**IEEE P802.15**

**Wireless Personal Area Networks**

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| --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title |  |
| Date Submitted | [20 Mar 2016] |
| Source | [][][Chicago, IL] | Voice: [+1.847.960.3715]Fax: [+1.847.790.3805]E-mail: [pat.kinney@ieee.org] |
| Re: | [802.15 Interim Meeting in Waikoloa, HI] |
| Abstract | [IEEE 802.15 Working Group Minutes] |
| Purpose | [Official minutes of the Working Group Session] |
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 **IEEE 802.15 Interim Meeting – Session #102**

**Hilton Waikoloa**

**Waikoloa, HI USA**

**May 16 - 19, 2016**

**Monday, 16 May 2016**

**8:01** 802.11, 802.15, 802.16, 802.18, 802.19, 802.21, and 802.24 Chairs called the joint meeting to order. IEEE 802.15 attendance is included as Annex A.

General announcements:

* Art Astrin 1945-2016
* No photography, no audio recording
* Social – Reception (courtesy of Hilton) on Wednesday 18:00 – 19:30
* Don’t forget, book your room and register for July’s session

Straw Poll of new attendees: 0

**8:08**  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.

**8:12** Wireless and IMAT announcements by Nick Kukich (Verilan) ([15-16-0045-00](https://mentor.ieee.org/802.15/dcn/16/15-16-0045-00-0000-opening-plenary-information-2016.pptx))

**8:12** WG15 Chair informed the group that the Wireless Chairs Standing Committee (WCSC) met yesterday, Sunday. Chair noted that this is an open meeting, all are encouraged to attend.

**8:13** Financial report by Jon Rosdahl (Qualcomm) docs [11-16-00525-00](https://mentor.ieee.org/802.11/dcn/16/11-16-0525-00-0000-treasurer-report-may-2016-waikoloa.pptx),
[15-16-0366-00](https://mentor.ieee.org/802.15/dcn/15/15-16-0366-00-0000)

Total liabilities and equity $635,844.73

**8:17** Review future sessions (document # 15-16-0339-02)

* **July 24-29, 2016, Grand Hyatt, San Diego, CA, USA,** *802 Plenary Session*
* **September 11-16, 2016, Marriott Warsaw, Warsaw, Poland,** 802 Wireless Interim Session
* **November 6-11, 2016, Grand Hyatt San Antonio, San Antonio, TX, USA,** *802 Plenary Session.*
* **January 15-20, 2017, Hyatt Regency Atlanta, Atlanta, GA, USA, 802** *Wireless Interim Session.\**
* **March 12-17, 2017, Hyatt Regency Vancouver,** *802 Plenary Session.*
* **May 13-18, 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.\***

**8:20 Working Group Updates**

802.11 by Adrian Stephens (Intel), (document [11-16-0495-01](https://mentor.ieee.org/802.11/dcn/16/11-16-0495-01-0000-may-2016-wg-agenda.xlsx))

* 372 voters

802.15 by B Heile (document [15-16-0339-02](15-16-0339-02-0000-may-2016-802-15-wg-agenda-graphic))

* 103 voters
* TG3d: 100G (not meeting this week)
* 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 7r1: Optical Wireless Communications
* TG8: PAC (Peer Aware Communications) – going to WG letter ballot
* TG10: L2R (Layer 2 Routing) – going to Sponsor Ballot
* TG12 Upper Layer Interface (ULI) for 802.15.4
* IG IETF
* IG Dependability
* IG High Rate Rail Communications
* IG THz
* IG 15.4 Guide (on hold)

802.16 by R Marks

* No active projects, but the 802.16s PAR has been forwarded by EC

802.18 by R Kennedy

* discussing meeting at FCC, FCC 2nd report and order on 5 GHz, ETSI 300 328, et al, Ofcom release on consultation for 5 GHz band

802.19 S Shellhammer (19-16-0080-01)

* 32 voting members
* 3GPP Liaison
	+ have not heard back from BRAN
* Possible additional liaisons
	+ NYC
	+ Send liaison to WiFi Alliance
* TG1a has completed initial draft
* SG formation: Wireless Automotive Coexistence

