**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 | [15 May 2015] |
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| Re: | [802.15 Interim Meeting in Vancouver, Canada] |
| 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 #96**

**Hyatt Regency Vancouver**

**Vancouver, B.C., Canada**

**May 11 - 14, 2015**

**Monday, 11 May 2015**

**8:03** 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.

General announcements:

* No photography, no audio recording
* Social – Butcher & Bullock**,** 911 West Pender St.
* Don’t forget, book your room and register for July’s session

Straw Poll of new attendees: 3

**8:05**  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.

**8:10** Financial report by Jon Rosdahl (CSR) docs [11-15-00522-00](https://mentor.ieee.org/802.11/dcn/15/11-15-0522-00-0000-treasurer-report-may-2015.pptx), [15-15-0365-00](https://mentor.ieee.org/802.15/dcn/15/15-15-0365-00-0000-treasurer-report-may-2015.pptx)

**8:14** Wireless and IMAT announcements by R Alfvin (Verilan) ([15-15-0182-01](https://mentor.ieee.org/802.15/dcn/15/15-15-0182-01-0000-opening-plenary-information-2015.pptx))

**8:16** WG15 Chair informed the group that the Wireless Chairs Standing Committee (WCSC) met yesterday. Chair noted that this is an open meeting, all are encouraged to attend.

* Discussed aspects of what the Operations Manual (OM) should include.

**8:19** Audcom reviewed an example of a WG P&P and requested changes to harmonize their template with 802’s WG P&P

**8:21** Review future sessions (document # [15-15-0277-05](https://mentor.ieee.org/802.15/dcn/15/15-15-0277-05-0000-may-2015-802-15-wg-agenda-graphic.xlsx))

* **July 12-17, 2015, Hilton Waikoloa Village, Kona, HI, USA,***802 Plenary Session.*
* **September  13-18, 2015,** [**Centara Grand**](http://www.centarahotelsresorts.com/centaragrand/cgcw/index.asp)**, Bangkok***, 802 Wireless Interim Session.\**
* **November 8-13, 2015, Hyatt Regency Dallas, Dallas, TX, USA,***802 Plenary Session.*
* **January 17-22, 2016, Hyatt Regency Atlanta, Atlanta, GA, USA,***802 Wireless Interim Session.*\*
* **March 13-18, 2016, Sands Venetian Hotel, Macau, PRC,***802 Plenary Session.*
* **May 15-20, 2016, Hilton Waikoloa Village, Kona, HI, USA,** *802 Wireless Interim Session.\**
* **July 24-29, 2016, Grand Hyatt, San Diego, CA, USA,** *802 Plenary Session*
* **September 18-23, 2016, Europe (Budapest or Warsaw),** *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 Cente, Daejeon, Korea (TBC),***802 Wireless Interim Session.*

**8:25 Working Group Updates**

802.11 by Adrian Stephens (Intel), (document 11-15-483-00)

* 323 voters
* 802.11ak error on this document, it is in the WG letter ballot phase

802.15 by B Heile (document 15-15-0277-05)

* 98 voters
* 802.15.4 revision on track to be published in 2015 including 4e, 4f, 4g, 4j, 4k, 4m, 4p

TG3d: 100G

TG3e: HRCP (High Rate Close Proximity)

TG4n: Chinese Medical Band (CMB) - in Sponsor Ballot

TG4q: ULP (Ultra Low Power) in WG LB

TG4r: Ranging standardized

TG4s: SRU (Spectrum Resource Utilization)

TG 7r1: Optical Wireless Communications

TG8: PAC (Peer Aware Communications) – finishing draft document

TG9: KMP (Key Management Protocol) – WG Letter Ballot

TG10: L2R (Layer 2 Routing) – in WG Letter Ballot

IG 6tisch

IG Dependability

IG High Rate Rail Communications

802.18 by M Lynch

* 11 voters
* looking at 2 items that haven’t been resolved as yet

802.19 S Shellhammer (doc #19-15-040-00)

* 26 voters
* Coexistence Lessons Learned (CLL) Liaison
	+ 3 new liaison documents from 3GPP will be reviewed
* 3GPP Liaison –Havish Koorapaty of 3GPP will be giving a presentation to IEEE 802 this session
* Coexistence in Unlicensed Bands (CUB) Study Group (SG)
	+ Working on PAR for a Task Group

802.21 Subir Das (doc # 21-15-046-00)

* 16 voters
* TG21m – revision project – discuss draft document and contributions
* TG21.1 –use cases and services – discuss draft document and contributions

**AoB**

Other 802 news: still working on privacy trials at these sessions

**8:48** Joint meeting adjourned

**Working group opening plenary**

**9:30** B Heile (WiSUN Alliance), WG chair called the 802.15 WG plenary to order (15-15-0277-05)

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 (15-15-0277-05)

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

Review and approve 802.15 WG minutes from the Berlin session (15-15-0190-00-0000)

