the report to the IEEE 802 executive committee in support of a request for conditional approval to proceed to IEEE-SA RevCom

IEEE 802 Sponsor Ballot Results – P802.11REVmb

Draft	Opened	Closed	Days	Pool	For	%	Against	%	Abstain	%	Return	%	#Cmnts
6.00	2010-09-21	2010-11-05	45	186	122	86.5	19	13.5	9	6	150	80.6	454
7.00	2011-02-03	2011-02-18	15	186	132	90.4	14	9.6	9	5.8	155	83.3	132
8.00	2011-03-25	2011-04-14	20	186	136	91.9	12	8.1	10	6.3	158	84.9	863
9.00	2011-06-02	2011-06-22	20	186	139	93	11	7	10	6	160	86	208
10.00	2011-08-18	2011-09-07	20	186	142	92	13	8	9	5	164	88	257
11.00	2011-10-07	2011-10-22	15	186	147	94	9	5	8	5	164	88	92

Revision – 802.11

- Revision of IEEE Std 802.11™-2007 as amended by
  - IEEE Std 802.11k™-2008
  - IEEE Std 802.11r™-2008
  - IEEE Std 802.11y™-2008
  - IEEE Std 802.11w™-2009
  - IEEE Std 802.11n™-2009
  - IEEE Std 802.11p™-2010
  - IEEE Std 802.11z™-2010
  - IEEE Std 802.11v™-2011
  - IEEE Std 802.11u™-2011
  - IEEE Std 802.11s™-2011
- 1200 pages to 2910 Pages

Mandatory Coordination

Coordination Entity	Draft	Date	Status
IEEE-SA Editorial (MEC)	D11.0	Nov 11	"Meets all editorial requirements. "
Quantities, Units and Letter Symbols (SCC14)			Not required
Terms and Definitions (SCC10)			Not required
Registration Authority Committee (RAC)			Not required

Comments by Ballot – P802.11REVmb

Draft	Ballot	Not part of "no" vote	Satisfied	Unsatisfied	Total
6.00	Initial Sponsor Ballot	54	394	16	464
7.00	First Recirc	45	129	4	178
8.00	Second Recirc	86	481	296	863
9.00	Third Recirc	30	178	8	216
10.00	Fourth Recirc	65	181	11	257
11.00	Fifth Recirc	77	8	8	93
Total		357	1371	343	2071

- **Note, counts are expanded here by comments received from outside the MyBallot system (late comments, comments from ISO and "unpacked" comments from attachments to MyBallot comments)**

Unsatisfied Comments by Commenter

Commenter	Initial	R1	R2	R3	R4	R5	Total
Fischer, Matthew					2	2	4
Hiertz, Guido	11						11
Hunter, David	2	4	295	8	6		315
Kraemer, Bruce			1			4	5
Rosdahl, Jon	3				3	1	7
Vlantis, George						1	1
Grand Total	16	4	296	8	11	8	343

Analysis of unsatisfied comments – top categories

- **Use of "can" vs "may" – 290 remain unsatisfied**
  - Use of "can" in a draft has been validated with editorial staff
- **Assorted MAC – 30**
- **Inclusion of the term "Wireless Distribution System (WDS)" – 11**

Unsatisfied comments

- **The composite of all unsatisfied comments and the resolutions approved by the ballot resolution committee during sponsor ballot is attached.**
  - Double click on the icons to the right to open.

Microsoft Excel Worksheet

Adobe Acrobat Document

REVmb Timeline

	Open	Close
6th Recirculation (Draft 12.0)	2011-11-04	2011-11-13
7th Recirculation (Draft 12.0 unchanged)	2011-11-21	2011-11-30

RevCom – Submit to continuous process Dec 2011

TGmb Conditional Approval to RevCom

- **Approve document 11-11/1533r1 as the Report to the IEEE 802 Executive Committee (EC) on the requirements for conditional approval to forward P802.11REVmb to RevCom, and**
- **Empower the chair to make editorial changes if required, and**
- **Request the IEEE 802 Executive Committee to conditionally approve forwarding P802.11REVmb to RevCom.**
- **Moved: Dorothy Stanley (on behalf of TGmb)**
- **Seconded:**

- **In TGmb (similar motion on approval of report):**
  - Moved: Jon Rosdahl, Seconded: Mike Montemurro
  - Motion passes: Result: 13-0-0

5.14 Break **10 02:48 PM**

Nikolich called for a break of 10 minutes, to return at 2:58 pm.

Meeting called to order at 3:01 pm

5.15 ME 802.15.6 PAR extension forward to NesCom **Heile** **3 03:01 PM**

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slide 2

Motion combines approval for the extension for both 802.15.6 and 802.15.4e

Motion is 802.15 WG seeks EC approval to forward 1 year PAR extension requests for 802.15.4e and 802.15.6 to NesCom

Moved by Heile, seconded by Gilb

No discussion.

Vote is 12/0/0, motion passes

802.15.6 and 802.15.4e PAR Extensions to NesCom

Note: both projects are seeking approval today to submit to RevCom

- Motion: 802.15 WG seeks EC approval to forward 1 year PAR extension requests for 802.15.4e and 802.15.6 to NesCom
- Moved: Heile Second: Gilb

5.16 ME 802.15.6 PAR modification forward to NesCom Heile 3 03:04 PM

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slide 3

Motion is IEEE 802.15 WG requests EC approval to forward to NesCom a PAR title change for IEEE 802.15.6 to change the standard title from “Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 15.6: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Wireless Personal Area Networks (WPANs) used in or around a body” to “Standard for Wireless Body Area Networks"

Moved by Heile, seconded by Gilb

No discussion.

Vote is 13/0/1

802.15.6 Title Change to NesCom

Motion: IEEE 802.15 WG requests EC approval to forward to NesCom a PAR title change for IEEE 802.15.6 to change the standard title from

> "Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 15.6: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Wireless Personal Area Networks (WPANs) used in or around a body"

to "Standard for Wireless Body Area Networks"

(WG 25-0-0)

Moved: Heile Second: Gilb

5.17 ME 802.15.4e PAR extension forward to NesCom **Heile** **3** **03:05 PM**

Approved during agenda item 5.15.

5.18 ME 802.15.4e forward to RevCom **Heile** **10** **03:05 PM**

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slides 9-13

Motion is 802.15 requests unconditional approval from the EC to submit the P802.15.4e-D08 draft amendment to RevCom.

Moved by Heile, seconded by Gilb

No discussion.

Vote is 14/0/0, motion passes

802.15.4e Ballot History

- Sponsor Ballot (P802.15.4e-D06) closed 28 August 2011
- Vote results (pool of 180 voters)
  - 160 responses (88% response ratio)
  - 146 yes, 6 no (96% approval ratio)
  - 8 abstain (5% abstain ratio)
  - Ballot passes
- 547 comments from 24 commenters
  - 347 marked as “Must be Satisfied”

802.15.4e Ballot History

- Recirc-1 (P802.15.4e-D07) closed 24 October 2011
- Cumulative vote results (pool of 180 voters)
  - 160 responses (92% response ratio)
  - 155 yes, 3 no (98% approval ratio)
  - 8 abstain (4% abstain ratio)
- 68 comments from 3 commenters
  - 56 marked as “Must be Satisfied”

802.15.4e Ballot History

- Recirc-2 (P802.15.4e-D08) closed 7 November 2011
- No new “no” voter(s)
- No new comment(s) supporting a “no” vote

∴ No changes to draft

- Final cumulative vote results (pool of 180 voters)
  - 160 responses (93 % response ratio)
  - 159 yes, 1 no (99 % approval ratio)
  - 8 abstain (4% abstain ratio)
  - 4 comments from 3 commenters on Recirc-2

15.4e Comments supporting no votes

No voter #1 (Bahr, 33 unsatisfied Sponsor Ballot comments part of no vote, 30 unsatisfied Recirc-1 comments part of no vote):

- All resolutions were available for review in Recirc-2
- 57 technical comments on Information Element construction (termination parameters, data sequencing, data fields, etc.
- 6 editorial comments
- This as well as all other comment resolution detail is documented in worksheet: MBahrRemainingComments in https://mentor.ieee.org/802.15/dcn/11/15-11-0576-14-004e-802-15-4e-sponsor-ballot-comment-database.xlsx

EC motion for 802.15.4e

- 802.15 requests unconditional approval from the EC to submit the P802.15.4e-D08 draft amendment to RevCom.

WG vote (56, 0, 0)

- EC vote
  - Moved Heile, seconded Gilb
  - Yes: , No:, Abstain:

5.19 ME 802.15.4f forward to RevCom **Heile** **5 03:07 PM**

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slides 15-19

Motion is 802.15 requests unconditional approval from the EC to submit the P802.15.4f –D07 draft amendment to RevCom

Moved by Heile, seconded by Gilb

No discussion.

Vote is 14/0/0, motion passes

802.15.4f Ballot History

Initial Sponsor Ballot closed 28 August 2011

- Vote Results (pool of 138 voters)
  - 124 Responses (89%)
  - 112 Yes, 3 no (97% approval ratio)
  - 9 Abstain (7%)
  - Ballot passes

- 97 comments from 15 commenters
  - 22 Must Be Satisfied (2 accepted, 16 rejected, 4 revised)
  - 75 Other

802.15.4f Ballot History

Recirc-1 closed 7 October 2011

- Vote Results (pool of 138 voters)
  - 125 Responses (90%)
  - 113 Yes, 3 no (97% approval ratio)
  - 9 Abstain (7%)
  - Ballot passes

- 18 comments from 3 commenters
  - 2 Must Be Satisfied (2 rejected)
  - 16 Other

802.15.4f Ballot History

Recirc-2 closed 24 October 2011

- Final cumulative vote results (pool of 138 voters)
  - 127 Responses (92% response ratio)
  - 118 Yes, 0 no (100% approval ratio)
  - 9 Abstain (7% abstain ratio)
  - Ballot passes

- 1 comment from 1 (IEEE-SA EC) commenter
  - 1 Must Be Satisfied (1 accepted)
  - 0 Other

15.4f Comment from Editorial Coordination Staff

- **1 Must Be Satisfied resolved editorial comment from (M.D. Turner, IEEE-SA EC) but not applied in D7P802.15.4f draft document .**
  - **Comment :** Please note, there is no need to include D.3-D6 and E1.1 and E1.5 headers in the draft if they are not being modified in this amendment.
  - **Proposed Change:** This can be addressed during publication.
  - **Resolution Status:** Accepted
  - **Resolution:** This is an IEEE-SA MicroSoft Word template programming issue and the IEEE-SA Editorial staff has agreed to editorially address these headers during publication.
- **Comment resolution was uploaded to TG4f SB voter pool, e-mailed to EC commenter, and is in document at:**
  - https://mentor.ieee.org/802.15/dcn/11/15-11-0750-00-004f-tg4f-sb-2nd-recirc-comment-resolution-on-d7p802-15-4f-draft-standard.xlsx

EC motion for 15.4f

- 802.15 requests unconditional approval from the EC to submit the P802.15.4f – D07 draft amendment to RevCom.

WG vote (51-0-3)

- EC vote
  - Moved: Heile, Second: Gilb
  - Yes: , No:, Abstain:

5.20 ME 802.15.4g forward to RevCom (conditional) Heile 10 03:09 PM

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slides 21-27

Motion is that 802.15 requests conditional approval from the EC to P802.15.4g-D07 draft amendment to RevCom pending up to 2 recirculations.

Moved by Heile, seconded by Gilb

No discussion.

