**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 | [18 Jan 2019] |
| Source | [Pat Kinney][][Chicago, IL] | Voice: [+1.847.960.3715]Fax: [+1.847.790.3805]E-mail: [pat.kinney@ieee.org] |
| Re: | [802.15 Interim Meeting in St. Louis, MO, USA] |
| Abstract | [IEEE 802.15 Working Group Minutes] |
| Purpose | [Official minutes of the Working Group Session] |
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**118th IEEE 802.15 WSN MEETING**

**HILTON ST LOUIS BALLPARK**

**ST LOUIS, MISSOURI, USA**

**Jan 13-17, 2019**

**Monday, 14 Jan 2019**

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

B Heile (Wireless Communications Consulting) read the IEEE 802 Wireless Top 10 prepared by the meeting organizer for the attendees of this session.

General announcements:

* No photography, no audio recording
* Don’t forget, book your room and register for March’s session

Straw Poll of new attendees: 4

**8:15**  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: ([**https://standards.ieee.org/about/sasb/patcom/materials.html**](https://standards.ieee.org/about/sasb/patcom/materials.html)**)**.

802.15 WG chair read IEEE anti-trust policy. ([**http://standards.ieee.org/develop/policies/antitrust.pdf**](http://standards.ieee.org/develop/policies/antitrust.pdf))

**8:20** Financial report by J Rosdahl (Qualcomm) doc [ec-19-0001-02](https://mentor.ieee.org/802-ec/dcn/19/ec-19-0001-02-WCSG-wireless-treasurer-report-january-st-louis.pptx)

Total liabilities and equity $686,523.78 (not including this meeting)

The number of people who are currently registered at this meeting is 283

**8:24** Wireless and IMAT announcements by R Alfvin (Linespeed)

* Information can be found at [ieee802.linspeed.io](http://ieee802.linespeed.io/)

**8:27** 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 <https://mentor.ieee.org/802-ec/dcn/19/ec-19-0003-00-WCSG-st-louis-january-2019-minutes.docx>

**8:28** Review future sessions

* March 10-15, 2019, Hyatt Regency / Fairmont Hotel Vancouver, Vancouver, Canada
* May 12-17, 2019, Grand Hyatt Atlanta in Buckhead, Atlanta, Georgia, USA
* July 14-19, 2019, Austria Congress Centre, Vienna, Austria, 802 Plenary Session.
* September 15-20, 2019 - Marriott Hanoi, Hanoi, Vietnam (TBC)
* November 10-15, 2019, Hilton Waikoloa Village, Kona, HI, USA, 802 Plenary Session
* January 12-17, 2020, Hotel Irvine, Irvine, California, USA
* Future venues 2020 Lisbon Marriott, Budapest Marriott, Vienna Hilton, Athens Hilton, Sorrento Hilton, JW Bucharest.

**8:30 Working Group Updates**

802.11 by Dorothy Stanley (HPE), (document [11-18-2082-00](https://mentor.ieee.org/802.11/dcn/18/11-18-2082-00-0000-2019-january-working-group-chair-opening-report.pptx))

* voters: 330, Nearly 26, Aspirant 109

802.15 by B Heile (Wireless Communications Consulting)

* voters: 83, Nearly 8, Aspirant 19
* TG4md 15.4 revision
* TG 15.4w Low Power Wide Area (LPWA)
* TG 15.4x FAN enhancements (FANE)
* TG 15.4y Security Next Generation (SECN)
* TG 15.4z Enhanced impulse radio (EIR)
* TG 7m Optical Wireless Communications
* TG10a Routing Mode Addressing (RMA) amendment
* TG12 Upper Layer Interface (ULI) for 802.15.4
* TG13 Multi-Gigabit OWC

802.18 by J Holcomb (Itron) ([18-19-0005-00](https://mentor.ieee.org/802.18/dcn/19/18-19-0005-00-0000-agenda-stl-interim-15-17-jan-2019-rr-tag.pptx))

