**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |
| --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title |  |
| Date Submitted | [9 November 2017] |
| Source | [][][Chicago, IL] | Voice: [+1.847.960.3715]Fax: [+1.847.790.3805]E-mail: [pat.kinney@ieee.org] |
| Re: | [802.15 Plenary Meeting in Orlando, Florida] |
| Abstract | [IEEE 802.15 Working Group Minutes] |
| Purpose | [Official minutes of the Working Group Session] |
| Notice | This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15. |

**111th IEEE 802.15 WSN SESSION**

**Caribe Hotel and Convention Center**

**Orland, Florida**

**November 6-9, 2017**

**Monday, 6 November 2017**

**10:40 AM** The chair, Bob Heile, called the meeting to order (15-17-0607-03)

The chairasked for new attendees to raise their hands; there were none.

Announcements:

* Social is an informal get together near pool deck
* Don’t forget to register for Irvine, CA

Chair informed the group of, and displayed the IEEE-SA patent policy presentation slides 0-5 (<http://standards.ieee.org/board/pat/pat-slideset.ppt>).

Chair asked the participants who wished to declare a Letter of Assurance (LoA) or to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for any of the ongoing activities within the 802.15 WG. There were no attendant responses to this call.

Chair displayed and read the standard IEEE Anti-Trust statement.

Ben Rolfe moved to *approve the agenda (document 15-17-0607-02-0000)* with Thomas Kürner seconding the motion. Following no objection, the agenda was approved.

Jay Holcomb moved *to approve the previous meeting minutes (document 15-17-0511-00-0000)* and Ben Rolfe seconded the motion. Following neither discussion nor objection the minutes were approved. There were no matters resulting from the previous minutes.

Future Sessions

* January 14-19, 2018 Hotel Irvine, Irvine, California USA, *802 Wireless Interim Session.*\*
* March 4-9, 2018, Hyatt Regency O’Hare, Rosemont, Illinois, USA, *802 Plenary Session.*
* May 6-11, 2018, Warsaw Marriott, Warsaw, Poland, *802 Wireless Interim Session.\**
* July 8-13, 2018, Manchester Grand Hyatt, San Diego, CA, USA, *802 Plenary Session.*
* September 9-14,  2018, Hilton Waikoloa Village, Kona, HI, USA, *802 Wireless Interim Session.*\*
* November 11-16, 2018, Marriott Marquis Bangkok, *802 Plenary Session.*

Affiliation Presentation by Jonathan Goldberg ([EC 17-0171-04](https://mentor.ieee.org/802-ec/dcn/17/ec-17-0171-00-00EC-ieee-declaration-of-affiliation.pdf))

Q: what about multiple affiliations since IMAT only allows for one? R: J Goldberg will look into this issue.

Q: contributions to Mentor documents, shouldn’t affiliation be included? R: Yes, it should.

C: need to consistently apply affiliation rules across all of 802

B Heile presented a report on the EC meeting held just before this meeting (15-17-0609-00).

**Status Reports**

802.18 by Jay Holcomb

* FCC Mid-band spectrum NOI in Reply Comments
* New spectrum bill proposed (S.1682)
* Equipment Authorization rule changes now active
* FCC Technological Advisory Council on improving regulations
* Q: Tech advisory committee, what authority do they have? R: merely report back to FCC with information and experiences

802.15

Task Group 3d –100Gbps THz PHY

* Project Complete

Task Group 3f

* Seek WG and EC approval to submit to RevCom
* Submit to RevCom

Task Group 4s – Spectrum Resource Utilization (SRU)

* + SB comment resolutions and prepare for next recirculation
	+ Seek approval to submit to RevCom
	+ Submit to RevCom

Task Group 15.4-2015Cor1

* Sponsor Ballot comment resolution
* Seek WG and EC approval to submit to RevCom
* Submit to RevCom

Task Group 7m – Optical Wireless Communications (OWC)

* + - Finish up ballot-able draft
		- Seek WG approval to start Letter Ballot
		- Generate/Update Project Timeline

