**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 | [16 Sept 2016] |
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| Re: | [802.15 Interim Meeting in Warsaw, Poland] |
| 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 #104**

**Marriott Warsaw**

**Warsaw, Poland**

**Sept 12 - 15, 2016**

**Monday, 12 Sept 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:

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

Straw Poll of new attendees: 0

**8:04**  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.

**8:07** Financial report by J Rosdahl (Qualcomm) docs [11-16-01070-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1070-00-0000-treasurer-report-september-2016-warsaw.pptx),
[15-16-0606-00](https://mentor.ieee.org/802.15/dcn/15/15-16-0606-00-0000)

Total liabilities and equity $457,637.63

**8:10** Wireless and IMAT announcements by C Reilly (Verilan)

**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** Review future sessions (document # 15-16-0574-02)

* **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 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.\***

**8:14 Working Group Updates**

802.11 by Adrian Stephens (Intel), (document [11-16-1066-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1066-00-0000-september-2016-802-11-opening-report.pptx))

* 372 voters

802.15 by B Heile (document [15-16-0574-02](https://mentor.ieee.org/802.15/dcn/16/15-16-0574-02-0000-802-15-waw-2016-graphic-agenda.xlsx))

* 96 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 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
* SC IETF
* IG LPWA

802.16 by H Bims ([16-16-0052-00](https://mentor.ieee.org/802.16/dcn/16/16-16-0052-00-Gdoc-ieee-802-16-status-report-for-session-105.pdf))

* 5 voters
* 802.16s is the only active project

802.18 by R Kennedy

* discussing ETSI BRAN meeting, EU radio equipment directive, FCC NPRM

802.19 S Shellhammer (19-16-0139-00)

* 32 voting members
* 3GPP Liaison - have not heard back
* TG1- doing draft review
* SG formation: Wireless automotive coexistence - working on PAR & CSD
* Possible additional liaisons

802.21 S Das (21-16-0100-00)

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

802.24 Tim Godfrey (24-16-0100-00)

* 37 voters
* Task Groups
	+ 802.24.1 Smart Grid TG Sub-GHz white paper
	+ 802.24.2 IoT TG Chris DiMinico

**AoB**

**8:32** Joint meeting adjourned

**Working group opening plenary**

**9:30** B Heile (WiSUN Alliance), WG chair called the 802.15 WG plenary to order (15-16-0574-02)

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 (15-16-0574-02)

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

Review and approve 802.15 WG minutes from the San Diego session (15-16-0498-00-0000)

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

**9:42** WG recessed

**Wednesday 14 Sept 2016**

**802.15 mid-session plenary meeting**

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

**802.18 liaison** by Jay Holcomb

* Discussed 1689 FCC and report and order
* Discussed ETSI updates

**TG3d** by Thomas Kürner

* Motion: *request that the*  *text proposal contained 15-16-0494-02-003d-itu-r-working-document and 15-16-0614-01-003d-response-letter-to-ls-wp5a be approved by the WG for further submission to 802.18.*
	+ Moved by: Thomas Kürner
	+ Seconded by: Andrew Estrada
	+ Upon neither discussion nor objection the motion carries
* Motion: *request that the*  *text proposal contained 15-16-0514-02-003d-itu-r-wp5c-working-document-towards-a-preliminary-draft and 15-16-0613-01-003d-response-letter-to-ls-wp5c be approved by the WG for further submission to 802.18.*
* Moved by: Thomas Kürner
* Seconded by: Andrew Estrada
* Upon neither discussion nor objection the motion carries

**TG3e** by Andrew Estrada

* Completed Sponsor Ballot with 256 comments, 150 must be satisfied
* Working on comment resolution

**TG4t** closing report by C Powell (15-16-0611-01)

*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/D04 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: Phil Beecher

Upon neither discussion nor objection the motion carries with unanimous consent

**TG4u** closing reportby Phil Beecher (15-16-0651-00)

* LB120 closed with 100% approval and only editorial comments
* Will ask for unconditional approval to go to sponsor ballot
* Move that *802.15 Working Group approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of the P802.15.4u-D04 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.*
* Upon neither discussion nor objection the motion carries with unanimous consent

**TG4v** by Phil Beecher

* All comments have been resolved

**TG7m by Yeong Min**

* Working on comment resolutions, 80% are completed

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

* Working comment resolutions

**TG10 (L2R)** by C Powell

* Finished all resolutions

**TG12 ULI** by P Kinney

* Finishing up on the architecture of the ULI

**SC Maintenance** by P Kinney

* finished the following changes to the Operations Manual:
* Change voter maintenance to allow voting on recircs to count towards letter ballot voting, corrected motion templates for letter ballot, sponsor ballot, and RevCom submission, and added BRC motion for sponsor ballot.
* Above changes have been added to the 802.15 Operations Manual draft and uploaded to Mentor as 15-10-0235-18.