* voters: 41, Nearly 2, Aspirant 14
* EU Items
* EC Draft Law - Vehicle communications
* NTIA National Spectrum Strategy
* U.S. DoT RFC on V2X Communications
* ACMA consultation 5G & 60GHz band

802.19 S Shellhammer ([19-19-0002-01](https://mentor.ieee.org/802.19/dcn/19/19-19-0002-01-0000-january-2019-opening-report.pptx))

* 34 voters

802.21 Subir Das [(21-18-0005-00)](https://mentor.ieee.org/802.21/dcn/19/21-19-0005-00-SAUC-wireless-ec-joint-plenary-report.pptx)

* Study Group on Network Enablers for Seamless HMD based VR content Service

**AoB**

* R Marks (Huawei) – NENDICA activities
* meeting Tuesday evening

**8:49** Joint meeting adjourned

**Working group opening plenary (118th session of 802.15)** (37 attendees)

**9:30** B Heile, Wireless Communications Consulting, WG chair called the 802.15 WG plenary to order ([15-19-0011-01](https://mentor.ieee.org/802.15/dcn/18/15-19-0011-01-0000-802-15-waw-2018-graphic-agenda.xlsx))

Announcements:

* IEEE 802 Wireless Top 10
* Social is Wednesday
* Network and projectors are from LineSpeed
* There were 2 first time attendees

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. ([**https://standards.ieee.org/about/sasb/patcom/materials.html**](https://standards.ieee.org/about/sasb/patcom/materials.html)**)**.

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.

**Motion:** *Approve/modify joint opening agenda* ([15-19-0011-01](https://mentor.ieee.org/802.15/dcn/18/15-19-0011-01-0000-802-15-waw-2018-graphic-agenda.xlsx))

* Moved by R Alfvin (Linespeed)
* Seconded by G Stuebing (Cisco Systems)
* Following neither discussion nor objection the agenda was approved.

**Motion:** *Review and approve 802.15 WG minutes from the November session* ([15-18-0539-00-0000](https://mentor.ieee.org/802.15/dcn/18/15-18-0539-00-0000-minutes-from-bangkok-nov-2018.docx))

* Moved by T Harrington (Pro ID)
* Seconded by B Rolfe (Blind Creek)
* Upon neither discussion nor objection the WG minutes were approved.

**9:36** Network and attendance information by R Alfvin (Linespeed) ([http://ieee802.linespeed.io/)](http://ieee802.linespeed.io/%29)

**9:39** Treasury report by Ben Rolfe (Blind Creek) ([ec-19-0001-02](https://mentor.ieee.org/802-ec/dcn/19/ec-19-0001-02-WCSG-wireless-treasurer-report-january-st-louis.pptx))

**9:42** 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 <https://mentor.ieee.org/802-ec/dcn/19/ec-19-0003-00-WCSG-st-louis-january-2019-minutes.docx>

**9:45** WG recessed

**Wednesday 16 Jan 2019**

**802.15 mid-session plenary meeting**

**10:30** Bob Heile (Wireless Communications Consulting) called the meeting to order.

Announcements:

* Please don’t use 802.15 as your affiliation
* Reminder to book your room and register for the March plenary

**802.18 liaison** by Jay Holcomb (Itron)

* Discussed:
	+ Discussed ETSI status, maybe eliminating some of the receiver requirements if they don’t apply to a specific device
	+ US DOT discussion

**TG4md (revision)** by G Stuebing (Cisco Systems)

* Resolving comments

**TG 15.4w** (lpwan)by Jörg Robert (University of Erlangen-Nuremberg)

* drafting standard and coexistence document

**TG 15.4x (FANE)** closing reportby M Gillmore (Itron) (15-19-0049-02)

* + - *Move that 802.15 WG approve the formation of a Comment Resolution Group (CRG) for the Standards Association Balloting of P802.15.4x-D2 with the following membership: Matt Gillmore, Kunal Shah, Chris Calvert, Ruben Salazar, Phil Beecher, Gary Stuebing. The 802.15.4x CRG 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: Matt Gillmore (Itron)
		- Seconded By: Ben Rolfe (Blind Creek)

Upon neither discussion nor objection the motion carries with unanimous support.