Task Group 8 – Peer Aware Communications

* + - Respond to RevCom Comments
		- Update Project Plan/Timeline

Task Group 12 –Upper Layer Interface (ULI)

* + - Review and discuss operation
		- Start work on ballot-able draft
		- Update Project Plan/Timeline

Task Group 13 –Multi Gigabit/sec OWC

* + - Work on ballot-able draft
		- Update Project Plan/Timeline

Interest Group Dependability

* + Discuss Contributions
	+ Hold tutorial at 802.15 WNG session
	+ Evaluate if Study Group is warranted

Interest Group LPWA

* + - Review and Discuss Contributions
		- Review/update timeline

Interest Group VAT

* Discuss opportunities for OWC standards work

THz Interest Group:

* + - Ongoing review of THz technology advancements

OFDM IG:

* + - Discuss opportunities for Standards Work as part of 802.15.4

Standing Committees (SCm, SC IETF, SCwng)

* + Maintenance contributions for standards and operation manual
	+ IETF100 agenda items for 6tisch, 6lo, core, roll, and lp-wan, Ace, t2trg
	+ WNG- Three presentations – inclusion of AES-256 into IEEE 802.15.4, enhance 802.15.4 UWB RFID PHYs to add bi-directional capability, Low Power Wide Area Network SG formation

Motions to Withdraw Standards by B Heile

* Motion: *that the WG request approval from the 802 EC to initiate withdrawal of 802.15.1 current version*
* Moved by Pat Kinney, seconded by Ben Rolfe
* Upon no discussion the vote was taken with the results of 21/0/0, motion carries
* Motion: *that the WG request approval from the 802 EC to initiate withdrawal of 802.15.2 current version*
* Moved by Pat Kinney, seconded by Ben Rolfe
* Upon no discussion the vote was taken with the results of 21/0/0, motion carries

**11:54 PM** The chair recessed the meeting

**Wednesday, 8 November 2017**

**10:30** Bob Heile, WG chair called the meeting to order.

WG Chair made announcements concerning social, logistics, and registration for Irvine.

**10:35** 802.18 Tag liaison by J Holcomb

* Got through all “Americas” discussion points
* FCC NOI discussion: ad hoc has been formed to reach consensus between 802.11 and 802.15

**10:36** TG 3f by B Rolfe

* RevCom package will be done today

**10:37** TG4s closing report by Shoichi Kitazawa (15-17-0625-01)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the SB balloting of the P802.15.4s-D07 with the following membership: Shoichi Kitazawa, Hidetoshi Yokota, Ben Rolfe and James Gilb. The 802.15.4s BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the revised draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P*

Moved by Shoichi and seconded by J Gilb

Motion: that *802.15 WG has reviewed and approves the CSD [15-14-0175-05-0sru] and requests unconditional approval from the EC to submit P802.15.4s-D07 to RevCom.*

unconditional

Moved by S Kitazawa seconded by J Gilb

Upon no discussion the vote was taken with the result of 22/0/0, the motion carries

**10:40** TG4md by B Heile

* Resolution to send roll-up document to various groups has not been completed

**10:56** TG7m closing report by Yeong Min Jang (15-17-0634-00)

Motion*: that 802.15 WG start a WG Letter Ballot requesting approval of CA document 15-17-627r0 and document P802-15-7m\_D06 (as edited in accordance with the instructions in document 15-17-0597-r3-007a) and to forward document P802-15-7m\_D06, as edited in accordance with the instructions in document 15-17-0597-r3-007a, and CA document 15-17-627r0 to Sponsor Ballot pending the completion and inclusion of the edits in the draft. The 802.15 WG affirms the contents of the 5C in document 15-14-0216-05.*

Moved by Yeong Min Jang, seconded by Volker Jungnickel

Upon neither discussion nor opposition the motion carries

Motion*: that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.7m-D06 with the following membership: Yeong Min Jang, Rick Roberts, Hideki Aoyama, Soo-Young Chang, Jaesang Cha, and Van Trang Nguyen. The 802.15.7m BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the revised draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P*

