**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **<IEEE802.15 WG minutes>** | |
| Date Submitted | [19 Jan 2017] | |
| Source | [Pat Kinney] [<Kinney Consulting LLC>] [Chicago, IL] | Voice: [+1.847.960.3715] Fax: [+1.847.790.3805] E-mail: [pat.kinney@ieee.org] |
| Re: | [802.15 Interim Meeting in Atlanta, GA, USA] | |
| 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. | |
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**IEEE 802.15 Interim Meeting – #104 Joint Opening Plenary**

**Grand Hyatt Buckhead**

**Atlanta, GA, USA**

**Jan 16 - 19, 2017**

**Monday, 16 Jan 2017**

**8:07** 802.11, 802.15, 802.16, 802.18, 802.19, 802.21, 802.22, and 802.24 Chairs called the joint meeting to order. IEEE 802.15 attendance is included as Annex A.

General announcements:

* No photography, no audio recording
* Social – Reception on Wednesday 18:00 – 20:30
* Don’t forget, book your room and register for March’s session

Straw Poll of new attendees: 7

**8:10**  IEEE patent policy

802.15 WG chair read the IEEE-SA instructions and displayed the four slides explaining patent policy and informed the attendees that additional information could be found on the PatCom web site: ([**http://standards.ieee.org/board/pat/pat-slideset.ppt**](http://standards.ieee.org/board/pat/pat-slideset.ppt)**)**.

802.15 WG chair read IEEE anti-trust policy.

**8:14** Financial report by J Rosdahl (Qualcomm) docs [11-16-01596-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1596-00-0000-),   
[15-17-0032-00](https://mentor.ieee.org/802.15/dcn/17/15-17-0032-00-0000-treasurer-report-january-2017-atlanta.pptx)

Total liabilities and equity $ 565,307.44

**8:19** Wireless and IMAT announcements, 15-17-0043-00, by R Alfvin (Linespeed)

**8:22** WG15 Chair informed the group that the Wireless Chairs Standing Committee (WCSC) met yesterday, Sunday at 16:00 local time. Chair noted that this is an open meeting, all are encouraged to attend. Minutes are available at [ec-17-0003-00-WCSG](https://mentor.ieee.org/802-ec/dcn/17/ec-17-0003-00-WCSG-802-wireless-chairs-minutes-2017-january-atlanta.docx)

**8:23** Review future sessions (document # [15-16-0857-04](https://mentor.ieee.org/802.15/dcn/16/15-16-0857-04-0000-802-15-atl-2017-graphic-agenda.xlsx))

* **March 12-17, 2017, Hyatt Regency Vancouver,** *802 Plenary Session.*
* **May 7-12, 2017, Daejeon Convention Center, Daejeon, Korea (TBC),***802 Wireless Interim Session.*
* **July 9-14, 2017, Estrel Hotel and Convention Center, Berlin, Germany,** 802 Plenary Session**.**
* **September 10-15, 2017, Hilton Waikoloa Village, Kona, HI, USA,** 802 Wireless Interim Session.\*
* **November 5-10, 2017, Caribe Hotel and Convention Center, Orlando, FL, USA,** 802 Plenary Session
* **January 14-19, 2018, Hotel Irvine, Irvine, California, 802 Wireless Interim Session.\***
* **March 4-9, 2018, Hyatt Regency O'Hare, Rosemont, IL, USA,** 802 Plenary Session
* **May, 2018, EMEA destination,** 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.\*

**8:27 Working Group Updates**

802.11 by Adrian Stephens (Intel), (document [11-16-1561-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1561-00-0000))

* 359 voters

802.15 by B Heile (document [15-16-0857-04](https://mentor.ieee.org/802.15/dcn/16/15-16-0857-04-0000-802-15-atl-2017-graphic-agenda.xlsx))