Vote is 14/0/0, motion passes

802.15.4g Ballot History (1)

Initial Sponsor Ballot closed 1 September 2011

- Vote Results (pool of 220 voters)
  - 195 Responses (88%)
  - 175 Yes, 9 No with MBS and 1 without MBS (94% approval ratio)
  - 8 Abstain (4%)
  - Ballot passes

- 262 comments received from 23 commenters
  - 73 Must Be Satisfied (10 accepted, 23 rejected, 40 revised)
  - 189 Other

802.15.4g Ballot History (2)

Recirculation 1 closed 30 October 2011

- Vote Results (pool of 220 voters)
  - 200 Responses (90%)
  - 188 Yes, 5 No (97% approval ratio)
  - 7 Abstain (3%)
  - Ballot passes
- 36 comments from 10 commenters
  - 2 Must Be Satisfied (2 revised)
  - 34 Other
- Current Status – 189 Yes, 3 No, 7 Abstain

Comments supporting No votes (1)

- 67 Total comments from 5 negative voters
- 48 “Must Be Satisfied”(MbS) comments
- 1 MEC comment
- 2 Voters are satisfied with the 4 comment resolutions agreed and flipped their votes to Approve
- 1 Voter is satisfied with the resolutions to his 7 MbS comments
- 2 Voters are satisfied with the resolutions to 22 out of 36 MbS comments
- 14 MbS comments from 2 voters remain unsatisfied.
- Comment Resolution Spreadsheets:
  - 15-11-0584-11-004g-tg4g-sponsor-ballot-comments.xlsx
  - 15-11-0753-05-004g-tg4g-sb-recirculation-1-comments.xlsx

Comments supporting No votes (2)

5 Rejected “Must be Satisfied” Comments:

- 1 comment concerning Front Matter and the numbering of amendments. *This comment was considered out of scope and will be resolved by IEEE-SA staff.*
- 2 comments concerning content related to 802.15.4e. *The resolution describes that the information is not redefined in 802.15.4g, but referenced.*
- 1 comment concerned that coexistence mechanism was overly complex. *This is not the case as the PAR states we must consider co-located networks*.
- 1 comment concerned the order of applying Data whitening and FEC. *The resolution states that the order specified is not broken.*

Comments supporting No votes (3)

9 Revised “Must Be Satisfied” Comments

- 1 comment considered that the amendment process is “broken”. *Response was that TG4e and TG4g would coordinate to ensure valid process.*
- 1 comment suggesting a method to improve efficiency in Coexistence Information Element. *Resolution improved the efficiency but without introducing additional complexity in decoding.*
- 3 comments concerning Enhanced Acknowledgement. *Resolutions clarified that Enhanced Ack is required by this PHY.*
- 2 comments questioning MPM requirement, consistency and wording. *Resolutions clarify the requirement, and verify consistency and clarify functionality.*
- 2 comments concerned with the use of Information Elements and inconsistency in the text. *The resolutions provide updated text which improves the description and fixes the errors.*

802.15.4g Schedule for ballot and meetings

- 2rd recirculation
  - 29 November 2011 to 9 December 2011
- BRC comment resolution teleconference
  - 12 December, 2011, 15:00 GMT
- 3rd recirculation (if necessary)
  - 13 December to 23 December 2011
- BRC comment resolution teleconference
  - 4 January, 2012, 15:00 GMT (if necessary)

15.4g EC motion

- Move that 802.15 requests conditional approval from the EC to P802.15.4g-D07 draft amendment to RevCom pending up to 2 recirculations.

WG vote (48-0-0)

- EC vote
  - Moved: Heile, Seconded: Gilb
  - Yes: , No:, Abstain:

5.21 ME 80.15.6 forward to RevCom (conditional) Heile 10 03:12 PM

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slides 29-33

Motion is 802.15 requests conditional approval from the EC to submit 802.15.6 final recirculated draft to RevCom.

Moved by Heile, seconded by Gilb

No discussion.

Vote is 14/0/0, motion passes

Ballot information

- Initial Ballot closed 21 August 2011
  - Vote results (pool of 154 voters)
    - 136 responses (88.31% response ratio)
    - 112 yes, 12 no (90.32% approval ratio)
    - 12 abstain (8.82% abstain ratio)
    - 238 total comments received, 192 comments from 12 negative voters, 149 “Must Be Satisfied” comments from 12 negative voters, 1 “Must Be Satisfied” comment from IEEE staff
- Recirculation Ballot closed 3 November 2011
  - Vote results (pool of 154 voters)
    - 137 responses (88.96% response ratio)
    - 118 yes, 8 no (93.65% approval ratio)
    - 11 abstain (8.03% abstain ratio)
    - 85 total comments received, 31 comments from four negative voters, 29 “Must Be Satisfied” comments from four negative voters, 2 “Must Be Satisfied” comments from IEEE staff
    - Only five “Must Be Satisfied” comments were categorized as rejected, the rest were accepted or revised

Comments supporting no votes

- 85 total comments received at this recirculation, 4 voters did not respond, 31 comments from four negative voters, 29 “Must Be Satisfied” comments from four negative voters, 2 “Must Be Satisfied” comments from IEEE Staff
- 10 of the 29 “Must Be Satisfied” comments from four negative voters were editorial, 17 were technical, 2 were general
- Five “Must Be Satisfied” comments from two voters were rejected
  - Four “Must Be Satisfied” comments from one voter were rejected
    - All four comments requested that a major feature (Human Body Communication) of the draft be removed.
    - These were all repeat comments by this Voter. Voter did not accept the resolutions of comments from the same voter submitted during initial ballot and subsequently recirculated.
    - Comments rejected: BRC could not agree on removal
  - One “Must Be Satisfied” comment from one voter was rejected
    - Comment requested that a feature that was removed from the draft after initial ballot be reinstated.
    - Comment rejected: the BRC was not convinced that the feature adds enough value to justify its inclusion.
- All other “Must Be Satisfied” comments were either accepted or revised
- 15-11-0763-04-0006 Sponsor Ballot 2 Comments.xls

Background on HBC Concerns

- 3 Letters to the IEEE SA have been received over the last 18 months voicing concerns over HBC. A response is currently being developed by IEEE SA to the most recent letter
- Meanwhile,
  - draft has been reviewed by IEEE SA Legal and all recommendations have been included in the draft
  - Concerns have been aired in received comments in both the WG Letter Ballot and in Sponsor Ballot
  - IEEE SA staff has confirmed we have followed all necessary P&P

Schedule for ballot and meetings

- 2nd recirculation
  - 14 November 2011 to 24 November 2011
- BRC comment resolution teleconference
  - 29 November, 2011, 06:00 PST
- 3rd recirculation (if necessary)
  - 12 December 2011 to 22 December 2011
- Comment resolution at January 2012 interim meeting

EC motion

- 802.15 requests conditional approval from the EC to submit 802.15.6 final recirculated draft to RevCom.

WG vote (45-1-3)

- EC vote
  - Moved: Heile Second: Gilb
  - Yes: , No:, Abstain:

5.22 ME Approve the response to interpretation request 1 for IEEE Std 802.15.4-2006 **Heile** **5 03:15 PM**

Heile presented 15-11-0849-01-0000-802-15 Package for Closing ATL EC.ppt, slides 35-37

Motion is Request the EC to approve the 802.15 WG response to the Interpretation Request as shown on previous slide and documented in 15-11-0837-00 as the official 802 response and request approval to report and publish as appropriate.

Moved by Heile, seconded by Gilb

No discussion.

Vote is 13/0/0, motion passes.

Interpretation Request

The following interpretation request concerns IEEE 802.15.4-2006, subclauses 6.8.2.5 and 6.8.3.2:

While the BPSK PHY and the ASK PHY of the 868 MHz specifications use raised-cosine and root-raised-cosine pulse shape filtering to represent the baseband chips, the O-QPSK PHY uses half-sine pulse shaping for baseband-chip representation (see 6.8.2.5). Furthermore, subclause 6.8.3.2 specifies that, using the 868 MHz band, "the signal shall be filtered" with a raised-cosine filter. Does this mean that the baseband chips are first half-sine filtered and then additionally raised-cosine filtered? Or is the raised-cosine filtering optional?

Interpretation Request Resolution

- Does this mean that the baseband chips are first half-sine filtered and then additionally raised-cosine filtered?
  - "Yes". This filtering is for pulse shaping purposes.
- Or is the raised-cosine filtering optional?
  - "No, this is mandatory". This filtering is for spectral emissions purposes.

Interpretation Request Resolution

- Motion: *Request the EC to approve the 802.15 WG response to the Interpretation Request as shown on previous slide and documented in 15-11-0837-00 as the official 802 response and request approval to report and publish as appropriate.*

(WG 46-0-1)

- Moved: Heile, Second: Gilb

5.23 ME 802.16.1b amendment for enhancements to support machine-to-machine applications in 802.16.1, PAR forward to NesCom **Marks 5 03:18 PM**

Marks presented lmsc.html and 80216-11_0033r1.pdf

Motion is to forward the P802.16.1b PAR to NesCom.

Moved by Marks, seconded by Kraemer

No discussion.

Vote is 14/0/0, motion passes.

IEEE 802.16 Issues for 802 LMSC EC Meeting of Friday 11 November 2011

#	Agenda Item	Agenda Type	Motion and Documentation	802.16 WG Result (2011-11-10)	802 EC Result
(a)	5.23	ME	*Motion: To forward the P802.16.1b PAR to NesCom.* IEEE 802.16-11/0033r1 (see also comment responses) Move: Marks Second: Kraemer	32/0/0	A/D/A
(b)	5.24	ME	*Motion: To forward the P802.16p PAR modification to NesCom.* IEEE 802.16-11/0032r1 (see also comment responses) Move: Marks Second: Kraemer	32/0/0	A/D/A
(c)	5.25	ME	*Motion: To forward the 802.16.1a PAR to NesCom.* IEEE 802.16-11/0031r1 (see also comment responses) Move: Marks Second: Kraemer	32/0/0	A/D/A
(d)	5.26	ME	*Motion: To forward the 802.16n PAR modification to NesCom.* IEEE 802.16-11/0030r2 (see also comment responses) Move: Marks Second: Kraemer	32/0/0	A/D/A
(e)	5.27	MI	*Motion: To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16Rev3 for Sponsor Ballot.* IEEE 802.16-11/0044 Move: Marks Second: Das	25/0/0	A/D/A
(f)	5.28	MI	*Motion: To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16.1 for Sponsor Ballot.* IEEE 802.16-11/0045	26/0/0	A/D/A

			Move: Marks Second: Das		
(g)	5.29	MI	*Motion: To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16p for Sponsor Ballot.* IEEE 802.16-11/0046 Move: Marks Second: Sherman	32/0/0	A/D/A

* = consent agenda

ME=Motion External; MI=Motion Internal; DT=Discussion Topic; II=Information Item

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Roger Marks (r.b.marks@ieee.org)
Chair, IEEE 802.16 Working Group on Broadband Wireless Access Standards

P802.16.1b

Submitter Email: r.b.marks@ieee.org
Type of Project: New IEEE Standard
PAR Request Date: 12-Oct-2011
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number: P802.16.1b
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems - Amendment: Enhancements to Support Machine-to-Machine Applications

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
Contact Information for Working Group Chair
Name: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: 1 619 393 1913
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

3.3 Joint Sponsor: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)
Contact Information for Sponsor Chair
Name: Michael Janezic
Email Address: janezic@boulder.nist.gov
Phone: 303-497-3656
Contact Information for Standards Representative
Name: Michael Janezic
Email Address: janezic@boulder.nist.gov
Phone: 303-497-3656

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 05/2012
4.3 Projected Completion Date for Submittal to RevCom: 02/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 100
5.2 Scope: This amendment specifies medium access control (MAC) enhancements and minimal WirelessMAN-Advanced physical layer (PHY) modifications in licensed bands to support lower power consumption at the device, support by the base station of significantly larger numbers of devices, efficient support for small burst transmissions, and improved device authentication.

.1

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: This amendment describes enhancements to enable a range of Machine-to-Machine applications in which the device communications require wide area wireless coverage in licensed bands, and are automated rather than human-initiated or human-controlled for purposes such as observation and control.

5.5 Need for the Project: Many Machine-to-Machine applications require network access that involves requirements significantly different from those used to support typical human-initiated or human-controlled network access. Such applications include secured access and surveillance, tracking, tracing and recovery, public safety sensors, vehicular telematics, healthcare monitoring of bio-sensors, remote maintenance and control, smart metering, automated services on consumer devices, retail digital signage management. The current IEEE 802.16 standard and the amendments under development do not address the unique requirements of these applications, such as very low power consumption, large number of devices, short burst transmissions, device tampering detection and reporting etc. While these requirements are not

all-encompassing to the Machine-to-Machine applications space, they will enable many applications that need the enhancements proposed in this amendment.

5.6 Stakeholders for the Standard: Stakeholders for the Standard: Network operators, utility companies, government agencies, network equipment manufacturers, mobile and wireless device manufacturers, semiconductor manufacturers.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): (Item 5.2) Backward Compatibility: This amendment provides continuing support for WirelessMAN-Advanced Air Interface equipment

Note: This PAR is being submitted as a PAR for a new standard. The actual intent is to amend IEEE 802.16.1. However, the submittal system will not allow it to be filed in this way because IEEE 802.16.1 has not been approved at the time of this submittal.

5.24 ME 802.16p modificatiion, amendment for enhancements to support machine-to-machine applications in 802.16, PAR forward to NesCom **Marks 5 03:21 PM**

Marks presented 80216-11_0032r1.pdf

Motion is to forward the P802.16p PAR modification to NesCom.

Moved by Marks, seconded by Kraemer

No discussion.

Vote is 14/0/0, motion passes.