Moved by Yeong Min Jang seconded by B Rolfe

Upon neither discussion nor opposition the motion carries

**10:55** IG VAT closing report by Yeong Min Jang (15-17-0645-00)

**10:57** TG8 closing report by (15-17-0621-00) by Marco Hernandez

Motion*: that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the draft P802.15.8-D6.0 submitted to the RevCom with the following membership: Myung Lee (chair), Huan-bang Li, Marco Hernandez, Billy Verso, and Seong-Soon Joo. The 802.15.8 BRC is authorized to approve comment resolutions on behalf of the 802.15 WG. Comment resolution between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P*

Moved By: Marco Hernandez

Seconded By: Billy Verso

Upon neither discussion nor opposition the motion carries

**11:04** TG13 by Volker Jungnickel

* Draft d1 editing is underway

**11:07** IG Dependability closing report (15-17-0629-01) by R Kohno

**11:10** IG LPWA by Jörg Robert

* Discussed feedback from ETSI

**11:11** IG THzclosing report by T Kürner (15-17-0590-00)

**11:12** IG FANE by M Gilmore

* Moving to a SG

**11:13** SG10a by B Heile

* Resolving PAR and CSD comments

**11:15** TG 15.12 ULI by P Kinney

* Working on the methods of sending frames through ULI and multiplexing mechanisms

**11:00** SC reports by P Kinney

* SC Maintenance; resolved all 30 comments and approved the resolutions
* SC IETF: reviewed 6tisch, 6lo, core, roll, Ace, T2TRG, and lp-wan
* SC WNG: three presentations:
	+ Inclusion of AES-256 into IEEE 802.15.4
	+ Enhance 802.15.4 UWB RFID PHYs to add bi-directional capability
	+ Low Power Wide Area Network SG formation

AoB

* FCC NOI by B Heile
	+ Notice of Inquiry by FCC to allow additional license exempt users in the 6 – 7 GHz band now used by UWB,
	+ It is note worthy that the above band is the only UWB band allowed globally

Motion*: to approve document 15-17-543-02 as the position of the 802.15 WG*. *The 802.15 working group chair and technical editor are authorized to make additional modifications to the document as needed to reflect EC discussion at its closing meeting.*

* + Moved by James Gilb and seconded by Billy Verso
	+ Comments were made that emphasized the importance of this motion.
	+ The vote was taken with the results of 17/0/3, motion carries
* JTC1 update by J Gilb (15-17-0644-00)
	+ PSDO concerns for 802.15

**11:38** WG chair recessed the meeting until Thursday evening.

**Thursday, 9 Nov 2017**

**18:39** WG chair called the meeting to order

**18:41** TG 3f closing report by B Rolfe (15-17-616-00)

P802.15.3f-D01RevCom Motion

Motion: *that 802.15 WG has reviewed and affirms the CSD 15-17-0049-01-0000 and requests unconditional approval from the EC to submit P802.15.3f-D01 to RevCom*

Moved by B Rolfe, seconded by Tim Harrington

Upon no further discussion the vote was taken with the results of 19/0/2, the motion carries.

P802.15.3f-D01BRC Motion

Motion: *that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor Balloting of the P802.15.3f\_D01 with the following membership: Benjamin Rolfe (Chair), Rick Alfvin and Clint Powell. The 802.15.3f BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the revised draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P.*
Moved by: Ben Rolfe, seconded by James Gilb

Upon neither discussion nor objection, the motion carries with unanimous consent.

**18:48** TG8 byMarco Hernandez

*Motion: that 802.15 WG has reviewed and approves the CSD [15-12-0158-00-0] and requests unconditional approval from the EC to submit P802.15.8 – D6 to RevCom.*

Moved by Marco Hernandez, seconded by Ben Rolfe

Upon no further discussion the vote was taken with the results of 18/0/2, the motion carries.