* 94 voters
* TG3d: 100G
* TG3e: HRCP (High Rate Close Proximity)
* TG4s: SRU (Spectrum Resource Utilization)
* TG4t: High(er) rate amendment
* TG4u: India 865 Band Phy (IBP) amendment
* TG4v: Regional Sub-GHz Bands adds and updates
* TG 7m: Optical Wireless Communications
* TG8: PAC (Peer Aware Communications)
* TG10: L2R (Layer 2 Routing)
* TG12 Upper Layer Interface (ULI) for 802.15.4
* SC IETF
* IG VOC (Vehicular Optical Communications)
* IG LPWA (low power wide area)

802.18 by J Holcomb

* ETSI BRAN and ERM TG11 updates
* CEPT CPG PT-D
* EU Radio Equipment Directive Status
* ACMA Consultations
* Developing IEEE 802 positions for WRC-19

802.19 T Baykas ([19-17-0003-02-0000](https://mentor.ieee.org/802.19/dcn/17/19-17-0003-02-0000-jan-2017-opening-report.pptx))

* 3GPP Liaison - will discuss reports

802.21 S Das

* 21 voting members

802.24 Tim Godfrey ([24-17-0002-00-0000](https://mentor.ieee.org/802.24/dcn/17/24-17-0002-00-0000-january-2017-meeting-presentation.pptx))

* Task Groups
  + 802.24.1 Smart Grid TG
  + 802.24.2 IoT TG Chris DiMinico

**AoB**

**8:42** Joint meeting adjourned

**Working group opening plenary (106th session of 802.15)**

**9:04** B Heile (WiSUN Alliance), WG chair called the 802.15 WG plenary to order (15-16-0857-05)

Chair reminded attendees that highlights of the IEEE-SA Standards Board Bylaws on Patents in Standards. Chair referred those who wished to review these policies that the IEEE-SA patent policy presentation slides 1-5 and reading the instructions for the WG Chair. (<http://standards.ieee.org/board/pat/pat-slideset.ppt>).

Chair asked participants 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 the use of that standard:

* There were no responses

Chair reminded participants of IEEE anti-trust rules and obligations.

Approve/modify joint opening agenda (15-16-0857-05)

* Moved by G Stuebing, seconded by J Holcomb. Following neither discussion nor objection the agenda was approved.

Review and approve 802.15 WG minutes from the San Antonio session (15-16-0782-00-0000)

* Moved by T Godfrey, seconded by B Rolfe. Upon neither discussion nor objection the joint minutes were approved.

**9:12** WG recessed

**Wednesday 18 Jan 2017**

**802.15 mid-session plenary meeting**

**10:32** Bob Heile called the meeting to order.

**802.18 liaison** by Jay Holcomb

* Discussed:
* ETSI updates, plan for 5G to keep product shipping
* CEPT CPG PT-D
* EU Radio Equipment Directive Status
* ACMA Consultations
* Developing IEEE 802 positions for WRC-19

**TG3d** by Thomas Kürner

* Working on draft

**IG THz** closing report by Thomas Kürner (15-17-0054-00)

**TG3e** closing report by Andrew Estrada (15-17-0056-00)

*Motion that 802.15.3e WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of P802.15.3e-D07 (or current revision) with the following membership: Andrew Estrada (Chair), Ko Togashi, Itaru Maekawa, Jae Seung Lee, Keitarou Kondou, Keiji Akiyama, and Ken Hiraga. The 802.15.3e 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 A Estrada, seconded by T Kürner

Upon neither discussion nor opposition the motion carries.

**TG4s** by S Kitazawa

* Working on comment resolutions

**TG4t** by C Powell

* Haven’t met yet

**TG4v** by Phil Beecher

* Almost all comments have been resolved

**TG7m** by Yeong Min

* Working on comment resolutions
* Group plans to split into two TGs by creating a new PAR and CSD to define a Multi-Gigabit OWC.

**IG VAT** by Yeong Min

* Overview presented

**TG8 (PAC)** by Myung Lee (CUNY)

* Working comment resolutions

**IG LPWA** by J Robert (15-17-0066-00)

**TG12 ULI** by P Kinney

* Moving into the mechanics and detail of the ULI

**SC IETF** by P Kinney

* IETF WG status was described for those WGs requested by attendees focused on 802.15.4. Chair made request to TGs other than 802.15.4 to review IETF to identify WGs of interest to them.