P802.16p

Submitter Email: r.b.marks@ieee.org
Type of Project: Modify Existing Approved PAR
PAR Request Date: 12-Oct-2011
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.16p **Approved on:** 30-Sep-2010

1.1 Project Number: P802.16p
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Air Interface for Broadband Wireless Access Systems Amendment: Enhancements to Support Machine-to-Machine Applications

Changes in title: ~~Amendment to~~ Standard for ~~Local and Metropolitan Area Networks – Part 16:~~ Air Interface for Broadband Wireless Access Systems ~~-~~Amendment: Enhancements to Support Machine-to-Machine Applications

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
Contact Information for Working Group Chair
Name: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: 1 619 393 1913
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 05/2012
4.3 Projected Completion Date for Submittal to RevCom: 02/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 100
5.2 Scope: This amendment specifies IEEE Std 802.16 medium access control (MAC) enhancements and minimal orthogonal frequency division multiple access (OFDMA) physical layer (PHY) modifications in licensed bands to support lower power consumption at the device, support by the base station of significantly larger numbers of devices, efficient support for small burst transmissions, and improved device authentication.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: Yes. This will amend IEEE Std 802.16, following completion of the current revision.

5.4 Purpose: This amendment describes enhancements to enable a range of Machine-to-Machine applications in which the device communications require wide area wireless coverage in licensed bands, and are automated rather than human-initiated or human-controlled for purposes such as observation and control.

Changes in purpose: This amendment ~~decribes~~describes enhancements to enable a range of Machine-to-Machine applications in which the device communications require wide area wireless coverage in licensed bands, and are automated rather than human-initiated or human-controlled for purposes such as observation and control.

5.5 Need for the Project: Many Machine-to-Machine applications require network access that involves requirements significantly different from those used to support typical human-initiated or human-controlled network access. Such applications include secured access and surveillance, tracking, tracing and recovery, public safety sensors, vehicular telematics, healthcare monitoring of bio-sensors, remote maintenance and control, smart metering, automated services on consumer devices, retail digital signage management. The current IEEE 802.16 standard and the amendments under development do not address the unique requirements of these applications, such as very low power consumption, large number of devices, short burst transmissions, device tampering detection and reporting etc. While these requirements are not all-encompassing to the Machine-to-Machine applications space, they will enable many applications that need the

enhancements proposed in this amendment.

5.6 Stakeholders for the Standard: Network operators, utility companies, government agencies, network equipment manufacturers, mobile and wireless device manufacturers, semiconductor manufacturers.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: Yes
If Yes please explain: *ETSI Technical Committee project on Machine-to-Machine Communications. <http://www.etsi.org/website/technologies/m2m.aspx>

*3GPP TS 22.368: Service requirements for Machine-Type Communications (MTC), Stage 1, Release 10, March 2010.

*3GPP2 SC.R5003-0: Vision for 2009 and Beyond, Version 1.0, April 2009.

*3GPP2 S.P0140-0: Study for Machine to Machine (M2M) communication for cdma2000 Wireless Networks

and answer the following
Sponsor Organization: 3GPP
Project/Standard Number: TS 22.368
Project/Standard Date: 01-Apr-2010
Project/Standard Title: Service requirements for Machine-Type Communications (MTC), Stage 1, Release 10
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): (3.3) MTT/SCC is a Joint Sponsor

(Item 5.2) Backward Compatibility: This amendment provides continuing support for legacy WirelessMAN-OFDMA equipment.

CHANGES IN THIS MODIFIED PAR:
The completion dates are extended by about six months. Otherwise, the only material change is to restrict the PAR scope to exclude amendments to the WirelessMAN-Advanced air interface introduced in IEEE 802.16m. This was achieved by the following:
(1) 5.3 now mentions the contingency on the current revision of IEEE Std 802.16, removing language about 802.16m.
(2) 2.1 was changed to refer to the title of the base standard following revision.
(3) The note in 8.1 regarding backward compatibility was modified to remove reference to WirelessMAN-Advanced.

5.25 ME 802.16.1a, amendment for higher reliability networks in 802.16.1 PAR forward to NesCom **Marks 5 03:24 PM**

Marks presented 80216-11_0031r1.pdf

Motion is to forward the P802.16.1a PAR to NesCom.

Moved by Marks, seconded by Kraemer

No discussion.

Vote is 14/0/0, motion passes.

P802.16.1a

Submitter Email: r.b.marks@ieee.org
Type of Project: New IEEE Standard
PAR Request Date: 12-Oct-2011
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number: P802.16.1a
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems - Amendment: Higher Reliability Networks

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
Contact Information for Working Group Chair
Name: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: 1 619 393 1913
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

3.3 Joint Sponsor: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)
Contact Information for Sponsor Chair
Name: Michael Janezic
Email Address: janezic@boulder.nist.gov
Phone: 303-497-3656
Contact Information for Standards Representative
Name: Michael Janezic
Email Address: janezic@boulder.nist.gov
Phone: 303-497-3656

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2012
4.3 Projected Completion Date for Submittal to RevCom: 08/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
5.2 Scope: This amendment specifies protocol enhancements to the medium access control layer (MAC) for enabling increased robustness and alternate radio path establishment in degraded network conditions. Limited WirelessMAN-Advanced physical layer extensions are included for enabling operation with radio path redundancy and direct communication between subscriber stations. Also mobile base stations and mobile relay stations are supported.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: Yes. This amendment will amend IEEE Std 802.16.1

.1

.1

5.4 Purpose: This amendment addresses higher reliability requirements that are not supported by IEEE Std 802.16.1.

5.5 Need for the Project: Work undertaken within Land Mobile Radio, Aeronautic, Maritime and Government bodies, such as the TETRA Association, Eurocae, International Maritime Organization, and the US Department of Homeland Security and Federal Aviation Administration, regarding the deployment of IEEE 802.16 technology in Public Safety, Avionics, Airport Surface Communication, Maritime Safety, and Surveillance applications, has raised specific issues which may be addressed within IEEE 802.16. Recently introduced legislation in U.S. and other countries encourages and funds a wide range of activities in communicationstechnologies supporting Smart Grid applications such as monitoring and control of generation, transmission,

distribution and consumption of energy resources. This project is expected to support communication with higher reliability that may be used in some Smart Grid applications. High data rates and long range are required for some of these applications. 802.16.1 technology is uniquely suitable for these purposes, due to its inherent longer range and high data rate capability compared to other wireless technologies. The benefit of this particular project is to facilitate applications for those new markets. In particular, the new mechanisms will be advantageous for IEEE 802.16.1 when targeted to those applications.

IEEE

5.6 Stakeholders for the Standard: Semiconductor manufacturers, network equipment manufacturers, mobile and wireless device manufacturers, network operators, utility companies, government agencies (e.g. US Department of Homeland Security, Department of Energy and the Federal Aviation Administration), non-government agencies with equivalent interest and the public safety and energy industries.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): In Section 5.2, the following definitions and notes apply:

Degraded Network: The failure of one or more 802.16.1 network infrastructure nodes or network connectivity.
Robustness: The capability of the network to withstand and automatically recover from degradation to provide the required availability to support mission critical applications (essential to the core function of society and the economy).e.g. the ability to recover from a single point of failure.
Mobile Base Station: A base station which is capable of maintaining service while moving.
Radio Path Redundancy: The ability to provide alternative paths between base stations, relay stations, and subscriber stations.

Operation in licensed, unlicensed and lightly licensed spectrum bands below 6 GHz with means and mechanisms to coexist with other radio access technologies (RATs) is supported. Support for enabling application specific specialized security suites is also provided.

Note: This PAR is being submitted as a PAR for a new standard. The actual intent is to amend IEEE 802.16.1. However, the submittal system will not allow it to be filed in this way because IEEE 802.16.1 has not been approved at the time of this submittal.

5.26 ME 802.16n modification, amendment for higher reliability networks in 802.16 PAR forward to NesCom — **Marks** — **5** — **03:26 PM**

Marks presented 80216-11_0030r2.pdf

Motion is to forward the P802.16.1n PAR modification to NesCom.

Moved by Marks, seconded by Kraemer

No discussion.

Vote is 14/0/0, motion passes.

P802.16n

Submitter Email: r.b.marks@ieee.org
Type of Project: Modify Existing Approved PAR
PAR Request Date: 17-Oct-2011
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.16n **Approved on:** 17-Jun-2010

1.1 Project Number: P802.16n
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Local and metropolitan area networks Part 16: Air Interface for Broadband Wireless Access Systems Standard for Air Interface for Broadband Wireless Access Systems Standard for Air Interface for Broadband Wireless Access Systems Amendment: Higher Reliability Networks

Changes in title: ~~IEEE~~ ~~Standard for Local and metropolitan area networks Part 16: Air Interface for Broadband Wireless Access Systems Standard for Air Interface for Broadband Wireless Access Systems~~ Standard for Air Interface for Broadband Wireless Access Systems Amendment: Higher Reliability Networks

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
Contact Information for Working Group Chair
Name: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: 1 619 393 1913
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2012
4.3 Projected Completion Date for Submittal to RevCom: 08/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 20

5.2 Scope: This amendment specifies protocol enhancements to the medium access control layer (MAC) for enabling increased robustness and alternate radio path establishment in degraded network conditions. Limited orthogonal frequency-division multiple access physical layer (OFDMA PHY) extensions are included for enabling operation with radio path redundancy and direct communication between subscriber stations. Also mobile base stations and mobile relay stations are supported.

Changes in scope: This amendment specifies protocol enhancements to the ~~IEEE 802.16~~ medium access control layer (MAC) for enabling increased robustness and alternate radio path establishment in degraded network conditions. Limited orthogonal frequency-division multiple access physical layer (OFDMA PHY) extensions are included for enabling operation with radio path redundancy and direct communication between subscriber stations. Also mobile base stations and mobile relay stations are supported.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: Yes. This will amend IEEE Std 802.16, following completion of the current revision.

5.4 Purpose: This amendment addresses higher reliability requirements that are not supported by IEEE Std. 802.16.

Changes in purpose: This amendment addresses higher reliability requirements that are not supported by IEEE Std. 802.16~~presently~~.

5.5 Need for the Project: Work undertaken within Land Mobile Radio, Aeronautic, Maritime and Government bodies, such as the TETRA Association, Eurocae, International Maritime Organization, and the US Department of Homeland Security and Federal Aviation Administration, regarding the deployment of IEEE 802.16 technology in Public Safety, Avionics, Airport Surface Communication, Maritime Safety, and Surveillance applications, has raised specific issues which may be addressed within IEEE 802.16.

Recently introduced legislation in U.S. and other countries encourages and funds a wide range of activities in communications technologies supporting Smart Grid applications such as monitoring and control of generation, transmission, distribution and consumption of energy resources. This project is expected to support communication with higher reliability that may be used in some Smart Grid applications.
High data rates and long range are required for some of these applications. 802.16 technology is uniquely suitable for these purposes, due to its inherent longer range and high data rate capability compared to other wireless technologies.
The benefit of this particular project is to facilitate applications for those new markets. In particular, the new mechanisms will be advantageous for IEEE 802.16 when targeted to those applications.

5.6 Stakeholders for the Standard: Semiconductor manufacturers, network equipment manufacturers, mobile and wireless device manufacturers, network operators, utility companies, government agencies (e.g. US Department of Homeland Security, Department of Energy and the Federal Aviation Administration), non-government agencies with equivalent interest and the public safety and energy industries.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): (3.3) MTT/SCC is a Joint Sponsor

In Section 5.2 the following definitions and notes apply:

Degraded Network: The failure of one or more 802.16 network infrastructure nodes or network connectivity.
Robustness: The capability of the network to withstand and automatically recover from degradation to provide the required availability to support mission critical applications (essential to the core function of society and the economy). e.g. the ability to recover from a single point of failure.
Mobile Base Station: A base station which is capable of maintaining service while moving.
Radio Path Redundancy: The ability to provide alternative paths between base stations, relay stations, and subscriber stations.

Operation in licensed, unlicensed and lightly licensed spectrum bands below 6 GHz with means and mechanisms to coexist with other radio access technologies (RATs) is supported. Support for enabling application specific specialized security suites is also provided.

CHANGES IN THIS MODIFIED PAR:
The completion dates are extended by about six months. Otherwise, the only material change is to restrict the PAR scope to exclude amendments to the WirelessMAN-Advanced air interface introduced in IEEE 802.16m. This was achieved by the following:
(1) 5.3 was changed to mention the contingency on the current revision of IEEE Std 802.16, which excludes the WirelessMAN-Advanced air interface.
(2) 2.1 was changed to refer to the title of the base standard following revision [Note: The myProject system has automatically prepended incorrect information to the title.]

5.27 MI 802.16Rev3 forward to Sponsor ballot (conditional) Marks 10 03:29 PM

Marks presented 80216-11_0044.pdf

Motion is to grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16Rev3 for Sponsor Ballot.

Moved by Marks, seconded by Das

Shellhammer asked if this revision provides the split or if there is another one.

Marks said that the content of the draft of the split document.

Rosdahl was clarifying that no changes were required.