802.21 Subir Das (21-16-0068-00)

* 22 voting members
* TG21m – revision project – passed Letter Ballot, working on comments
* TG21.1 –use cases and services – passed Letter Ballot, working on comments

802.24 Tim Godfrey

* 37 voters
* Task Groups
	+ 802.24.1 Smart Grid TG Tim Godfrey
	+ 802.24.2 IoT TG Chris DiMinico
* working on sub-GHz whitepaper

**AoB**

* EC 5G update by R Marks **(**[**802-ec/dcn/16/ec-16-0061-06-5GSG-5g-sc-conference-call-agenda.pdf**](https://mentor.ieee.org/802-ec/dcn/16/ec-16-0061-06-5GSG-5g-sc-conference-call-agenda.pdf)**)**
	+ Met at Macau
	+ Report about cost and benefits on different approaches to 5G standardization

**8:42** Joint meeting adjourned

**Working group opening plenary**

**9:30** B Heile (WiSUN Alliance), WG chair called the 802.15 WG plenary to order (15-16-0339-02)

Straw Poll of new attendees: 0

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 (15-16-0339-02)

* Moved by Ben Rolfe, seconded by C Powell. Following neither discussion nor objection the agenda was approved.

Review and approve 802.15 WG minutes from the Macau session (15-16-0206-00-0000)

* Moved by C Powell, seconded by J Holcomb. Upon neither discussion nor objection the joint minutes were approved.

**9:46** WG recessed

**Wednesday 18 May 2016**

**802.15 mid-session plenary meeting**

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

**TG4u** by Phil Beecher

* LB120 closed with 100% approval and only editorial comments
* Will ask for unconditional approval to go to sponsor ballot

**TG4v** by Phil Beecher

* 1 proposal submitted
* No contention, will be preparing a draft to start letter ballot in July
* Motion *to affirm Phil as TG4v chair*
* C Powell moved, A Estrada seconded
* Upon neither discussion nor objection the motion carries.

**802.18 liaison** by Jay Holcomb

* Discussed FCC and report and order
* ETSI updates
* Consultation on 3.8 - 4.2 GHz

**TG3e** by Andrew Estrada

* Completed 1st recirc with 101 comments
* Working on comment resolution

**TG4s (SRU)** by Shoichi Kitazawa

* Developing a draft

**TG4t** by Clint Powell

* Working on CA document
* Will request to go to letter ballot at closing plenary

**TG10 (L2R)** by C Powell

* Finished all resolutions

**Motion for WG Approval to Recirc. LB 118.**

* *Move that 802.15 WG start a WG Letter Ballot recirculation requesting approval to forward document D6\_P802-15-10-Draft\_Recommended\_Practice, edited in accordance with the instructions in document [15-15-0318-52], and CA document [15-15-0535-02] to Sponsor Ballot pending the completion and inclusion of the edits in the draft.*
* Moved by: Clint Powell; Seconded by: Ben Rolfe
* Upon neither discussion nor objection the motion carries

**Motion for WG Approval to Form TG10 BRC.**

* *Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG 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: Myung Lee
* Upon neither discussion nor objection the motion carries

**TG7r1 by Yeong Min**

* Working on technical path forward

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

* Working on draft, estimate LB at closing plenary

**TG12 ULI** by P Kinney

* Defining a list of objects that the ULI will configure/manage
* Motion *to affirm Pat Kinney as TG12 chair*
* B Rolfe and A Estrada seconded
* Upon neither discussion nor objection the motion carries

**IG 6tisch** **closing report** by P Kinney (15-16-0375-01)

**S Maintenance** by P Kinney

* finished the following changes to the Operations Manual:
* Changed “5C” to “CSD” in 2 places
* Added: 7.8 SC IETF
* Added: TGs are authorized to send drafts out for recirculation to 4.1
* Above changes have been added to the 802.15 Operations Manual draft and uploaded to Mentor as 15-10-0235-17.
* The WG will be asked to approve this document as the Operations Manual at this week’s closing plenary.