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

**9:45** WG recessed

**Wednesday 13 May 2015**

**802.15 mid-session plenary meeting**

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

**TG3d (100G)** by T Kürner

* presentations were heard
* approved PAR and CSD for 15.3 revision

**TG3e** by Andrew Estrada

* Approved PAR and CSD for 15.3 revision
* Channel model and CFP documents have been drafted

**15.3 Revision** by B Heile

* Motion: *request that the PAR and CSD contained in documents 15-15-324-00 and 15-15-332-00, respectively, be approved by the 802.15 WG and that the 802 EC be requested to forward the revised PAR to NesCom. The 802.15 working group chair and technical editor are authorized to make additional modifications to the PAR and 5C as needed to reflect EC discussion at its closing meeting.*

Moved by J Gilb, Seconded by C Powell

Upon no discussion the vote was taken with the results 38/0/0, motion carries

**TG4n (CMB)** Closing Report by Kenichi Mori (15-15-0413-00)

* *Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor balloting of the 802.15.4n draft standard with the following membership: Arthur Astrin (chair), Liang Li, Shinsuke Hara, WeiXia Zou and Kenichi Mori.  The 802.15.4n BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the 802.15.4n 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 at least 30 days in advance.*

Moved by Liang Li Seconded by C Powell

Upon neither discussion nor objection the motion carries

**TG4q (ULP)** by Chu Ngo

* Working on preparing for Sponsor Ballot

**TG4r (ranging)**

* No meetings this session

**TG4s (SRU)** by Shoichi Kitazawa

* Working on coexistence mechanisms

**TG7r1 by Yeong Min**

* Editing the TRD

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

* Hearing presentations
* Working on draft
* changing MAC address to 48-bit

**TG9 (KMP)** by R Moskowitz (Verizon)

* WG LB recirculation is ongoing
* Editing the PAR to remove 15.7

**TG10 (L2R)** by C Powell

* Working on comment resolution

**IG High Rate Rail Communications (HRRC)** by Junhyeong Kim (15-15-0392-00)

**IG dep** Closing Reportby R Kohno (15-15-0402-00)

**IG 6tisch** by P Kinney

* meeting at PM1 on Monday
* discussed IETF 6tisch status and issues

**SC Maintenance** by P Kinney

* editorial comments reviewed for technical aspects
* technical comments grouped and assigned
* 53 comments resolved as of this morning

**SC WNG** by P Kinney

* + Guide for 802.15.4 presentation (15-15-0397-00) by J Gilb
	+ NGMN 5G White Paper (15-15-0408-00) by T Kürner
	+ 802.15.4-specific L2 sub-layer presentation (15-15-0409-00) by P Kinney

**Next Generation Mobile Alliance** by B Heile

* Working on coordination effort

**Augmented Reality Enterprise** **Alliance** by B Heile

* Three areas of interest: 15.7, 15.6, 15.4

**AoB**

**11:05** Recessed until Thursday at 18:30

**Thursday, 14 May 2015**

**18:33** 802.15 WG chair called the meeting to order

**18:36** TG3d by T Kürner (15-15-0415-00)

**18:38** TG 3e(HRCP) by A Estrada (15-15-0368-01)

**18:40** TG4q (ULP) by C Ngo (15-15-0437-00)

*Move that the 802.15.4q TG requests 802.15 WG to approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the 802.15.4q draft standard with the following membership: Chiu Ngo (Chair), Allan Zhu (Huawei), Hendricus De Ruijter (Silicon Lab), Youngsoo Kim (Samsung), Guido Dolmans (IMEC), Kiran Bynam (Samsung), Chandrashekhar Thejaswi PS (Samsung). The 802.15.4q 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 at least 30 days in advance.*

Moved by C Ngo, seconded by M Lee

Upon neither discussion nor objection the motion carries with unanimous consent

**18:47** TG4s (SRU) by S Kitazawa (15-15-0438-00)

**18:51** TG7r1 (OWC) by Yeong Min Jang (15-15-0436-00)

**18:55** TG8 (PAC) by Myung Lee (15-15-0421-00)

**18:58** TG9 (KMP) by P Yee (15-15-0422-01)

Motion: *request that the modified IEEE 802.15 TG9 PAR contained in document 15-15-0224-01-0009-par-changes.doc and 5C contained in document 15-15-0406-00-0009-5C-changes.doc be approved for submission to the EC to forward the PAR and 5C to NesCom*.