Law said that substantive changes were made to the draft.

Vote is 14/0/0, motion passes.

P802.16Rev3 to Sponsor Ballot: Conditional Approval Request

11 November 2011

Rules: OM (2010-07-16) Clause 14

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.

Date the ballot closed

Stage	Open	Close
WG Letter Ballot #35	7 Oct	7 Nov 2011

Vote tally including Approve, Disapprove and Abstain votes

93 Approve (100%)

- 0 Disapprove with comment
- 0 Disapprove without comment
- 3 Abstain
- Return ratio requirement met (62%)

Comment resolution

Working Group Letter Ballot #35

- 45 comments
- 0 Disapprove comments
- Comment resolution at IEEE 802.16 Session #76 (2011-11-07 through 2011-11-10)
  - In IEEE 802.16-11/0042r1

Comments that support the remaining disapprove votes and Working Group responses

- None

Schedule for recirculation ballot and resolution meeting

- Ballot Group formation by mid-Dec
- 15 day Recirculation (approximately 2011-11-25 to 2011-12-10)
- if conditions met:
  - 30-day Sponsor Ballot (approximately 2011-12-12 to 2012-01-11)
- else
  - Comment resolution meeting: 2012-01-16 through 2012-01-19, followed by confirmation recirc

802.16 WG Motion

802.16 Closing Plenary: 2011-11-10

Motion: To request that the WG Chair request Conditional Approval to forward P802.16Rev3 for Sponsor Ballot

- Proposed: Zheng Yan-Xiu
- Seconded: Phillip Barber
- Approved 25-0-0

LMSC Motion

- To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16Rev3 for Sponsor Ballot
- Moved:
- Seconded:
- Approve:
- Disapprove:
- Abstain:

5.28 MI 802.16.1 forward to Sponsor ballot (conditional) Marks 10 03:35 PM

Marks presented 80216-11_0045.pdf

Motion is to grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16.1 for Sponsor Ballot.

Moved by Marks, seconded by Das

No discussion.

Vote is 14/0/0, motion passes.

P802.16.1 to Sponsor Ballot: Conditional Approval Request

11 November 2011

Rules: OM (2010-07-16) Clause 14

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.

Date the ballot closed

Stage	Open	Close
WG Letter Ballot #32	7 Oct	6 Nov 2011

Vote tally including Approve, Disapprove and Abstain votes

82 Approve (99%)

- 1 Disapprove with comment
- 0 Disapprove without comment
- 5 Abstain
- Return ratio requirement met (57%)

Comment resolution

Working Group Letter Ballot #32

- 33 comments
- 6 Disapprove comments submitted
- Comment resolution at IEEE 802.16 Session #76 (2011-11-07 through 2011-11-10)
  - In IEEE 802.16-11/0039r2
- During comment resolution, all comments except 1 were resolved to commenter's satisfaction

Comments that support the remaining disapprove votes and Working Group responses

- See following:

Comment by: Lei Wang **Membership Status:** Member **Date:** 2011/11/04

Comment # 023 **Document under Review:** IEEE P802.16.1/D2 **Ballot ID:** 32

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 622 **Line** 18 **Fig/Table#** **Subclause** 6.3.5.5.2.4.1

During 16m development, I pointed out there is a design deficit in the 20MHz system bandwidth by the comment #554 in commentary database 802.16-10/0042 in session #68. Here's the original comment:
"In the 20MHz system bandwidth, there are 4656 possible combinations of (L, S), where L is the location of an allocation; and S is the size of an allocation. With 11-bit RI field, those 4656 combinations cannot be signaled by the RI field. Based on the text in line 9 to line 23 on page 560, the number of allowed S values is reduced. Basically, the allocation granularity is no long 1 LRU, it is actually 1, 2, 4, and 8, depending on the value of S.
Sacrificing the allocation granularity seems a very bad design choice, particularly at steps as big as 8 LRUs. Even with code-matching schemes, the offset of the required size to the nearest allowed S value can be up to 4 LRUs. This makes the ratio of the offset to the assigned size is greater than majority of the code steps based on the nominal MCS table given in Table 934, on page 729 in 16m/D6.
We would recommend reconsidering the RI field encoding issue, particularly for the 20MHz system bandwidth, instead of sacrificing the allocation granularity, looking for some other alternatives, e.g., change the RI field from 11 bits to 12 bits by using the 1 reserved bit, and/or consider the constraints of the allocations to remove those ones that do not need to be signaled by the assignment A-MAP IEs, e.g., the control channel occupied resources, and/or allocations spanning over multiple frequency partitions, etc."

The above comment was rejected, resubmitted, and rejected again, for multiple rounds until 16m completion. Here's the reason of rejection "This issue was analyzed in the original design. Refer to the analysis in section 4 of contribution C802.16m-09/1334r1. It has been shown that link adaptation with the granularity of feedback MCS levels as defined in the 802.16m is not adversely affected by the proposed reduction in assignable resource indices with 11 bits for 20MHz. The original analysis does require an update with delta_min = 31/256 based on Table 834, but this change does not change the final conclusion since 1/6 < 31/1422."

Note that 1/6 is not less than 31/1422. It is actually way bigger than 31/1422. Therefore the 16m 20MHz resource allocation design is based on a serious Math error. Such an obvious error really bothers me. I would like to re-trigger the discussions again about this issue, and hope we can fix it during this revision project.

I would recommend reconsidering the RI field encoding issue, particularly for the 20MHz system bandwidth, instead of sacrificing the allocation granularity, looking for some other alternatives, e.g., change the RI field from 11 bits to 12 bits by using the 1 reserved bit, and/or consider the constraints of the allocations to remove those ones that do not need to be signaled by the assignment A-MAP IEs, e.g., the control channel occupied resources, and/or allocations spanning over multiple frequency partitions, etc.

Suggested Remedy

discuss and adopt contribution C80216maint-11_0015 or its latest version.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

The proposed change would result in a major impact to the specification. It's our impression that the ballot group would not endorse such a major change to a specification that has been available for implementation based on IEEE 802.16m.

Group's Notes

Editor's Notes **Editor's Actions**

Schedule for recirculation ballot and resolution meeting

- Ballot Group formation by mid-Dec
- 15 day Recirculation (approximately 2011-11-25 to 2011-12-10)
- if conditions met:
  - 30-day Sponsor Ballot (approximately 2011-12-12 to 2012-01-11)
- else
  - Comment resolution meeting: 2012-01-16 through 2012-01-19, followed by confirmation recirc

802.16 WG Motion

802.16 Closing Plenary: 2011-11-10

Motion: To request that the WG Chair request Conditional Approval to forward P802.16.1 for Sponsor Ballot

- Proposed: Zheng Yan-Xiu
- Seconded: Lei Zhou
- Approved 26-0-0

LMSC Motion

- To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16.1 for Sponsor Ballot
- Moved:
- Seconded:
- Approve:
- Disapprove:
- Abstain:

5.29 MI 802.16p forward to Sponsor ballot (conditional) Marks 10 03:39 PM

Marks presented 80216-11_0046.pdf

Motion is to grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16p for Sponsor Ballot.

Moved by Marks, seconded by Sherman

No discussion.

Vote is 14/0/0, motion passes.

P802.16p to Sponsor Ballot: Conditional Approval Request

11 November 2011

Rules: OM (2010-07-16) Clause 14

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.

Date the ballot closed

Stage	Open	Close
WG Letter Ballot #33	7 Oct	6 Nov 2011

Vote tally including Approve, Disapprove and Abstain votes

86 Approve (97%)

- 3 Disapprove with comment
- 0 Disapprove without comment
- 4 Abstain
- Return ratio requirement met (60%)

Comment Resolution

- Working Group Letter Ballot #33
  - 109 comments
  - 45 Disapprove comments (10 Disapprove voters)
- Comment resolution at IEEE 802.16 Session #76 (2011-11-07 through 2011-11-10)
  - In IEEE 802.16-11/0040r2
- Following comment resolution:
  - 3 Disapprove voters
  - 7 Disapprove comments

Comments that support the remaining disapprove votes and Working Group responses

- See following:

Comment by: Eunjong Lee **Membership Status:** Member **Date:** ?

Comment # 062 **Document under Review:** IEEE 802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 12 **Line** 27 **Fig/Table#** **Subclause** 6.3.22.8.1

In the last meeting, we defined that the domain of the network entity that assigns MGID is identified by M2M DEVICE GROUP ZONE ID transmitted in the DCD message. According to the current texts, if an M2M device moves to another M2M device group zone, the current MGID should be updated. So, this contribution proposes to trigger location update when an M2M device detects that the selected preferred BS does not support its currently assigned MGID. The M2M device can detect the change of M2M GROUP ZONE by monitoring the M2M DEVICE GROUP ZONE ID in the DCD message which is transmitted by the preferred BS.

Suggested Remedy

Adopt the proposed text in IEEE C80216p-11_0313.doc or its latest revision.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

Incomplete remedy provided. Incomplete remedies were also provided in other comments. An ad hoc committee will be initiated to resolve and harmonize these comments and aid in deriving a complete solution for input to the Sponsor Ballot process. The commenter is invited to participate.

Group's Notes

Editor's Notes **Editor's Actions**

Comment by: Ron Murias **Membership Status:** Member **Date:** 2011-11-04

Comment # 057 **Document under Review:** P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 12 **Line** 2 **Fig/Table#** **Subclause** 6.3.10.3

6.3.10.3.1 in the baseline document describes "Contention-based initial ranging and automatic adjustments".

While "Adjustment of local parameters (e.g. Tx power) in an SS as a result of the receipt (or non-receipt) of a RNG-RSP is considered to be implementation-dependent", the normal behaviour for an SS not receiving a RNG-RSP is to ramp power and try again using a random backoff.

Many contributions submitted to this group show that collisions are expected and there is a high likelihood that devices will need to try more than once, purely because a collision has occurred. In this case, the default behaviour of each device increasing its transmit power will result in unnecessary power consumption and an increase in interference.

There is currently no way for a device to know the difference between a failed RNG-REQ caused by too low a power setting and a failed RNG-REQ caused by a collision.

Suggested Remedy

Clarify the ranging "power ramping" mechanism so that, in the event of a collision, subscribers do not unnecessarily ramp power before re-trying.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

It is recommended the commenter brings a contribution with specific remedy into the Sponsor Ballot process.

Group's Notes

Editor's Notes **Editor's Actions**

Comment by: Ron Murias **Membership Status:** Member **Date:** 2011-11-04

Comment # 108 **Document under Review:** P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 32 **Line** 44 **Fig/Table#** **Subclause**

It is not clear what functionality is required to create an "M2M device". The baseline document includes Clause 12 - System profiles for this purpose.

Suggested Remedy

Create/update system profiles to clearly define what features are used in an M2M device.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

It is recommended the commenter brings a contribution with specific remedy into the Sponsor Ballot process.

Group's Notes

Editor's Notes **Editor's Actions**

Comment by: Lei Wang **Membership Status:** Member **Date:** 2011/11/04

Comment # 063 **Document under Review:** IEEE P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 12 **Line** 30 **Fig/Table#** **Subclause** 6.3.22.11

This is a resubmission of of a Session #75 comment about M2M device -specific idle mode timer. The original comment (#032 in 16p-11/0023r2) was rejected by the reason "Many parts of the AWD is based on the assumption that the BS knows when the SS is an M2M device. And for the idle mode, the BS does not have to care of the idle mode because the idle mode is handled between a device and a paging controller, and the idle mode timer is managed by the device and the paging controller. For the second question, we need a separate idle mode timer to support longer paging cycle."

Again, strongly disagree with the above given reason. Here's why:
-- the fact that May parts of the AWD assumption the BS know the SS is a M2M device does not mean the BS really knows or our spec really takes care of making such an assumption true.
-- In addition, if BS does not need to care of idle mode, then when BS should include such a M2M specific idle mode timer, including in every DREG-CMD message??? Should not be!!!
-- Finally, how long do you need for M2M specific device idle mode timer? Please note the current regular idle mode timer can give you up to 18.2 hours for a 2-byte field. Now the proposed M2M specific idle mode timer is 3 bytes, then give you 4660.3 hours. Do you really something more than 18 hours long? note that the current long paging cycle is for fixed devices, where it will use the localized idle mode not requiring location update.

Ok, here's the original comment:
The introduction / use of "M2M device-specific idle mode timer" really has some serious issues, e.g.,
1. do the BS and a subscriber have the same determination regarding whether or not a subscriber is an M2M device? or in other words, do both sides know which idle mode timer should be used for the subscriber, normal idle mode timer or M2M device-specific timer?
2. why do we need a separate idle mode time for M2M devices? For fixed M2M devices, no, should not be, as the localized idle mode will address that issue.