**SC WNG** by P Kinney

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

**11:08** Recessed until Thursday at 16:00

**Thursday, 15 Sept 2016**

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

**18:33** TG3d(100G) closing report by Thomas Kürner (15-16-0691-00)

**18:36** TG3e(HRCP) closing report by A Estrada (15-16-0634-00)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of the P802.15.3e\_D05 and P802.15.3e\_D06 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 Andrew Estrada Seconded By Thomas Kürner

Upon neither discussion nor objection the motion carries with unanimous consent

**18:40** TG4s (SRU) closing report by H Yakota (15-16-0697-02)

* *Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the P802.15.4s-D01 with the following membership: Shoichi Kitazawa, Hidetoshi Yokota, and Shusaku Shimada. 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: Hidetoshi Yokota
* Seconded By: Clint Powell

Upon neither discussion nor objection the motion carries with unanimous consent

**18:45** TG4v closing reportby P Beecher (15-16-0624-02)

*Move that the 802.15 WG start a WG Recirculation Letter Ballot requesting approval to forward document P802.15.4v-D2 to Sponsor Ballot*

Moved: Phil Beecher

Seconded: K 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-D2 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

*Motion: 802.15 has reviewed and approved the CSD [*15-16-0131-01-0000\_15.4v-sub-GHz-CSD*] and requests conditional approval from the EC to submit P802.15.4v-D02 or current revision to Sponsor Ballot.*

Moved by: Phil Beecher

Seconded by: K Shah

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

**18:54** TG7 (OWC) closing report by Yeong Min (15-16-0703-00)

**18:56** TG8 (PAC) closing report by Myung Lee (15-16-0648-00)

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: C Powell

Upon neither discussion nor objection the motion carries with unanimous consent

**18:58** TG10 (L2R) closing report by C Powell (15-16-0612-01)

*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

*Move that 802.15.3e WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of the P802.15.3e\_D05 and P802.15.3e\_D06 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: Clint Powell; Seconded by: Verotiana Rabarijaona
	+ Upon neither discussion nor objection the motion carries

 *Motion: that 802.15 WG reviewed and approves the CSD [15-13-0232-04] and requests conditional approval from the EC to submit P802.15-10/D08 (or current revision) to RevCom.*

* + Moved by: Clint Powell; Seconded by: C Perkins
	+ Upon no discussion the vote was taken with the results of 28/0/0, the motion carries

**19:06** TG12 ULI closing report by Pat Kinney (15-16-0601-01)

**19:10** SCclosing report by Pat Kinney (15-16-0604-01)

*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

**19:13**  IG LPWA closing report by Joerg Roberts (15-16-0654-01)

**19:15** 802.18 liaison report by J Holcomb (15-16-0663-00)

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

* Almost done with sub-GHz white paper

**AoB**

**19:22** 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 = 59

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| Akiyama | Keiji | Sony Semiconductor Solutions Corporation |
| Aoyama | Hideki | Panasonic Corporation |
| Baykas | Tuncer | Istanbul Medipol University |
| 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 |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Heile | Robert | Wi-SUN Alliance |
| Hernandez | Marco | National Institute of Information and Communications Technology (NICT) |
| Hiraga | Ken | NTT |
| Hirota | Tomoyuki | Panasonic Corporation |
| Holcomb | Jay | Itron Inc. |
| Hosako | Iwao | National Institute of Information and Communications Technology (NICT) |
| Jang | Yeong Min | Kookmin University |
| Jeong | SangKwon | IMRC |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Kim | Jeong Gon | Korea Polytechnic University (KPU) |
| kim | junghun | Telecommunications Technology Association (TTA) |
| Kinney | Patrick | Kinney Consulting LLC |
| Kita | Masato | Sony Corporation |
| Kojima | Fumihide | National Institute of Information and Communications Technology (NICT) |
| Kondou | Keitarou | Sony Corporation |
| Kuerner | Thomas | TU Braunschweig |
| Kwak | Byung-Jae | Electronics and Telecommunications Research Institute (ETRI) |
| 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 |
| Lichtensteiger | William Robert | Landis Gyr Group Worldwide |
| Ma | Jing | National Institute of Information and Communications Technology (NICT) |
| maekawa | itaru | Japan Radio Co., Ltd. |
| Mariappan | Vinayagam | SNUT |
| Nguyen | Trang | Kookmin University |
| Oshima | Mitsuaki | Panasonic Corporation |
| Perkins | Charles | Futurewei Technologies |
| Powell | Clinton | Powell Wireless Consulting, LLC |
| Rabarijaona | Verotiana | National Institute of Information and Communications Technology (NICT) |
| Rakanovic | Demir | u-blox |
| Rey | Sebastian | Technische Universitat Braunschweig |
| Robert | Joerg | University of Erlangen-Nuremberg |
| Roberts | Richard | Intel Corporation |
| Salazar Cardozo | Ruben E | Landis Gyr Group Worldwide |
| Sato | Noriyuki | Oki Electric Industry Co., Ltd. |
| Serafimovski | Nikola | pureLiFi |
| Shah | Kunal | Silver Spring Networks Inc. |
| Shimada | Shusaku | Schubiquist Technologies |
| Stuebing | Gary | Cisco Systems, Inc. |
| Sturek | Don | Silver Spring Networks Inc. |
| Togashi | Kou | TOSHIBA Corporation |
| Tsonev | Dobroslav | pureLiFi |
| Uysal | Murat | Ozyegin University |
| Verso | Billy | DecaWave |
| Wang | Hao | Fujitsu Research & Development Center |
| Xing | Weimin |  |
| Yokota | Hidetoshi | Landis Gyr Group Worldwide |
| Zuniga | Juan Carlos | SIGFOX |