**SC WNG** by P Kinney

* + There will be no meeting since there has been no presentation request

**AoB**

* + **TG3f** by Ben Rolfe

*Request that the PAR and CSD contained in documents [15-17-0055-00-0000] and [15-17-0049-00-0000] 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 B Rolfe

Seconded by C Powell

Upon no further discussion the motion was voted upon with the results of 28/0/0, motion carries

**11:11** Recessed until Thursday at 18:30

**Thursday, 19 Jan 2017**

**18:30** 802.15 WG chair called the meeting to order

**18:31** TG3d(100G) closing report by Thomas Kürner (15-17-0077-00)

*Move that 802.15 WG start a WG Letter Ballot requesting approval to forward document P802-15-3d\_D01.pdf and CA document 15-17-0004-03-003d-coexistence-assurance.doc to Sponsor Ballot.*

Moved By Thomas Kürner, Seconded By Clint Powell

Upon neither discussion nor objection the motion carries with unanimous consent

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.3d\_D01 and P802.15.3e\_D03 with the following membership: Thomas Kürner (Chair), Iwao Hosako, Monique Brown and Ken Hiraga. The 802.15.3d 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 Thomas Kürner, Seconded By Clint Powell

Upon neither discussion nor objection the motion carries with unanimous consent

**18:34** TG4s (SRU) closing report by S Kitazawa (15-17-0071-00)

*Move that 802.15 WG start a WG Letter Ballot requesting approval of CA document (15-16-0536-01-004s) and document P802-15-4s\_D02 (as edited in accordance with the instructions in document 15-16-0596-13-802-15-4s-letter-ballot-consolidated-comments.xlsx) and to forward document P802-15-4s\_D02, as edited in accordance with the instructions in document 15-16-0596-13-802-15-4s-letter-ballot-consolidated-comments.xlsx, and CA document (15-16-0536-01-004s) to Sponsor Ballot pending the completion and inclusion of the edits in the draft.*

Moved By: Shoichi Kitazawa, Seconded By: Ben Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.4s-D02 with the following membership: Shoichi Kitazawa, Hidetoshi Yokota, and Shusaku Shimada. The 802.15 TG4s 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 Kitazawa, Seconded By: Yeong-Minh Jang

Upon neither discussion nor objection the motion carries with unanimous consent

**18:38** TG4t closing reportby C Powell (15-17-0074-01)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor Balloting of the P802.15.4t/D04 with the following membership: Clint Powell, Henk de Ruijter, Monique Brown, Ed Callaway. The 802.15 TG4t BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of P802.15.4t/D06 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: Clint Powell, Seconded By: Ben Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

**18:41** TG10 (L2R) closing report by C Powell (15-17-0073-00)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor Balloting of the TG10 draft recommended practice with the following membership: Clint Powell, Verotiana Rabarijaona, Fumihide Kojima, Noriyuki Sato, Kiyoshi Fukui, Soo-Young Chang, Jaehwan Kim, SangSung Choi, Charlie Perkins. The 802.15 TG10 BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the TG10 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: Clint Powell, Seconded By: Ben Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

**18:43** TG4v closing reportby P Beecher (15-17-0034-01)

*Move that the 802.15 WG start a WG Recirculation Sponsor Ballot requesting approval to forward document P802.15.4v-D05 (or latest) to RevCom*

Moved: Phil Beecher, Second: Kunal Shah

Upon neither discussion nor objection the motion carries with unanimous consent

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor ballot recirculation of the P802.15.4v-D4 with the following membership: Phil Beecher (Chair), Kunal Shah, Chris Calvert, Clint Powell, Jay Holcomb and Gary Stuebing. The 802.15.4v 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: Phil Beecher, Seconded by: K Shah

Upon neither discussion nor objection the motion carries with unanimous consent

**18:46** TG7.1 (OWC) closing report by Yeong Min Jang (15-17-0085-00)

**18:49** IG VAT by Yeong Min Jang (15-17-0084-00)

**18:54** Multi-Gigabit OWCby Bob Heile

*Request that the PAR and CSD contained in documents [15-17-0076-00-0000] and [15-17-0075-00-0000] 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 Yeong Min Jang, Seconded by C Powell