Suggested Remedy

Make the following changes:
1. delete the text in line 32 to line 42 on page 12;
2. delete the text in line 2 to line 6 on page 9;
3. delete the Row in line 54 to line 58 on page 28.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

To answer question 1, it's a network entity, not a BS, that knows the type of the device and determines the required timer.
To address question 2, the idle mode timer for HTC device is a global value. However, M2M device specific idle mode timer is depedent on M2M device specific service type (e.g, paging cycle and etc) and this is an individual value. Thus, M2M device specific idle mode timer shall be included in idle mode initiation message (i.e, AAI-DREG-RSP message).

Group's Notes

Editor's Notes **Editor's Actions**

Comment by: Lei Wang **Membership Status:** Member **Date:** 2011/11/04

Comment # 061 **Document under Review:** IEEE P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 12 **Line** 18 **Fig/Table#** **Subclause** 6.3.22.6

This is a resubmission of of a Session #75 comment. The original comment (#061 in 16p-11/0023r2) was rejected by the reason "This may be applied for smaller paging cycle values. ".

Really cannot agree with this given reason. Note that, if a smaller paging cycle value is used, e.g., the UL report cycle/polling cycle is multiple times of paging cycle, then the M2M report code is used to tell when the M2M device get polled.

Ok, the following is the original comment:
Don't think the use of "Max number of paging cycle" is the right way to shape / delay the periodic UL non-realtime data transmission for M2M devices in case of network congestion. Note that the paging cycle can be up to 64k frames (not consider the new proposals to make it even longer).

Suggested Remedy

Make the following changes

1. Change the paragraph in line 18 on page 12 as follows:

MOB_PAG-ADV with M2M report code may be used to poll fixed M2M devices for periodic uplink non-realtime data transmission. ~~If an M2M device receives the DREG-RSP message with the Transmission Type set to 1 and Max number of paging cycle TLV during idle mode entry, the M2M device shall wait for the MOB_PAG-ADV with M2M report code as long as Max number of paging cycle * paging cycle before sending uplink data. If the M2M device does not receive at least one MOB_PAG-ADV with M2M report code within Max number of paging cycle * paging cycle , it may not send the uplink.~~

2. delete line 17 to 21 on page 9;

3. delete row in line 4 to 8 on page 29.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

When the M2M device miss the paging message, it monitors the paging message at the next paging cycle. It is common problem. If the long paging cycle can be a problem, ABS can set the Max number of paging cycle to 1. Moreover, M2M device with longer paging cycle additionally monitors the paging message in 2nd paging offset.

Group's Notes

Editor's Notes

Editor's Actions

Comment by: Lei Wang **Membership Status:** Member **Date:** 2011/11/04

Comment # 085 **Document under Review:** IEEE P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 15 **Line** 1 **Fig/Table#** **Subclause** 6.3.35

This is a resubmission of of a Session #75 comment. The original comment (#097 in 16p-11/0023r2) was rejected by the reason "Abnormal Power Down should be treated differently from other abnormal situations, since in other situations the devices are not time constrained in the same manner as for power down. Other cases should be treated separately. "

I really cannot agree with the above given reason of rejection. Here's why:
1. Some other system critical exceptions are even more time urgent the the power outage, e.g., gas pipeline leaking. Note that one of the main 16p M2M device types is meters/sensors, whose main function is "monitoring". When doing "monitoring", the exceptions are certainly needed to be considered.

2. when an exception occurs, the device shall report it to the application server and it is up to the applications to handle it. Well, come to layer 2 or 1, it is helpful to have some supporting mechanisms to timely delivery the exception report.

3. there are two different cases of exception reporting: individual exception and widely-spread exception. Note that the current 16e/16m design shall be able to handle the individual exception cases. In other words, 16p should focus on the widely-spread exception cases as 16p needs to support a large number of devices.

4. In the widely-spread exception cases, there are also two different cases in terms of potential ranging channel congestion, i.e.
4a: exception reporting at the time that a critical exception occurs, i.e., a large number of devices are trying to enter the network to report the exception;
4b: operation recovering after the critical exception has been fixed, if the exception caused a large number of devices were disconnected from the system.
For 4a, there is another question, i.e., do we really needed all the impacted devices to report the same exception?

In summary, I don't think the current section 6.3.35 has properly addressed the layer 2 supports to ranging channel congestion avoidance/handling due to a large number of devices in 16p, although the cumulative distribution function thing may help by desynchronizing the ranging channel access demand. I would strongly recommend changing section 6.3.35 to properly to cover the handling of wide-spread system critical exceptions.

Suggested Remedy

Make the following changes

1. throughout the 16p/D1 document, change "abnormal power down" to "widely-spread critical exception"

2. Insert the following text in line 52 page 15:

6.3.35.3 Operation Restoring after a Recovered Widely-Spread Critical Exception

If a widely-spread critical exception has caused that a large number of devices were disconnected from the system, then after the critical exception has been fixed, the procedures described in this subsection shall be used by the devices to enter the network to restore their normal operation.

The network entry procedures include TBD.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

The group considers the proposed remedy to be incomplete and inconsistent with other comments. A reviewer of this comment has observed that "The suggested remedy begs the question: How does the device determine that the critical exception is widely spread. I do not entirely disagree with the commenter, in paricular thet network entry after recovery needs to be addressed. A complete remedy is missing, however."

Group's Notes

Editor's Notes **Editor's Actions**

Comment by: Lei Wang **Membership Status:** Member **Date:** 2011/11/04

Comment # 083 **Document under Review:** IEEE P802.16p/D1 **Ballot ID:** 33

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 14 **Line** 52 **Fig/Table#** **Subclause** 6.3.34.1

I think I understand the purpose of introducing the Multicast Traffic reception timer, i.e., protect the device from waiting too long for the multicast data transmission after the anticipated transmission time. However, my question are:
1. Why does this happen? or in other words, what're the possible reasons to cause such error? BS does not actually do the transmission or the device cannot receive the multicast data?
2. if this happens, should the device inform the BS when it enters the network later for other reasons, e.g., UL traffic? If so, should the device keep track of the number of times missing multicast data?

Let's first find out if we really need the (mandatory) Multicast traffic reception timer mechanism, and then worry about the error report thing.

Suggested Remedy

Either delete the paragraph in line 52 on page 14 or clarify the need of the Multicast traffic reception timer and also change the last sentence of the paragraph as follows:

If the M2M Multicast Traffic Reception timer expires, the M2M device shall enter the paging unavailable interval as specified in 6.3.22.4, and the M2M device shall report the the BS such a failed M2M Multicast Traffic Reception error when it connects to the BS next time for some reasons, e.g., UL data transmission or location update. The format of the failed M2M Multicast Traffic Reception error report is TBD.

GroupResolution **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

The group considers the proposed remedy to be incomplete. A reviewer of this comment has observed that "Although M2M device reports the error of multicast data receptions after longer time to BS, BS cannot recover the error because BS flushes the multicast TX buffer after sending the multicast data."

Group's Notes

Editor's Notes **Editor's Actions**

Schedule for recirculation ballot and resolution meeting

- PAR update approval: 2011-12-06

  Ballot Group formation complete: ~2012-01-06

- 30 day Recirculation (approximately 2011-12-05 to 2012-01-05)
- if conditions met:
  - 30-day Sponsor Ballot (approximately 2012-01-10 to 2012-02-10)
- else
  - Comment resolution meeting: 2012-01-16 through 2012-01-19, followed by confirmation recirc

802.16 WG Motion

802.16 Closing Plenary: 2011-11-10

Motion: To request the WG to forward IEEE P802.16p to the IEEE 802 LMSC Executive Committee, requesting conditional approval for IEEE-SA Sponsor Ballot.

- Proposed: Erik Colban
- Seconded: Brian Kiernan
- Approved 32-0-0

LMSC Motion

- To grant conditional approval, per Clause 14 of the IEEE 802 Operations Manual, to forward P802.16p for Sponsor Ballot
- Moved:
- Seconded:
- Approve:
- Disapprove:
- Abstain:

5.30 ME 802.21a forward to RevCom (conditional) Das 10 03:43 PM

Das presented 21-11-0193-00

Motion is EC Conditional Approval to forward the IEEE P802.21a Draft to the IEEE SA RevCom.

Moved by Das, seconded by Mody

No discussion.

Vote is 14/0/0, motion passes.

IEEE 802.21 Motions in November Plenary

DCN: 21-11-0193-00-0000

Title: Request for EC Conditional Approval

Date Submitted: Nov 10, 2011

Presented at EC Closing Plenary, November 2011

Authors or Source(s):

Subir Das, Telcordia Technologies Inc

Abstract: This document contains Sponsor Ballots summary and motions for EC conditional approval to forward the IEEE P802.21a Draft to the IEEE SA RevCom

Motion for a Conditional Approval to forward the IEEE P802.21a Draft to the IEEE SA RevCom

Rules

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 confirmation ballot and resolution meeting.**

Sponsor Ballot Statistics

Number of People in the Sponsor Ballot Pool = 80

IEEE Sponsor / Re-circ Ballot	Response Ratio	Approval Ratio	Negative Votes	Number of Negative Comments Received	Comment Resolution Status	Draft Status
Sponsor Ballot #1 Open 02-Aug-2011, **Closed** 31-Aug-2011	**81%** (4% Abstain)	**96%**	2 negative votes with comments, 1 negative vote without comment	27	Comments addressed & resolved 21-11-148-07	P802.21/D 5.0 prepared
Sponsor Ballot Re-circ #1 Open 25-Oct-2011, **Closed** 04-Nov-2011	**85%** (5% Abstain)	**96%**	2 negative votes with comments, 1 invalid vote (comment is not on changed text)	2	Comments addressed & resolved 21-11-175-02	P802.21/D6.0 being prepared

Voters with Negative Votes

Commenter	Number of TR/ ER/GR Comments during SB #1 and SB Re-circ #1	Status After Sponsor Ballot Re-circ #1
Clint Chaplin	SB#1: 1/12/0 SB Re-circ#1: 1/0/0	Disapprove
Yoshihiro Ohba	SB#1: 9/7/0 SB Re-circ#1: 1/0/0	Approve
Subir Das	SB#1: 0/0/0 SB Re-Circ #1: 0/0/0	Approve
Paul Lambert	SB#1: 0/0/0 SB Re-circ#1: 0/0/1	Disapprove (Note: Did not vote during initial ballot)

Links to Sponsor Ballot Comments and Resolutions

- **SB #1:**
  - **https://mentor.ieee.org/802.21/dcn/11/21-11-0148-07-0sec-802-21a-sb-comments.xls**
- **SB re-circ #1:**
  - **https://mentor.ieee.org/802.21/dcn/11/21-11-0175-02-0sec-802-21a-sbr1-comments.xls**

Negative Comments and Resolution Details (SB Re-Circ#1)(1/2)

Comment #r01-16 – Document 21-11-0175-02

Commenter: Clint Chaplin

Comment:“ AUTH"

Suggested remedy: "AUTH-TLV"

Resolution Status: Accepted

Resolution Detail: Replaced “AUTH” with “AUTH-TLV”

Negative Comments and Resolution Details (SB Re-Circ#1)((2/2)

Comment #r01-2 – Document 21-11-0175-02

Commenter: Paul Lambert

Comment: The text describes the use of TLS and certificates for authentication but does not show how the certificates would be correctly bound to their usage. The use of TLS without further qualification of how it is to be used may also allow attacks on the TLS confidentiality.

Suggested remedy: Add text describing how the certificates used by TLS would provide security and show explicit bindings and checks used to determine if the certificate is appropriate.

Resolution Status: Revised

Resolution Detail: This new comment refers to a section that has not been modified in the latest version of the draft and therefore it is an Invalid Comment. However, BRC discussed with the commenter and decided to add the following text (in colors) as shown below:

Change the 1st paragraph of 9.1 as follows:

"In this option, a mobile node, the client, and a PoS, the server, execute a TLS, specified in IETF RFC 5246, or DTLS, specified in IETF RFC 4347, to establish MIH protection. When the MIH protocol transport is reliable, TLS is used. Otherwise, DTLS is used. In the rest of this standard, (D)TLS is used to denote TLS or DTLS. In a (D)TLS handshake, the mutual authentication is executed through either a pre-shared key or a public key certified by a trusted third party such as a certificate authority. It should be noted that all certificates are required to be validated. The TLS certificate used by the PoS is expected to be provided to the mobile node in a secure manner, e.g., during provisioning process. In this option, the authentication may or may not be related to access control. It can be an access authentication for MIH service if a PoS holds service credentials for the mobile nodes."