**18:50** TG13 closing report by Volker Jungnickel (15-17-0661-00)

**18:54** IG LPWA closing report by Jörg Robert (15-17-0657-00)

Motion: *that the 802.15 Working Group seeks approval from the 802 EC to form a study group in 802.15 to develop the PAR and CSD documents for “Low Power Wide Area (LPWA)” and additionally authorize the 802.15 WG Chair to make any necessary changes to these docs required to support the submission.*

Move: Jörg Robert; Second: Volker Jungnickel

Upon no further discussion the vote was taken with the results of 15 / 2 / 3, the motion carries.

**18:58** IG FANE closing report by Matt Gillmore (15-17-0659-00)

**19:00** SG10a by Bob Heile (15-17-649-00)

C: instead of “standard” use “recommended practice”

Motion: *WG Motion: request that the PAR and CSD contained in documents*[*https://mentor.ieee.org/802.15/dcn/17/15-17-0565-01-0000-802-15-10a-par.pdf*](https://mentor.ieee.org/802.15/dcn/17/15-17-0565-01-0000-802-15-10a-par.pdf)*and*[*https://mentor.ieee.org/802.15/dcn/17/15-17-0566-01-0000-802-15-10a-csd.docx*](https://mentor.ieee.org/802.15/dcn/17/15-17-0566-01-0000-802-15-10a-csd.docx)*, respectively, be approved by the IEEE 802.15 WG and that the EC be requested to forward the PAR to NesCom. The 802.15 working group chair and technical editor are authorized to make additional modifications to the PAR and CSD as needed to reflect EC discussion at its closing meeting*.

Moved by James Gilb, seconded by Tim Harrington

Upon no discussion the vote was taken with the results of 21/0/0, motion carries

**19:11** TG 12 (ULI) closing report by P Kinney (15-17-0610-01)

**19:15** Standing Committee closing report by P Kinney (15-17-0623-01)

15.4-2015 Cor1 RevCom Motion

Motion: *that 802.15 WG requests conditional approval from the EC to submit d3P802.15.4-2015-Corri-1-2017 (or current revision) to RevCom.*

Moved by Pat Kinney, seconded by Ben Rolfe

Upon no further discussion the vote was taken with the results of 19/0/0, the motion carries.

15.4-2015 Cor1 BRC Motion

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the d2P802.15.4-2015-Corri-1-2017 or current version with the following membership: Pat Kinney (Chair), Billy Verso, Ben Rolfe, and Jay Holcomb. The 802.15.4 BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the revised draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P.*

Moved by: P Kinney, seconded by: James Gilb

Upon neither discussion nor objection, the motion carries with unanimous consent.

**19:21** SECN closing report by Don Sturek

Motion: *that the 802.15 Working Group seeks approval from the 802 EC to form a study group in 802.15 to develop the PAR and CSD documents for “Security Next Generation” (SECN) and additionally authorize the 802.15 WG Chair to make any necessary changes to these docs required to support the submission.*

WG vote

* + Moved: Don Sturek, Seconded: Ben Rolfe
	+ Upon no discussion the vote was taken with the results of 20/0/1, motion carries

**19:27** 802.11 liaison report by A Petrick (15-17-0648-00)

**19:37** 802.18 liaison report by J Holcomb (15-17-0636-00)

**19:42** 802.24 liaison by T Godfrey

* Smart grid TG:
	+ waiting for clarifications from 802.11
	+ Working on TSN whitepaper
* IoT
	+ P2413 white paper was presented

**AoB**

* FCC NOI:
	+ 802.15 is taking a position that 802.11 must demonstrate its coexistence with UWB before it will concur with 802.11’s position
	+ expected that each group, i.e. 802.11 and 802.15 will file its own position to the FCC
	+ 802.15 position paper is doc 15-17-0660-00 to be submitted to the FCC
		- Q: limit to seeing proof with 802.11 and no others? R: FCC would mandate etiquette as part of its NPRM