Upon no further discussion the motion was voted upon with the results of 24/1/0, motion carries

**19:03** TG8 (PAC) closing report by Huan-Bang Li (15-17-0059-02)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.8-D01 with the following membership: Myung Lee (chair), Huan-bang Li, BJ Kwak, Marco Hernandez, Billy Verso, and Seong-Soon Joo. The 802.15.8 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: Huan-Bang Li Seconded by Thomas Kürner

Upon neither discussion nor objection the motion carries with unanimous consent

**19:06** TG12 ULI closing report by Pat Kinney (15-17-0030-04)

**19:10** SCclosing report by Pat Kinney (15-17-0047-01)

**19:13** 802.11 liaison report by A Petrick (15-17-0079-00)

**19:19** 802.18 liaison report by J Holcomb (15-17-0057-00)

**19:25** 802.24 liaison by T Godfrey

* Reviewed first draft of IoT whitepaper
* Working on TSN for utilities/industry

**AoB**

**19:28** Motion *to adjourn* was made by C Powell, seconded by R Alfvin, upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 51

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| Alfvin | Richard | Linespeed Events, LLC |
| Aoyama | Hideki | Panasonic Corporation |
| Beecher | Philip E | Wi-SUN Alliance |
| Calvert | Chris | Landis Gyr Group Worldwide |
| Cha | Jaesang | SNUT |
| Chang | Soo-Young | California State University, Sacramento (CSUS) |
| De Ruijter | Hendricus | Silicon Laboratories |
| Estrada | Andrew | Sony Corporation |
| Gillmore | Matthew | Itron Inc. |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Hara | Shinsuke | Osaka City University (OCU) |
| Heile | Robert | Wi-SUN Alliance |
| Hernandez | Marco | National Institute of Information and Communications Technology (NICT) |
| Hett | Christopher | Landis Gyr Group Worldwide |
| Holcomb | Jay | Itron Inc. |
| Hosako | Iwao | National Institute of Information and Communications Technology (NICT) |
| Hovaizi | Fraidoon | VLNComm |
| Jang | Yeong Min | Kookmin University |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Kain | Carl | Noblis, Inc. |
| Kinney | Patrick | Kinney Consulting LLC |
| Kitazawa | Shoichi | Koden Techno Info /Muroran IT |
| Kuerner | Thomas | TU Braunschweig |
| Le | Namtuan | Kookmin University |
| Lee | Myung | CUNY - City University of NY |
| Lee | Sunghee | Electronics and Telecommunications Research Institute (ETRI) |
| Leicht | Suzanne | National Security Agency |
| Li | Qiang | HUAWEI |
| Lynch | Michael | Nortel Networks |
| Mano | Hiroshi | Koden Techno Info K.K. |
| Mariappan | Vinayagam | SNUT |
| Nguyen | Trang | Kookmin University |
| Oshima | Mitsuaki | Panasonic Corporation |
| Patil | Gaurav | VLNComm |
| Perkins | Charles | Futurewei Technologies |
| Polland | Joe | CommScope, Inc. |
| Powell | Clinton | Powell Wireless Consulting, LLC |
| Rakanovic | Demir | u-blox |
| Robert | Joerg | University of Erlangen-Nuremberg |
| Roberts | Richard | Intel Corporation |
| Rolfe | Benjamin | Blind Creek Associates |
| Sato | Noriyuki | Oki Electric Industry Co., Ltd. |
| Shin | Ilhong |  |
| Stuebing | Gary | Cisco Systems, Inc. |
| Sturek | Don | Silver Spring Networks Inc. |
| Verso | Billy | DecaWave |
| Wang | Hao | Fujitsu Research & Development Center |
| Wang | Xu | VLNComm |
| Wei | YuLin | National Taiwan University |
| Yi | Su | Fujitsu Research & Development Center |
| Yokota | Hidetoshi | Landis Gyr Group Worldwide |