Time Line

Tentative time-line for the Launch of Sponsor Ballot Re-circ #2

- **November 28, 2011 - Issue IEEE P802.21a/D6.0**
- **December 02 – December 11, 2011 – Re-circulation #2**

P802.21 WG Motion

To authorize the P802.21 WG Chair to make a motion to the IEEE 802 Executive Committee for conditional approval to forward the IEEE 802.21a Draft to the IEEE-SA RevCom

Move: Yoshihiro Ohba
Second: Antony Chan

For: 10
Against: 0
Abstain: 0

Motion Passes

EC Motion

Motion: EC Conditional Approval to forward the IEEE P802.21a Draft to the IEEE SA RevCom

Move: Subir Das

Second: Apurva Mody

For:

Against:

Abstain:

Motion

5.31 ME 802.21b forward to RevCom (conditional) Das 10 03:47 PM

Das presented 21-11-0194-00

Motion is EC Conditional Approval to forward the IEEE P802.21b Draft to the IEEE SA RevCom

Moved by Das, seconded by Mody

No discussion.

Vote is 14/0/0, motion passes.

IEEE 802.21 Motions in November Plenary

DCN: 21-11-0194-00-0000

Title: Request for EC Conditional Approval

Date Submitted: Nov 10, 2011

Presented at EC Closing Plenary, November 2011

Authors or Source(s):

Subir Das, **Telcordia Technologies Inc**

Abstract: This document contains Sponsor Ballots summary and motions for EC conditional approval to forward the IEEE P802.21b to the IEEE SA RevCom

Motion for a Conditional Approval to forward the IEEE P802.21b Draft to the IEEE SA RevCom

Rules

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 confirmation ballot and resolution meeting.**

Sponsor Ballot Statistics

Number of People in the Sponsor Ballot Pool = 75

IEEE Sponsor / Re-circ Ballot	Response Ratio	Approval Ratio	Negative Votes	Number of Negative Comments Received	Comment Resolution Status	Draft Status
Sponsor Ballot #1 Open 02-Aug-2011, **Closed** 31-Aug-2011	**82%** **(3% abstain)**	**95%**	3 negative votes with comments	3	Comments addressed & resolved - 21-11-0149-03-bcst-802-21b-sb-comments	P802.21/D 5.0 prepared
Sponsor Ballot Re-circ #1 Open 25-Oct-2011, **Closed** 04-Nov-2011 ,	**86%** **(4% abstain)**	**96%**	2 negative votes with 1 comment, 1 invalid vote (comment is not on changed text)	1	Comments addressed & resolved – 21-11-0181-01-bcst-802-21b-sbr1-comments	P802.21/D 6.0 being prepared

Voters with Negative Votes

Commenter	Number of TR/ ER/GR Comments during SB #1 and SB Re-circ #1	Status After Sponsor Ballot Re-circ #1
Chaplin, Clint	SB :0/6/0 SB Re-circ #1: 0/0/0	Approve
Subir Das	SB: 6/3/5 SB Re-circ #1: 0/0/0	Approve
Jee, Junghoon	SB : 1/0/0 SB Re-circ #1: 0/0/0	Disapprove
Paul Lambert	SB: 0/0/0 SB Re-circ #1: 1/0/0	Disapprove (Note: Did not vote during initial ballot)

Links to Sponsor Ballot Comments and Resolutions

- **SB #1:**
  - **https://mentor.ieee.org/802.21/dcn/11/21-11-0149-03-bcst-802-21b-sb-comments.xls**

- **SB re-circ #1:**
  - **https://mentor.ieee.org/802.21/dcn/11/21-11-0181-01-bcst-802-21b-sbr1-comments.xls**

Negative Comments and Resolution Details (SB Re-Circ#1)

Comment #3 – Document 21-11-0181-01-bcast-802-21b-sbr1-comments.xls

Commenter: Paul Lambert

Comment: A broadcast to start handover will allow any user to spoof the message and disconnect all listening devices. Connecting to a down-link only channel does not provide any means to validate the handoff.

Suggested remedy: remove feature or prevent it's miss use.

Resolution Status: Rejected

Resolution Detail: This new comment refers to a section that has not been modified in the latest version of the draft and therefore it is an Invalid Comment. Moreover, security in general is out of 802.21b PAR's scope.

Time Line

Tentative Time-line for the Launch of Sponsor Ballot Re-circ #2

- **November 28 - Issue IEEE P802.21b/D6.0**
- **December 02 – December 11, 2011 – Re-circulation #2**

P802.21 WG Motion

To authorize the P802.21 WG Chair to make a motion to the IEEE 802 Executive Committee for conditional approval to forward the IEEE 802.21b Draft to the IEEE-SA RevCom

Move: Antonio de la Oliva
Second: Lily Chen

For: 10
Against: 0
Abstain: 0

Motion passes

EC Motion

Motion: EC Conditional Approval to forward the IEEE P802.21b Draft to the IEEE SA RevCom

Move: Subir Das

Second: Apurva Mody

For:

Against:

Abstain:

Motion

6.00 Executive Committee Study Groups, Working Groups, TAGs

6.01 MI* 802.22 RASGCIM, 1st extension Mody 0

Approved as part of the consent agenda.

6.02 MI 802.3 EPON PHY for Coax (EPoC) new SG Law 5 03:50 PM

Law presented 802d3_1111_closing_EC.pdf, slide 7

Law said that they had representation from the cable industry and that they were interested in this work.

Motion is The LMSC Executive Committee grants approval for the formation of the EPON for Coax (EPoC) PHY within IEEE 802.3

Moved by Law, seconded by Grow

Nikolich said that titles says passive optical network for Coax.

Law said that it should say EPON protocol for PHY for Coax.

Howard Frazier said that the study group name is EPON protocol over Coax and that the motion should reference the study group.

Motion now says Motion is The LMSC Executive Committee grants approval for the formation of the EPON Protocol over Coax (EPoC) PHY Study Group within IEEE 802.3.

Vote is 14/0/0, motion passes

IEEE 802.3 EPON for Coax (EPoC) PHY Study Group

Motion:

The LMSC Executive Committee grants approval for the formation of the EPON for Coax (EPoC) PHY within IEEE 802.3

M: D Law, S: ?????

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

73 CFI attendees, 32 interested in participating

Working Group vote:

Y: 48 N: 0 A: 13

6.03 MI* 802.3 Next Generation 100 Gb/s Optical Ethernet, 1st extension **Law** **0**

Approved as part of the consent agenda.

6.04 MI* 802.3 Extended EPON, 1st extension **Law** **0**

Approved as part of the consent agenda.

6.05 MI 802.15 Peer aware communications, new SG **Heile** **5** **03:56 PM**

Heile presented 15-11-0849-01-0000, slides 43-44

Motion is IEEE 802.15 working group seeks approval from the 802 EC to form a study group to develop the PAR and 5C documents for Peer Aware Communications (PAC).

Moved by Heile, seconded by Gilb

No discussion.

Vote is 13/0/0, motion passes

Study Group for Peer Aware Communications

Develop a draft PAR and 5C(for March 2012) addressing:

- Peer to peer and infrastructureless communications among a 100 or more devices with fully distributed coordination
- Operation in unlicensed bands 2.4gig range and below
- Discovery for peer information without association
- Typical discovery signaling rate of greater than 100 kbps
- Scalable data transmission rates typically in the low Mbps range
- Plus more

Study Group for Peer Aware Communications

Motion: IEEE 802.15 working group seeks approval from the 802 EC to form a study group to develop the PAR and 5C documents for Peer Aware Communications (PAC).

(WG 48-0-0)

- Moved: Heile Second: Gilb

6.06 MI 802.15 Communication requirements for Positive Train Control, new SG **Heile** **5 04:04 PM**

Heile presented 15-11-0849-01-0000, slides 39-42

Motion is The 802.15 Working Group seeks approval from the 802 EC to form a study group to develop the PAR and 5C documents for a wireless communications standard supporting US-mandated Positive Train Control systems.

Moved by Heile, seconded by Dr. James P. K. “Trainwreck” Gilb

Law suggested coordination IEEE Rail Transit Vehicle Interface Standards Committee.

Shellhammer asked if a joint sponsorship would be appropriate.

Heile said it would be explored but he didn't think that there would be a chance for collision between the groups.

Das asked if this US only.

Heile said that it is currently strongly North American, but they have participation from Korea.

Thompson said that there was a Webinar at the Computer History Museum regarding rail travel.

Rosdahl spoke for the motion and said that he thought that Heile was on the right track.

Vote is 14/0/0, motion passes

Study Group on Positive Train Control

Positive Train Control is a vital part of rail transportation systems of the future, and in the US it was mandated in 2008 by the US Congress. There are over 250,000 km of track in North America alone, approximately 24,000 locomotives, and the potential for hundreds of thousands of wayside sensors and other infrastructure. There are many instances in large-scale device command and control applications where infrastructure requirements need to be minimized for effective deployment.

Study Group on Positive Train Control

To address these needs 802.15 is proposing an amendment to IEEE 802.15.4 or if needed a new standard (PAR/5C in March 2012) supporting things like:

- Operation in a variety of radio frequency bands dedicated to this purpose
- Typical data rates from 9.6 to 200 kbits per second
- Simultaneous multiple networks
- Mobility up to 500km/h (1000km/h closing speeds, train to train)
- And more

Study Group on Positive Train Control

Entities who attended discussions this week in Atlanta

- US DOT Federal Transit Administration
- Bombardier Transportation
- Korea Railroad Research Center
- CalAmp (manufacturers of the only available proprietary PTC radio)

Entities who could not make this meeting but will attend in the future:

- US DOT Federal Railroad Administration
- US DOT Federal Transit Administration
- US DOT Volpe Center

Others who have expressed significant interest:

- American Association of Railroads
- Union Pacific Railroad

Motion

- Motion: The 802.15 Working Group seeks approval from the 802 EC to form a study group to develop the PAR and 5C documents for a wireless communications standard supporting US-mandated Positive Train Control systems.

(WG 49-0-0)

Moved by Heile, Seconded by “Trainwreck”

6.07 MI 802.15.4 Amendment for medical applications in unlicensed bands in China, new SG Heile 5 04:09 PM

Heile presented 15-11-0849-01-0000, slides 45-46

Motion is 802.15 Working Group seeks approval from the 802 EC to form a study group to develop the PAR and 5c documents for a PHY amendment to 802.15.4 to take advantage of newly available unlicensed spectrum for medical applications in China.

Moved by Heile, seconded by Gilb

Shellhammer asked if it was unlicensed and there would be other device would be in the band or if it was unlicensed only for medical devices.

Heile said that the band was unlicensed only for medical devices.

Vote is 14/0/0, motion passes

Study Group for China Medical Bands (CMB)

- China has established a group of dedicated sub one GHz bands for use in medical applications similar to what the FCC has done in the 2.3 GHz band
- Our Liaison with the Chinese WPAN Forum has requested we consider an amendment to 802.15.4 to address this application

Study Group for China Medical Bands (CMB)

Motion: 802.15 Working Group seeks approval from the 802 EC to form a study group to develop the PAR and 5c documents for a PHY amendment to 802.15.4 to take advantage of newly available unlicensed spectrum for medical applications in China.

(WG 46-0-1)

Moved: Heile Second: Gilb

6.08 MI 802.11 C60G China 60 GHz new SG **Kraemer 5 04:12 PM**

Kraemer presented 11-11-1584-00-0000-november-2011-ec-motions.ppt, slide 8

Motion is to approve formation of an 802.11 Study Group to establish a forum for developing the procedural framework, clarifying the technical goals, and developing a PAR and five criteria focused on CWPAN extensions to P802.11ad

Moved by Kraemer, seconded by Lynch

Thompson was concerned with a project in which the interested parties would structurally be unable to attend the meetings.

Kraemer said that the people involved agree that there is an issue.

Law asked what “procedural” meant.

Kraemer said that it was because there would be ad-hocs and interims in China and that that they need to clarify the logistics.

Marks said that the chair has the option to give membership to parties involved in the development of the standard.

Vote is 14/0/0, motion passes

Motion – China 60 GHz Study Group

- **Approve formation of an 802.11 Study Group to establish a forum for developing the procedural framework, clarifying the technical goals, and developing a PAR and five criteria focused on CWPAN extensions to P802.11ad**

- **Moved: Bruce Kraemer**
- **Seconded:**

- **In the WG: 53,0,0, passes**

6.09 MI 802.11 ISD Infrastructure service discovery Kraemer 5 04:17 PM

Kraemer presented 11-11-1584-00-0000-november-2011-ec-motions.ppt, slide 9

Motion is to approve formation of an 802.11 Study Group to consider Infrastructure Service Discovery with the intent of creating a PAR and five criteria.

Moved by Kraemer, seconded by Lynch

Das asked what infrastructure means here.

Kraemer said that it means that it is not peer-to-peer. It is infrastructure within the WLAN context.