Moved by P Yee, Seconded by T Kivinen

Upon no discussion the vote was taken with the results of 32/0/1; motion carries

Move *that 802.15 WG reaffirm the constitution of a Ballot Resolution Committee (BRC) for the WG balloting of the 802.15.9 draft recommended practice with the following membership: Robert Moskowitz, Tero Kivinen, Don Sturek, Peter Yee, Subir Das, Brian Weis, Gary Stuebing. The 802.15.9 BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the 802.15.9 draft on behalf of the 802.15 WG. Comment resolution between sessions will be conducted via reflector email and via teleconferences announced to the reflector at least 30 days in advance.*

Moved by P Yee, Seconded by T Kivinen

Upon neither discussion nor objection the motion carries with unanimous consent

**19:03** TG10 (L2R) by Clint Powell (15-15-0369-00)

*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 TG10 BRC is authorized to approve comment resolutions and to approve the start of balloting 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 as announced to the reflector at least 30 days in advance.*

Moved by: Clint Powell, Seconded by: T Kürner

Upon neither discussion nor objection the motion carries with unanimous consent

**19:10** IG6tisch by Pat Kinney (15-15-0350-01)

**19:18** SCclosing report by Pat Kinney (15-15-0345-02)

*Move that 802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor Balloting of the 802.15.4 Revision draft standard with the following membership: Pat Kinney, James Gilb, Jussi Haapola, Jeritt Kent, Benjamin Rolfe, Clint Powell, Billy Verso, Kunal Shah, Fumihide Kojima, Tero Kivinen, and Tim Harrington. The 802.15.4 Revision BRC is authorized to approve comment resolutions and to approve the start of balloting the 802.15.4 Revision draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences as announced to the reflector at least 30 days in advance.*

***Moved by Pat Kinney*** *on behalf of Standing Committee*

Upon neither discussion nor objection the motion carries with unanimous consent

**19:20** 802.11 Liaison by A Petrick (15-15-0435-00)

**19:28** 802.18 by J Notor (15-15-0428-00)

**19:31** 802.24 by T Godfrey

* Joint meeting with 802.19, does 802.24 have an interest in LTE unlicensed spectrum? Result was no.
* White paper on sub-GHz standards
* White paper on smart grid
* Student paper writing contest discussion

**AoB**

**19:38** Motion *to adjourn* was made by C Powell, seconded by A Estrada, upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 49

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| AKIYAMA |  KEIJI | Sony Corporation |
| Alfvin |  Richard | Verilan |
| Aoyama |  Hideki | Panasonic Corporation |
| BEECHER |  PHILIP | Wi-SUN Alliance |
| Bynam |  Kiran | SAMSUNG |
| Callaway |  Edgar | Sunrise Micro Devices, Inc. |
| Cha |  Jaesang | SNUT |
| Dotlic |  Igor | National Institute of Information and Communications Technology (NICT) |
| Estrada |  Andrew | Sony Corporation |
| Fukui |  Kiyoshi | Oki Electric Industry Co., Ltd. |
| Gilb |  James | Pulse-LINK Inc. |
| Haapola |  Jussi | Centre for Wireless Communications / University of Oulu |
| Heile |  Robert | ZigBee Alliance |
| Hernandez |  Marco | National Institute of Information and Communications Technology (NICT) |
| Hiraga |  Ken | NTT |
| HOSAKO |  IWAO | National Institute of Information and Communications Technology (NICT) |
| Hui |  Bing | Electronics and Telecommunications Research Institute (ETRI) |
| Jang |  Yeong Min | Kookmin University |
| JOO |  SEONG-SOON | Electronics and Telecommunications Research Institute (ETRI) |
| Kato |  Shuzo | Tohoku University |
| Kim |  Junhyeong | Electronics and Telecommunications Research Institute (ETRI) |
| Kim |  Youngsoo | SAMSUNG |
| KINNEY |  PATRICK | Kinney Consulting LLC |
| Kivinen |  Tero | INSIDE Secure |
| Kohno |  Ryuji | YNU/CWC-Nippon |
| Kuerner |  Thomas | TU Braunschweig |
| Kumar |  Amarjeet | Procubed Inc. |
| Lee |  Moon-Sik | Electronics and Telecommunications Research Institute (ETRI) |
| Lee |  Myung | CUNY - City University of NY |
| Li |  Huan-Bang | National Institute of Information and Communications Technology (NICT) |
| maekawa |  itaru | Japan Radio Co., Ltd. |
| Matsumura |  Hiroyuki | Sony Corporation |
| McInnis |  Michael | The Boeing Company |
| Moskowitz |  Robert | HTT Consulting |
| Oshima |  Mitsuaki | Panasonic Corporation |
| P S Bhat |  Chandrashekhar | SAMSUNG |
| Perkins |  Charles | Futurewei Technologies |
| Powell |  Clinton | Powell Wireless Consulting, LLC |
| Rabarijaona |  Verotiana | National Institute of Information and Communications Technology (NICT) |
| Roberts |  Richard | Intel Corporation |
| Sato |  Noriyuki | Oki Electric Industry Co., Ltd. |
| Serafimovski |  Nikola | pureLiFi |
| Sihn |  Gyung Chul | Electronics and Telecommunications Research Institute (ETRI) |
| Sturek |  Don | Silver Spring Networks Inc. |
| toshimitsu |  kiyoshi | TOSHIBA Corporation |
| Uysal |  Murat | Ozyegin University |
| Verso |  Billy | DecaWave |
| Winkel |  Ludwig | Siemens AG |
| Zhu |  Chunhui | Samsung Information Systems America, Inc. |