**TG 15.4y (SEC)** closing reportby D Sturek (Itron) (15-19-0031-00)

**IG Profile** closing report by Don Sturek (Itron) (15-19-0030-00)

**TG 15.4z (EIR)** by T Harrington (Pro ID)

* Drafting the standard
* Continued discussions on coexistence with 802.11ax

**IG VAT** by Yeong Min Jang (Kookmin)

* Discussions on using OCC

**TG10a** closing reportby J Robert(University of Erlangen-Nuremberg) (15-19-0038-00)

* + - *Move that 802.15 WG approve the formation of a Comment Resolution Group (CRG) for the Standards Association balloting of the P802.15.10a-D03-2018-r1, or latest draft, with the following membership: Kiyoshi Fukui, Jörg Robert, Clint Powell, Tero Kivinen, and Charlie Perkins (as chair). The 802.15.10a CRG is authorized to approve comment resolutions, edit the draft according to the 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: J Robert (University of Erlangen-Nuremberg)
	+ Seconded: B Rolfe (Blind Creek, Mitsubishi Research Labs)

Upon neither discussion nor objection the motion carries with unanimous support.

**TG13** by Volker Jungnickel (Fraunhofer Heinrich Hertz Institute)

* Discussion on MAC architecture

**TG12 (ULI)** by P Kinney (Kinney Consulting)

* Profile architecture is sufficiently complete to continue working on primitives

**SC maintenance** by P Kinney (Kinney Consulting)

* One comment concerning 802.15.4-2015 received via the SC maintenance process was resolved and will be forwarded to TG4md.

**SC WNG** by P Kinney (Kinney Consulting)

* + There will be one presentation, Network Enablers for Seamless HMD-based VR (Virtual Reality), SG plan and activitiesdocument 15-21-0009-00, by S Das and Seo, Dong-Il Dillon.

**802.19** Liaison by B Rolfe (Blind Creek, Mitsubishi Research Labs)

* + Discussion on coexistence issues 802.11ax and UWB
	+ TG 3: Discussion on coexistence recommended practice between 802.15.4 and 802.11ah

**AoB**

**11:18** Recessed until Thursday at 16:00

**Thursday, 17 Jan 2019**

**18:30** 802.15 WG chair called the meeting to order (37 attendees)

**18:32** TG4m closing report by G Stuebing (Cisco Systems) (15-19-0002-01)

**Motion**: *Move that 802.15 WG approve the formation of a Comment Resolution Group (CRG) for the WG balloting of the P802.15.4-REVd-D01 with the following membership: Gary Stuebing (as Chair), Don Sturek, Kunal Shah, Ruben Salazar, Tero Kivinen, Phil Beecher and Shoichi Kitazawa. The 802.15.4md CRG 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: Gary Stuebing (Cisco Systems)

Seconded by: Rick Alfvin (Linespeed)

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

**18:38** TG 4w (LPWAN) closing report by Jörg Robert (University of Erlangen-Nuremberg) (15-19-0070-01)

**18:44** TG 4z (ELR) closing reportby T Harrington (Pro ID) (15-19-0065-00)

**18:47** IG VAT closing report by R Heile (Wireless Communications Consulting) (15-19-0066-00)

**18:50** TG13closing report by Volker Jungnickel (Fraunhofer Heinrich Hertz Institute) (15-19-0067-01)

**18:53** TG12 ULI closing report by Pat Kinney (Kinney Consulting) (15-19-0019-01)

**18:56** Standing Committeesclosing report by Pat Kinney (Kinney Consulting) (15-19-0014-01)

*SCmaintenance requests that the WG approve the revised Operations Manual described in 15-10-0235-22*

Moved by Ben Rolfe (Blind Creek, Mitsubishi Research Labs), seconded by Charlie Perkins (Futurewei Technologies)