Vote is 13/0/0, motion passes

Motion – Infrastructure Service Discovery

- **Approve formation of an 802.11 Study Group to consider Infrastructure Service Discovery with the intent of creating a PAR and five criteria.**

- **Moved: Bruce Kraemer**
- **Seconded:**

- **In the WG: Result: 37,2,12 passes**

7.01 ME Press releases for 802.22 WG receiving 2011 IEEE SA Emerging Technology of the year award — Mody — 5 — 04:19 PM

Mody presented 22-11-0141-03

Motion is that the EC approves the P802.22 Press Release as circulated to the IEEE SA and to the 802 EC. The contents of the Press Release can be found in Document Document 22-11-0133 Rev 2 (https://mentor.ieee.org/802.22/dcn/11/22-11-0133-02-0000-press-release-emerging-technology-award.doc)

Moved by Mody, seconded Law

No discussion.

Vote is 12/0/1, motion passes

IEEE P802.22 Press Release

P802.22.2 WG Motion 2 – Document – 22-11-0142 Rev0 (https://mentor.ieee.org/802.22/dcn/11/22-11-0142-00-0000-802-22-wg-motions-n)

IEEE 802.22 WG Motion 4:

Move to allow the Chair to submit the IEEE 802.22-2011 Press Release in anticipation of the IEEE 802.22 Working Group receiving the IEEE SA Emerging Technology Award as contained in Document 22-11-0133 Rev 2 (https://mentor.ieee.org/802.22/dcn/11/22-11-0133-02-0000-press-release-emerging-technology) to the 802 EC. Move to allow the Chair to make changes to the document at his discretion based on the comments from IEEE SA or the IEEE 802 EC and submit the revised press release to the IEEE-SA for distribution.

Move: Victor Tawil

Second: Tom Gurley

For: 9

Against: 0

Abstain: 0

Motion Passes

IEEE P802.22 Press Release

Executive Committee Motion

Move that the EC approves the P802.22 Press Release as circulated to the IEEE SA and to the 802 EC. The contents of the Press Release can be found in Document Document 22-11-0133 Rev 2 (https://mentor.ieee.org/802.22/dcn/11/22-11-0133-02-0000-press-release-eme)

Move: Apurva N. Mody

Second:

For:

Against:

Abstain:

7.02	**ME***	**Approve FCC filing 18-11-0090-02-0000**	**Lynch**	**0**	

Approved as part of the consent agenda.

7.03	**ME***	**Approve FCC filing 18-11-0091-01-0000**	**Lynch**	**0**	

Approved as part of the consent agenda

7.04	**II**	**Liaison response to ITU-T SG15**	**Jeffree**	**5**	**04:22 PM**

Jeffree said that they had a liaison established between 802.1 and ITU-T SG15.

7.05	**ME**	**Liaison letter to ITU-T Study Group 15: OTNT Standardization Work Plan**	**Law**	**2**	**04:26 PM**

Law presented 802d3_1111_closing_EC.pdf, slide 13

Grow said that it has been said previously that items going to ITU need to be approved as they are governmental bodies.

Marks said that in the past we had a different interpretation.

Jeffree said what we are making a difference between ITU and the ITU working groups.

Thaler said that since our rules specifically call out ITU, we should apply it to all groups.

Sherman said that he is not convinced that it is the rule. Sherman said that it is different if it is a WG to the body than if it is an 802 EC position.

Law said that he will interpret this as not requiring a motion. It has been shared with the 802 EC. No motion required.

Liaison letter to ITU-T Study Group 15 OTNT Standardization Work Plan

- The LMSC Executive Committee approves the letter ITU_01_1111.pdf, with editorial license granted to the Chair (or his appointed agent), as a liaison communication from the IEEE 802.3 working group to ITU-T Study Group 15 in respect to the OTNT Standardization Work Plan.

  M: D Law, S: ?????

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

  Working Group vote:

  Y: 85, N: 0, A: 0

7.06 ME Liaison letter to IEC requesting access to IEC 68025-1 and IEC 68025-2 **Law** **2** **04:28 PM**

Law presented 802d3_1111_closing_EC.pdf, slide 15

Law said that this has been presented to the 802 EC and there is a small editorial correction. No motion required.

Liaison letter to IEC requesting access to IEC 68025-1 and IEC 68025-2

- The LMSC Executive Committee approves the letter IEC_01_1111.pdf, with editorial license granted to the Chair (or his appointed agent), as a liaison communication from the IEEE 802.3 working group to the IEC requesting access to IEC 68025-1 and IEC 68025-2.

  M: D Law, S: ?????

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

  Working Group vote:

  Y: 53, N: 2, A: 6

7.07 ME IEEE 802.3 Interpretation 1-11/11 response: Simultaneous Output Power **Law** **2** **04:30 PM**

Law presented 802d3_1111_closing_EC.pdf, slides 17-18

Motion is the LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 1-11/11.

Moved by Law, seconded by Grow

No discussion.

Vote is 14/0/0, motion passes

Interpretation 1-11/11

- Request
  - http://www.ieee802.org/3/interp/interp-1-1111.pdf
- Response for both questions 1 and 2
  - The standard is unambiguous.
  - This request is being returned to you because the question asked does not constitute a request for interpretation but instead a request for consultation. Generally, an interpretation request is submitted when the wording of a specific clause or portion of a standard is ambiguous or incomplete. The request should state the two or more possible interpretations or the lack of completeness of the text.
  - The header text on the PICS pro-forma indicates that the implementer claims conformance. The committee does not take positions as to whether a specific implementation is conformant.

Interpretation 1-11/11

- The LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 1-11/11.

M: D Law, S: ??

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

Working Group vote:

Y: 57, N: 0, A: 6

7.08 ME IEEE 802.3 Interpretation 2-11/11 response: MMD register access Law 2 04:32 PM

Law presented 802d3_1111_closing_EC.pdf, slides 20-21

Motion is the LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 2-11/11.

Moved by Law, seconded by Grow

No discussion.

Vote is 13/0/0, motion passes

Interpretation 2-11/11

- Request
  - http://www.ieee802.org/3/interp/interp-2-1111.pdf
- Response for both questions 1 and 2
  - This request is being returned to you because the questions asked do not constitute a request for interpretation but instead a request for consultation. Generally, an interpretation request is submitted when the wording of a specific clause or portion of a standard is ambiguous or incomplete. The request should state the two or more possible interpretations or the lack of completeness of the text.
- Response for questions 1
  - The standard is unambiguous. Refer to Table 45-2.
- Response for questions 2
  - The standard is unambiguous. Refer to section 45.2.

Interpretation 2-11/11

- The LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 2-11/11.

M: D Law, S: ??

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

Working Group vote:

Y: 62, N: 0, A: 5

7.09 ME IEEE 802.3 Interpretation 3-11/11 response: Missing Section Law 2 04:35 PM

Law presented 802d3_1111_closing_EC.pdf, slides 23-24

Motion is the LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 3-11/11.

Moved by Law, seconded by Grow

No discussion.

Vote is 13/0/0, motion passes

Law requested a moment of silence for the passing of the last interpretation.

Interpretation 3-11/11

- Request
  - http://www.ieee802.org/3/interp/interp-3-1111.pdf
- Response
  - The standard is unambiguous. Section 74.7.4.7 appears in IEEE Std 802.3-2008 which IEEE Std 802.3ba-2010 is part of and amends. The amendment does not stand on its own.

Interpretation 3-11/11

- The LMSC Executive Committee approves the response to IEEE 802.3 interpretation request 3-11/11.

M: D Law, S: ??

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

Working Group vote:

Y: 65, N: 0, A: 1

7.10 ME IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group press release **Law** **3 04:42 PM**

Law presented 802d3_1111_closing_EC.pdf, slide 26 and IEEE_EPON_Coax_Study_Group_PR_V3p0.pdf

Motion is The LMSC Executive Committee supports the IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group press release IEEE_EPON_Coax_Study_Group_PR_V3p0.pdf, with editorial license granted to the Chair (or his appointed agent).

Moved by Law, seconded by Grow

Marks asked about the comment about it being the most successful 802.3 standard. He asked if it was OK with the WG.

Law said that the WG did not review the press release as it is not required. A press release is developed by the SA and approved by the 802 EC.

Marks said that the sentence doesn't say it is based on the number of ports.

Thompson suggested changing it to “has shipped more ports in the last 10 years.

Document will be edited with the changes.

Vote is 13/0/0, motion passes

IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group press release

- The LMSC Executive Committee supports the IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group press release IEEE_EPON_Coax_Study_Group_PR_V3p0.pdf, with editorial license granted to the Chair (or his appointed agent).

  M: D Law, S: ??

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

DRAFT NOT FOR PUBLICATION
Draft version 3.0, November 10, 2011

Contact:
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IEEE LAUNCHES NEW EFFORT TO ADVANCE ETHERNET PASSIVE OPTICAL NETWORK (EPON) PROTOCOL OVER EXISTING COAXIAL DISTRIBUTION NETWORKS

New IEEE study group investigates 802.3 specifications for running Ethernet over coaxial cable to increase data speeds 10-fold for residential and business subscribers worldwide

PISCATAWAY, N.J., USA, [DATE] – IEEE, the world's largest professional association advancing technology for humanity, today announced it has launched a study group to investigate a new PHY (Physical Layer) standard for operating the Ethernet Passive Optical Network (EPON) protocol transparently over coaxial distribution networks. The newly formed IEEE 802.3 EPON Protocol over Coax (EPoC) Study Group will explore using the IEEE 802.3 Ethernet specifications to significantly boost and broaden the capabilities of Ethernet in existing access networks that currently serve hundreds of millions of residential and business subscribers around the world.

IEEE 802.3 EPON is the market-leading fiber-access technology, and the most successful standard developed by the IEEE 802.3 Working Group in the last decade, with worldwide deployments supporting more than 60 million subscribers today and an anticipated subscriber base of more than 100 million by the end of 2013. These systems support a diverse suite of business and residential services, including IPTV (Internet Protocol Television), VoIP (Voice-over-IP), commercial-grade data services, and mobile backhaul. IEEE 802.3 EPON specifications include symmetric data rates of 1 Gb/s and 10 Gb/s, as well as asymmetric data rates of 10 Gb/s downstream and 1 Gb/s upstream.

“Operating EPON transparently over coax is a significant step forward. It will transform the industry by greatly simplifying operator networks while simultaneously offering subscribers easy and efficient access to dramatically increased bandwidth,” said Howard Frazier, chair, IEEE 802.3 EPoC Study Group and senior technical director, Broadcom Corporation. “The ability to leverage existing Ethernet infrastructures and cable plant investments while offering a ten-fold increase in data speeds is revolutionary.”

In many locations around the world, fiber stops at the street, basement, or curb with coaxial cable spanning the remaining distance to the subscriber, a significant percentage of whom are in multiple dwelling/tenant units. Pulling fiber is expensive and time consuming and Multiple Service Operators (MSOs) must find ways to lower the cost of upgrading their networks. The new IEEE 802.3 effort will directly address the needs of cable operators who want an end-to-end Ethernet network capable of efficiently supporting next-generation services such as video-over-IP.

The IEEE 802.3 EPoC Study Group enjoys the support of a diverse community of stakeholders from around the world, including components vendors, network equipment suppliers, cable operators, and MSOs.

“This effort is an industry pull not a technology push. We are pleased with the enthusiastic reaction we’ve received from industry who have turned to the IEEE specifically to investigate the potential for using the IEEE 802.3 EPON protocol on existing coaxial cable networks,” said David Law, chair, IEEE 802.3 Working Group and distinguished engineer, HP Networking.

The IEEE 802.3 EPoC Study Group will explore market demand, network compatibility considerations, and available technologies for a PHY specification for operating the IEEE 802.3 EPON protocol over coaxial distribution networks. The IEEE 802.3 EPoC Study Group will meet for the first time in January 2012, with the expectation that results from the investigation could be completed by July 2012.

For more information about the IEEE 802.3 EPoC Study Group, please visit: http://www.ieee802.org/3/epoc/index.html. To learn more about IEEE-SA visit us on Facebook at http://www.facebook.com/ieeesa, follow @ieeesa on Twitter, or connect with us on the Standards Insight Blog at http://www.standardsinsight.com.

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###

7.11 ME Approval of head of delegation for ISO SC6 meeting Kraemer 3 04:45 PM

Kraemer presented 11-11-1584-00, slide 10

Motion is to Appoint Bruce Kraemer as IEEE 802 Head of Delegation (HoD) to the SC6 meeting in Feb 2012 and the WAPI Comment Resolution Meetings (CRMs) and authorise to:

- Appoint the IEEE 802 delegation
- Approve any necessary submissions
- Call any necessary preparation teleconferences

Moved by Kraemer, seconded by Lynch

Thompson asked if Kraemer had support from his employer for travel and expenses.

Law said that it was nice that we are now agreeing on the format for the dates.