**SC WNG** by P Kinney

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

**11:15** Recessed until Thursday at 16:00

**Thursday, 19 May 2016**

**16:04** 802.15 WG chair called the meeting to order

**16:06** TG 3e(HRCP) closing report by A Estrada (15-16-0405-00)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.3e\_D02 and P802.15.3e\_D03 with the following membership: Andrew Estrada (Chair), Ko Togashi, Itaru Maekawa, Jae Seung Lee, Keitarou Kondou, 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 Andrew Estrada Seconded By B Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

**16:12** TG4s (SRU) closing report by S Kitazawa (15-16-0422-00)

**16:18** TG4t closing report by C Powell (15-16-0387-01)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.4t/D01 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/D01 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: B Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

*Move that 802.15 WG start a WG Letter Ballot requesting approval to forward document P802.15.4t/D01 to Sponsor Ballot.*

Moved by: Clint Powell

Seconded by: B Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

**16:23** TG4u (India) closing reportby P Beecher (15-16-0398-01)

Motion: *802.15 has reviewed and approves the CSD [15-15-0755-02-0000\_15.4u\_India\_CSD] and requests unconditional approval from the EC to submit P802.15.4u\_D02 to Sponsor Ballot.*

Moved by: P Beecher; Seconded by: B Rolfe

Upon no discussion the vote was taken with the results of 31/0/0, motion carries.

Move that *802.15 Working Group approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of the P802.15.4u-D02 with the following membership: Phil Beecher (chair), Kunal Shah, Amarjeet Kumar, Benjamin Rolfe, Chris Calvert and Gary Stuebing. The 802.15.4u 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 Beecher; Seconded by: Kunal Shah

Upon neither discussion nor objection the motion carries with unanimous consent

**16:31** TG4v closing reportby P Beecher (15-16-0384-01)

**16:35** TG7r1 (OWC) closing report by Rick Roberts (15-16-0418-00)

**16:37** TG8 (PAC) closing report by Myung Lee (15-16-0423-00)

Move that *IEEE 802.15 WG start a WG Letter Ballot requesting approval to forward document draft\_P802.15.8\_D1.0.pdf, and CA document 15-16-385-00-0008, to Sponsor Ballot.*

Moved by: Myung Lee

Seconded by: C 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 P802.15.8-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: Myung Lee

Seconded by: B Rolfe

Upon neither discussion nor objection the motion carries with unanimous consent

**16:41** TG10 (L2R) closing report by C Powell (15-16-0386-01)

*802.15 has reviewed and approves the CSD [15-13-0232-04-0l2r] and requests conditional approval from the EC to submit D6\_P802-15-10-Draft\_Recommended\_Practice to Sponsor Ballot.*

*Moved by: Clint Powell*

*Seconded by: B Rolfe*

Upon no discussion the vote was taken with the results of 28/0/0, the motion carries

**16:48** TG12 ULI closing report by Pat Kinney (15-16-0374-03)

**16:55** SCclosing report by Pat Kinney (15-16-0376-01)

*Move that 802.15 WG approve the 802.15 WG Operations Manual document 15-10-0235-17.*

Moved by Pat Kinney, seconded by C Powell

Upon neither discussion nor objection the motion carries with unanimous consent

**16:58** 802.11 liaison report by A Petrick (15-16-0399-00)

**17:04** 802.18 liaison report by J Holcomb (15-16-0407-00)

**17:06** 802.19 liaison report by S Shellhammer

* + liaison with 3GPP agreement is being balloted by EC
	+ TG1a is in letter ballot
	+ SG on coexistence in automotive environment working on PAR to be completed by November

**17:09** 802.24 liaison by B Rolfe

* Worked on white papers, comparing 802 devices to cellular
* G Parsons request for an 802 focused magazine

**AoB**

**17:13** Motion *to adjourn* was made by C Powell, seconded by B Rolfe, upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 65