Upon neither discussion nor objection the motion carries with unanimous consent

**19:05** 802.18 liaison report by J Holcomb (Itron) (15-19-0016-00)

**19:09** 802.19 liaison report by B Rolfe (Blind Creek, Mitsubishi Research Labs) (15-19-0004-03)

**19:16** 802.24 liaison report by T Godfrey (EPRI) (15-19-0072-00)

**AoB**

**17:00** **Motion** *to adjourn* was made by Rick Alfvin (Linespeed), seconded by B Rolfe (Blind Creek, Mitsubishi Research Labs), upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 64

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| Ahlendorf | Hendrik | NXP Semiconductors |
| Alfvin | Richard | Linespeed Events LLC |
| Baer | Bernd | Marquardt |
| Barras | David | 3db Access AG |
| BEECHER | PHILIP E | Wi-SUN Alliance |
| Bims | Harry | Bims Laboratories, Inc. |
| Bober | Lennert | Fraunhofer Heinrich Hertz Institute |
| Boldy | David |  |
| Calvert | Chris | Landis Gyr Group Worldwide |
| Chang | Soo-Young | California State University, Sacramento (CSUS) |
| Chaplin | Clint | Samsung Research America |
| Danev | Boris | 3db Access AG |
| De Ruijter | Hendricus | Silicon Laboratories |
| Dolmans | Guido | Holst Centre / IMEC-NL |
| Fagan | Anthony | DecaWave |
| Fischer | Michael | NXP Semiconductors |
| Gilb | James | Gilb Consulting, Inc. |
| Gillmore | Matthew | Itron Inc. |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Golshan | Robert | Apple, Inc. |
| Guo | Jianlin | Mitsubishi Electric Research Labs (MERL) |
| Hall | Robert | RF Technologies, Inc. |
| Hammerschmidt | Joachim | Apple, Inc. |
| Hara | Shinsuke | Osaka City University (OCU) |
| Harrington | Timothy | Pro-ID |
| Heile | Robert | Wi-SUN Alliance |
| Holcomb | Jay | Itron Inc. |
| Huang | Guogang  | Huawei |
| Ibrahim | Brima | NXP Semiconductors |
| Ikegami | Tetsushi | Meiji University |
| Jeong | Seongah | Samsung Electronics Co., Ltd. |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Karthik | S. G. | SAMSUNG ELECTRONICS |
| Kettle | Paul | Decawave |
| KINNEY | PATRICK | Kinney Consulting LLC |
| Kitazawa | Shoichi | Muroran IT |
| Kivinen | Tero | Self Employed |
| Krieger | Ann | US Department of Defense |
| Lee | Jack | Samsung Electronics Co., Ltd. |
| LEE | Mingyu | Samsung Electronics Co., Ltd. |
| Leong | Frank | NXP Semiconductors |
| Li | Huan-Bang | National Institute of Information and Communications Technology (NICT) |
| Li | Zheda | Samsung Research America |
| MAQBOOL | Masood | Apple, Inc. |
| MARIAPPAN | VINAYAGAM | SNUT |
| Nabki | Frederic | SPARK Microsystems |
| Naguib | Ayman | Apple, Inc. |
| Perkins | Charles | Futurewei Technologies |
| Rakanovic | Demir | u-blox |
| Robert | Joerg | University of Erlangen-Nuremberg |
| Rolfe | Benjamin | Blind Creek Associates |
| Sakata | Ren | TOSHIBA Corporation |
| Sarris | Ioannis | u-blox |
| SAUER | PETER | Microchip Technology, Inc. |
| Serafimovski | Nikola | pureLiFi |
| Shah | Kunal | Silver Spring Networks Inc. |
| Stuebing | Gary | Cisco Systems, Inc. |
| Sturek | Don | Itron Inc. |
| Turner | James | Landis+Gyr AG |
| Verso | Billy | DecaWave |
| V Padaki | Aditya | Samsung Research America |
| Wechsler | Johannes | Fraunhofer Institute for Integrated Circuits IIS |
| Wendt | Matthias |  |
| Yee | Peter | NSA/IAD |