Vote is 14/0/0, motion passes

Motion - Empower HoD to ISO/IEC/JTC1/SC6

- **Appoint Bruce Kraemer as IEEE 802 Head of Delegation (HoD) to the SC6 meeting in Feb 2012 and the WAPI Comment Resolution Meetings (CRMs) and authorise to:**
  - Appoint the IEEE 802 delegation
  - Approve any necessary submissions
  - Call any necessary preparation teleconferences
- **Moved: Bruce Kraemer**
- **Seconded:**
- **In the WG: Result: 57,0,0 passes**

7.12 ME Approval of liaison with P1905.1 **Kraemer 3 04:48 PM**

Kraemer presented 11-11-1584-00, slide 11-12

Motion is to request the 802 chair to establish a liaison between IEEE 802 and IEEE P1905.1 for the purpose of enabling the exchange of technical information describing the P1905.1 abstraction layer that interfaces with 802 technologies.

The Technical Information might include

- Draft Standards
- Submissions

Moved by Kraemer, seconded by Law

Kraemer said that Nikolich will take the lead on this.

Nikolich said that he does not want to get involved in an in-depth back and forth.

Kraemer does not Nikolich to be the gate keeper, but rather to open the gate so that information can flow.

Nikolich will reach out to 1905.1 and suggest that communications be directly with the WG chairs who can specify the individuals to participate.

Thaler said that some have received communications that this is an attempt to slow 1905.1 down. Thaler wants to make sure that the effect of the interaction is not to slow 1905.1 down.

Heile said that part of the 1905.1 behavior is what is creating the issues, for example, the veil that prevents 802 form understanding what is going on.

Shellhammer asked what was the expectation of what would happen.

Nikolich said that the major purpose would be to share drafts.

Sherman asked how one joins an entity ballot pool.

Grow said that only entities can join and that there is a fee associated with becoming an SA entity member.

Vote is 13/0/1, motion passes

Motion – P1905.1 liaison

- **Request the 802 chair to establish a liaison between IEEE 802 and IEEE P1905.1 for the purpose of enabling the exchange of technical information describing the P1905.1 abstraction layer that interfaces with 802 technologies.**

- **The Technical Information might include**
  - Draft Standards
  - Submissions
- **Moved: Bruce Kraemer**
- **Seconded:**

Wednesday Agenda Item 4.4

P1905.1 Convergent Digital Home Network Working Group

Entity Based

PAR

5.2 Scope: The standard defines an abstraction layer for multiple home networking technologies. The abstraction layer provides a **common data and control Service Access Point** to the heterogeneous home networking technologies described in the following specifications: IEEE P1901, IEEE **802.11**, IEEE 802.3 and MoCA 1.1. The standard is extendable to work with other home networking technologies.

The abstraction layer supports dynamic interface selection for transmission of packets arriving from any interface (upper protocol layers or underlying network technologies). **End-to-end Quality of Service (QoS)** is supported. Also specified are procedures, protocols and guidelines to provide a simplified user experience to add devices to the network, to set up encryption keys, to extend the network coverage, and to provide network management features to address issues related to neighbor discovery, topology discovery, path selection, QoS negotiation, and network control and management.

8.00 IEEE SA items

There were no IEEE SA items.

9.00 Information Items

9.01 II Update on upcoming venues – Geneva, July 2013 **Heile/Rosh dahl** **5** **4:58 PM**

Rosdahl presented ec-11-0025-02, slide 6-7

Grow said that we may need to renegotiate our vendor contracts or the meetings to which it applies as some of the services would be supplied by the site.

Nikolich said that the result may be that we need to draw down our reserves by $250 k our of $1.1 M.

Jeffree asked if this was because we cannot charge a meeting fee.

Grow said that we will not be able to charge a meeting fee, but we may be able to require attendees to buy a meal plan that would offset some food and beverage fees.

Shellhammer asked for clarification, would there be no registration fee?

Grow said yes.

Marks asked if we could charge a fee for people who want to get participation credit, but not to attend the meeting.

Law said that for people who attend every meeting, they would not need to pay to get credit.

Heile is saying that they are still trying to determine if there is a way to charge a fee.

Nikolich wants to be able to give Rigsbee and Grow a sense of the amount we feel comfortable subsidizing a meeting in Geneva.

Kraemer said that this could be a 20% hit. However, he is in favor of proceding.

Shellhammer said that there is a third choice, not to pay for food, so we should be planning on going and only selecting if we pay for food or not.

Law said that one of the purposes of the reserve is to hold meetings like this.

Grow agreed Law's comment.

Thaler said that we should plan on it being different than what we did in the past. This would work out to be about $200 per attendee (at 800 attendees and $160 k deficit), which would require a meeting fee increase.

Marks said that we should meet in Geneva and is OK with running a deficit. He doesn't think we should not provide food.

John Messenger said that because we don't charge a fee for this non-North American meeting, doesn't mean that we won't be able to charge a fee for future non-North American meeting.

9.01 Update on upcoming venues – Geneva, July 2013

- **STATUS:**
- **Approved for site by 802 EC in July 2011**
- **Draft MOU being updated from previous one**
- **Set of definite questions that have not been answered**
  - Due to send out on Monday
- **If financial and other concerns addressed, then we will go there.**
  - Back up plan – 1 alternative would be China, but whether to execute this opportunity for this choice must be determined by the end of first week of December.

Future 802 Plenary Meetings - 2012

March 11-16, 2012 –Hilton Waikoloa, Big Island, Hawaii, USA

July 15-20, 2012 Grand Hyatt Manchester, San Diego, CA, USA

Nov 11-16, 2012 Grand Hyatt San Antonio, San Antonio, TX, USA

9.02 II JTC1 ad-hoc report **Myles** **5 05:12 PM**

Myles presented 11-11-1586-00, slides 2-6

Nikolich asked how we know what is in N-UHT if it is Chinese.

Myles said that the principles in N-UHT are presented in ISO meetings in English.

Stephens asked how soon would we get the updates to the ISO.

Kraemer said next week.

Thompson said that we were backing away before, but we now need to embrace this more now.

Abstract

Closing report for JTC1 ad hoc for Nov 2011, Atlanta

JTC1 ad hoc focused on preparation for upcoming SC6 meeting

- **Progress in Atlanta (Nov 2011)**
  - Review liaisons to SC6
    - Recently 11ae, 11aa, 11mb were liaised
  - Review status of WAPI in SC6 (802.11i replacement)
    - Currently in NP comment resolution
    - IEEE 802 focused on removing claims about 802.11i security
    - Reviewed proposals from US & Swiss NBs
    - Next CRM on 21 Nov
  - Review status of 802.1X/AE and 802.16 security replacements
    - No progress
    - IEEE 802 focused on incorrect claims about 802.1X/AE and 802.16
    - Unknown if NP proposals will be made at next SC6 meeting

JTC1 ad hoc focused on preparation for upcoming SC6 meetong

- **Progress in Atlanta (Nov 2011)**
  - Review status of N-UHT (802.11ac replacement)
    - Currently being considered as National Standards by MIIT
    - IEEE 802 focused on incorrect claims about 802.11n/ac and the threat to access to 5GHz spectrum in China
    - Unknown if NP proposal will be made at next SC6 meeting
  - Review plan for ISO/IEC 8802
    - Agreed to send IEEE 802 standards to ISO/IEC as long as IEEE 802 retains responsibility to maintain and extend
    - Letter in preparation for consideration by EC
  - Select delegation for SC6 meeting
    - Will have prep meeting next week
    - See motion

IEEE 802 members are encouraged to participate in their SC6 NBs

- **SC6 P-Members**
  - **Korea - KATS**
  - Spain – AENOR
  - France – AFNOR
  - **USA – ANSI**
  - **UK – BSI**
  - **Germany – DIN**
  - Greece – ELOT
  - Russia - GOST R
  - Luxemburg – ILNAS
  - Tunisia – INNORPI
  - **Japan - JISC**
  - Kazakhstan – KAZMEMST
  - Kenya – KEBS
  - Belgium - NBN
  - **Netherlands – NEN**
  - **China – SAC**
  - **Canada – SCC**
  - **Finland – SFS**
  - Switzerland – SNV
  - Czech Republic - UNMZ

JTC1 ad hoc will prepare for next SC6 meeting in Jacksonville

- **Plans for Jacksonville (Nov 2011)**
  - Review results of WAPI comments resolution meetings
  - Prepare for next SC6 meeting (Feb 2012 in China)
  - ...

In an email to the EC reflector, the chair (Nikolich) interpreted the intent of 9.3.e in the WG P&P for the MAR2012 election as follows:

If a WG/TAG chair or vice-chair has served 5 or more full or partial terms they shall obtain >75% approval of the WG/TAG at the NOV2011 plenary session in order to stand for election in MAR2012.

The chairs of 802.1, 802.15 and 802.16 (Jeffree, Heile and Marks, respectively), needed to get approval from their WGs to stand for election in MAR2012. The results from the elections were sent to the recording secretary and are listed below as the result of information items on the consent agenda.

9.03 II* Notification that 802.15 voted 68/0/1 to allow Heile to be a WG chair candidate **Heile** **0**

Notification as part of the consent agenda.

9.04 II* Notification that 802.1 voted 36/0/0 to allow Jeffree to be a WG chair candidate **Jeffree** **0**

Notification as part of the consent agenda.

9.05 II* Notification that 802.16 voted 32/0/0 to allow Marks to stand for reelection **Marks** **0**

Notification as part of the consent agenda.

9.06 II Regulatory report **Lynch** **10** **05:25 PM**

Lynch said that they did a defense of the 900 MHz band. Also had a discussion with 802.19.1 regarding multiband operation.

9.07 II Charles Steinmetz award **Heile/Thompson** **5** **05:26 PM**

Thompson said that he has been on the Steinmetz award committee. Heile has been appointed to the board and is overlapping for a year with Thompson.

The sponsor of the Steinmetz award is the IEEE SA.

Thompson would encourage people to take a look at the award page and consider nominating someone. The award nomination deadline is the 31 of January. Neither Heile nor Thompson can nominate, but they can help steer anyone through the process.

Grow said that BoG members cannot nominate either. However, even if someone is not appropriate for Steinmetz award, there are still standards medallions that can be awarded.

Marks has nominated a successful award recipient in the past and thought it was a process that was easy to navigate.

Thompson encouraged people to look through the award space to see if there is an award appropriate for volunteers.

9.08 II Executive secretary report **Rosdahl** **5** **05:33 PM**

Rosdahl presented ec-11-0025-02, slide 8

Marks asked what is a Sponsor Registration Database.

Rosdahl said that it is what we use when we register for a meeting (i.e., IMAT).

Thaler is worried that the attendance is not registering people who participate, but don't attend 75%.

Rosdahl said that groups could slice meetings into smaller blocks and have the attendees register.

Thaler said that the appropriate thing is to have an option in which a person registers participation but not attendance.

Nikolich recommends that Thaler put in a request for the capability.

Law supports what Thaler is requesting, they use paper in the room for people to record participation.

Thompson said that Thaler has made a request and that Rosdahl gave push back.

Rosdahl said that he put it down but that he does not understand the difference between participation and attendance.

Nikolich said that this should be a discussion outside of the EC meeting.

Marks said that there is a problem with the Sponsor Registration Database. Previously he could log in and project attendance, but it is gone.

Rosdahl said that the interface was updated and this feature was removed. It is going to be added back in. He asked that requests come in via email.

9.08 - Executive Secretary report

- **Job description report:**
  - **Oversee the Meeting Manager and assist in LMSC sponsored activities and services.**
    - Have worked with Buzz and assisted in meeting logistics and services contract reviews.
  - **Test, Evaluate and explore tools, methods and means to improve the efficiency of LMSC meetings**.
    - Logistic improvements
      - Ongoing discussion with service providers
      - Monthly coordination sessions with IEEE-SA staff
        - Review/Prioritize 802 E-Tools Ticket items
    - Technology can solve some but not all problems.
  - **Oversee maintenance of Sponsor Registration Database.**
    - No reported problems.

9.09 II 802 EC November 2011 Workshop logistics Kraemer 10 05:25 PM

Kraemer said that the main documents are posted on mentor as documents 16 and 17. The room is in LL2 in the International tower.

9.10 II Appeals report Gilb 1 5:50 PM

There are no appeals to report.

9.11 II Network Services report Alfvin 5 5:52 PM

Alfvin gave a verbal report on network services.

Law asked if the information in the Network Services report can be used by the WG.

Alfvin said it was OK if the EC said it was OK.

Nikolich asked there were any objections to allowing the bandwidth assessment ad-hoc to use the data.

No objections were heard.

10.00 ADJOURN SEC MEETING Nikolich 06:00 PM

Meeting adjourned at 5:56 pm

Respectfully submitted
James Gilb
IEEE 802 LMSC Recording Secretary