Motion: *Move that the WG request approval from the EC to forward the IEEE 802.15 Working Group Reply Comments to FCC 17-183, November 2017 and contained in DCN 15-17-0660-01-0000\_802.15 FCC NOI Reply Comments\_2017-11-09, to the FCC. The 802.15 working group chair is authorized to make additional modifications to the document as needed to reflect EC discussion at its closing meeting.*

* + - Moved by James Gilb and seconded by Tim Harrington
		- Upon no discussion the vote was taken with the results of 16/0/3, motion carries

**19:44** Motion *to adjourn* was made by James Gilb, seconded by Ben Rolfe. Upon hearing no objection, the motion carries; the session is adjourned.

**Annex A** Attendance = 53

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |

|  |  |  |
| --- | --- | --- |
| Last Name | First Name | Affiliation |
| Aoyama | Hideki | Panasonic Corporation |
| Bims | Harry | Bims Laboratories, Inc. |
| Calvert | Chris | Landis Gyr Group Worldwide |
| Chang | Soo-Young | California State University, Sacramento (CSUS) |
| De Ruijter | Hendricus | Silicon Laboratories |
| Gilb | James | Gilb Consulting, Inc. |
| Gillmore | Matthew | Itron Inc. |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Guo | Jianlin | Mitsubishi Electric Corporation |
| Hara | Shinsuke | Osaka City University (OCU) |
| Harrington | Timothy | Pro-ID |
| Heile | Robert | Wi-SUN Alliance |
| Hett | Christopher | Landis Gyr Group Worldwide |
| Hirota | Tomoyuki | Panasonic Corporation |
| Holcomb | Jay | Itron Inc. |
| HOSAKO | IWAO | National Institute of Information and Communications Technology (NICT) |
| Jang | Yeong Min | Kookmin University |
| JOO | SEONG-SOON | Electronics and Telecommunications Research Institute (ETRI) |
| Jornet | Josep Miquel | University at Buffalo |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Khalid | Ihtisham |  |
| KINNEY | PATRICK | Kinney Consulting LLC |
| Kitazawa | Shoichi | Muroran IT |
| Kohno | Ryuji | YNU/CWC-Nippon |
| Krieger | Ann | US Department of Defense |
| Kuerner | Thomas | TU Braunschweig |
| Lee | Jae Seung | Electronics and Telecommunications Research Institute (ETRI) |
| LEE | MINWOO | SNUT |
| Lee | Sanghoon | Electronics and Telecommunications Research Institute (ETRI) |
| Lee | Sunghee | Electronics and Telecommunications Research Institute (ETRI) |
| Li | Qiang | HUAWEI |
| Lim | Sang-Kyu | Electronics and Telecommunications Research Institute (ETRI) |
| MARIAPPAN | VINAYAGAM | SNUT |
| Mennecke | Ryan | Johns Hopkins University Applied Physics Lab |
| Nagai | Yukimasa | Mitsubishi Electric Corporation |
| Nguyen | Trang | Kookmin University |
| Noshad | Mohammad | VLNComm |
| Orlik | Philip | Mitsubishi Electric Corporation |
| Polland | Joe | CommScope, Inc. |
| Robert | Joerg | University of Erlangen-Nuremberg |
| Rolfe | Benjamin | Blind Creek Associates |
| Sakata | Ren | TOSHIBA Corporation |
| Salazar Cardozo | Ruben E | Landis Gyr Group Worldwide |
| Sarikaya | Behcet | DenPelInformatique |
| Sato | Noriyuki | Oki Electric Industry Co., Ltd. |
| Sturek | Don | Silver Spring Networks Inc. |
| Sumi | Takenori | Mitsubishi Electric Corporation |
| Verso | Billy | DecaWave |
| Vu | Luan | Kookmin University |
| Wang | Hao | Fujitsu Research & Development Center |
| Wang | Xu | VLNComm |
| Yi | Su | Fujitsu Research & Development Center |
| Yokota | Hidetoshi | Landis Gyr Group Worldwide |