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| Akhavan | Koorosh | Qualcomm Incorporated |
| Akiyama | Keiji | Sony Semiconductor Solutions Corporation |
| Aoyama | Hideki | Panasonic Corporation |
| Arakawa | Yutaka | Nara Institute of Science and Technology (NAIST) |
| Beecher | Philip E | Wi-SUN Alliance |
| Bims | Harry | Bims Laboratories, Inc. |
| Calvert | Chris | Landis Gyr Group Worldwide |
| Cha | Jaesang | SNUT |
| Chang | Soo-Young | California State University, Sacramento (CSUS) |
| Chasko | Stephen | Landis Gyr Group Worldwide |
| De Ruijter | Hendricus | Silicon Laboratories |
| Estrada | Andrew | Sony Corporation |
| Gillmore | Matthew | Itron Inc. |
| Gorday | Paul | ARM, Ltd. |
| Goto | Yoshiho | Panasonic Corporation |
| Heile | Robert | Wi-SUN Alliance |
| Hernandez | Marco | National Institute of Information and Communications Technology (NICT) |
| Hirabe | Yuko | Nara Institute of Science and Technology (NAIST) |
| Hiraga | Ken | NTT |
| Hirota | Tomoyuki | Panasonic Corporation |
| Holcomb | Jay | Itron Inc. |
| Jang | Yeong Min | Kookmin University |
| Joo | Seong-Soon | Electronics and Telecommunications Research Institute (ETRI) |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Kim | Jaehwan | Electronics and Telecommunications Research Institute (ETRI) |
| Kim | Youngsoo | SAMSUNG |
| Kinney | PATRICK | Kinney Consulting LLC |
| Kitazawa | Shoichi | ATR Wave Engineering Laboratories |
| Kojima | Fumihide | National Institute of Information and Communications Technology (NICT) |
| Kondou | Keitarou | Sony Corporation |
| Kumar | Amarjeet | Procubed Inc. |
| Kwak | Byung-Jae | Electronics and Telecommunications Research Institute (ETRI) |
| Laurent | Stephane | Gridbee communications |
| Le | Namtuan | Kookmin University |
| Lee | Jae Seung | Electronics and Telecommunications Research Institute (ETRI) |
| Lee | Myung | CUNY - City University of NY |
| Li | Huan-Bang | National Institute of Information and Communications Technology (NICT) |
| Li | Qiang | HUAWEI |
| Lynch | Michael | Nortel Networks |
| Ma | Jing | National Institute of Information and Communications Technology (NICT) |
| Matsumura | Hiroyuki | Sony Corporation |
| Millet | Charles | Analog Devices Inc. |
| Nguyen | Trang | Kookmin University |
| Oshima | Mitsuaki | Panasonic Corporation |
| Perkins | Charles | Futurewei Technologies |
| Petrick | Albert | Jones-Petrick and Associates, LLC. |
| Powell | Clinton | Powell Wireless Consulting, LLC |
| Rabarijaona | Verotiana | National Institute of Information and Communications Technology (NICT) |
| Rakanovic | Demir | u-blox |
| Riou | Emmanuel | Gridbee Communications |
| Roberts | Richard | Intel Corporation |
| Rolfe | Benjamin | Blind Creek Associates |
| Sato | Noriyuki | Oki Electric Industry Co., Ltd. |
| Serafimovski | Nikola | pureLiFi |
| Shah | Kunal | Silver Spring Networks Inc. |
| Shimada | Shusaku | Schubiquist Technologies |
| Shimizu | Masashi | Nippon Telegraph and Telephone Corporation (NTT) |
| Stuebing | Gary | Cisco Systems, Inc. |
| Sturek | Don | Silver Spring Networks Inc. |
| Togashi | Kou | TOSHIBA Corporation |
| Toshinaga | Hideki | NTT |
| Tsonev | Dobroslav | pureLiFi |
| Verso | Billy | DecaWave |
| Winkel | Ludwig | Siemens AG |
| Yokota | Hidetoshi | Landis Gyr Group Worldwide |