**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |
| --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title |  |
| Date Submitted | [24 January 2014] |
| 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 Los Angeles, California] |
| 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 #87**

**Hyatt Regency Century Plaza**

**January 20 - 24, 2014**

**Monday, 20 Jan 2014**

**8:03** 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 – will be at the Lucky Strike bowling alley
* Straw Poll of new attendees: 5

**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.

802.15 WG chair read IEEE anti-trust policy.

**8:13** Financial report by Jon Rosdahl (CSR) docs 11-14-0084-02, 15-14-0030-02

Net Worth

**Sept 1, 2013 – $409,424.40**

IEEE account: $386,061.74 +85.67-$21,515.00+88.07+83.64 = $364,804.12

Face-to-Face: $193,000.31 - $146,358.20 -$1,982.86 - $39.00 = $44,620.25

**Oct 31, 2013 – $409,466.33**

IEEE account: $364,804.12 + $80.96 = $364,885.08

Face-to-Face: $44,620.25 – 39 + 9600 – 147.75 = $54,033.50

**Dec 31, 2013 – $597,980.08**

IEEE account: $364,885.08 + 83.67 + 80.99 + 21,515 -25 = $386,539.74

Face-to-Face: $44,581.25 + 95,700 – 32,306.83 +104,850 – 10,836.33 = $211,440.34

**Century City, CA - January 2014**

Proposed Budget Estimated Budget (Nov 2013) (Jan 2014)

* Registration Income: $200,250 $268,050
	+ Hotel Credits $0 $ 7,600
	+ Registrations 300 402
	+ Meeting Expense Estimate: $209,563 $275,753
	+ AV $17,000 $17,000
	+ Financial Fees $10,513 $ 13,902
	+ Meeting Planner $38,000 $ 45,750
	+ Food & Beverage $85,000 $122,000
	+ Network Services $36,000 $ 57,000
	+ Social $18,000 $ 28,500
	+ Shipping $ 6,500 $ 4,000
	+ Misc $ 1,400 $ 1,600
* Surplus/(Deficit) $(9,313) $ (103)

**8:17** Wireless and IMAT announcements by Rick Alfvin (15-14-035-00)

**8:19** Review future sessions

* March 16-21, 2014, China World Hotel, Beijing PRC, 802 Plenary Session.
* May 11-16, 2014, Hilton Waikoloa Village, Big Island, HI, USA, 802 Wireless Interim Session\*
* July 13-18, 2014, Grand Hyatt Manchester, San Diego, CA, USA, 802 Plenary Session.
* September 14-19, 2014, Hilton Athens, Athens, Greece, 802 Wireless Interim Session\*
* November 2-7, 2014, Grand Hyatt San Antonio, San Antonio, TX, USA, 802 Plenary Session
* January 18-23, 2015 Hyatt Regency Atlanta, Atlanta, GA, USA Interim\*
* March 8-13, 2015 Barcelona, Spain (TBC) Plenary
* May 10-15, 2015 TBC - Possibly Hyatt Regency Vancouver Interim\*

**8:25 Working Group Updates**

* 802.11 by B Kraemer, Marvell; (11-13-1485-00): 330 voters, 27 potential voters

TGREVmc - Revision

TGac - VHT <6GHz – in Sponsor Ballot

TGaf- TVWS - in Letter Ballot

TGah- Sub 1GHz

TGai – Fast Initial Link Setup (FILS)

TGaj – China 45& 60 GHz bands (CMMW)

TGak – General Link (GLK)

TGaq – Pre-Association Discovery (PAD)

**Standing Committee**

WNG - WIRELESS NEXT GENERATION

ARCHITECTURE

JTC1

REGULATORY

**Study Group**

High efficiency Wireless LAN (HEW)

802.15 by B Heile (134 voters, 12 nearly voters)

TG4m: TVWS (submitted to RevCom)

TG4n: CMB (getting ready for letter ballot)

TG4p: RCC (submitted to RevCom)

TG4q: ULP (Ultra Low Power) – hearing proposals

TG8: PAC (Peer Aware Communications) working on draft document

TG9: KMP (Key Management Protocol) draft development

TG10-L2R: Layer 2 Routing, collaborating with 802.1

SG 3d 100G 100Gbps THz

SG-SRU (Spectrum Resource Utilization)

SG 4r Distance Measurement Technologies (DMT)

SG 4s EU Band Coordination

SG 7a Optical Camera Communications

IG 6tisch

IG Dependability

802.16 by Roger Marks (12 voters)

TG: 802.16q (heterogeneous)

TG: 802.16r (small cell backhaul)

TG: 802.16.3 (metrology)

Note: SDN open meeting at AM1, Thursday

802.18 by M Lynch (10 voters)

* FCC: review of RF exposure, 5 GHz discussion, etc.
* ITU-R : response to use of radio in smart grid

802.19 S Shellhammer (Qualcomm) (44 voters)

* Coexistence in TV whitespace: sponsor ballot passed (91% approval), resolving 102 comments

802.21 Subir Das (20 voters, 2 nearly)

* TG21c – single radio handover – sponsor ballot (98% approval, no comments)
* TG21d – multicast group management – resolving comments from letter ballot
* TG21m – revision project
* TG21.1 – media independent services and use cases – just started

802.22 Aperva Mody (34 voters)

* TG22.1 revision project
* SG22.2 spectrum occupation sensing
* TG22b – enhancement for broadband services and monitoring applications

802.24 James Gilb (39 voters)

* Response to ITU-R question 236r1
* Discuss scope expansion, e.g. nuts and bolts of IoTs

OmniRAN ECSG by Max Riegel (hosted by 802.1)

* Technical aspects
* Coordination aspects

**9:00** Joint meeting adjourned

**9:30** B Heile (ZigBee Alliance), WG chair called the 802.15 WG plenary to order (15-13-0743-02)

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 0-5 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, to which there were no responses.

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

Approve/modify joint opening agenda (15-13-0743-03)

* Moved by J Gilb, seconded by A Astrin. Following neither discussion nor objection the agenda was approved.

Review and approve 802.15 WG minutes from the Dallas session (15-13-0661-00-0000)

* Moved by J Notor, seconded by J Gilb. Upon neither discussion nor objection the joint minutes were approved.

**9:41** Wireless Network Updates by Rick Alfvin (15-14-0035-00)

* 134 voters and 12 nearly voters
* Rick described the attendance requirements for the week, 13 meetings must be attended to obtain credit for this session

**9:47** WG recessed

**Wednesday 22 January 2014**

**802.15 mid-session plenary meeting**

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

**Review of the CSD** by James Gilb(IEEE 802 LMSC Operations Manual, v13 Revised November 18, 2013)

**802.24** update by J Gilb

* finished 236/1
* working on white paper this afternoon
* discussing expanding 802.24’s scope

**802.18** by J Notor

* OfCom consultation on 870 - 876 and 921 MHz (18-14-013)

**TG4p (PTC)** closing report by John Notor (15-14-0059-00)

**TG4m (TVWS)** by SangSung Choi

* finished, waiting for RevCom approval

**TG4n (CMB)** by Art Astrin

* getting draft ready for WG letter ballot

**TG4q (ULP)** by Shahriar Emami

* + hearing proposal updates

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

* finishing up framework doc

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

* working on the technical draft
* all KMPs are defined in the draft

**TG10 (L2R)** by C Powell

* generated doc for discussion with 802.1 joint meeting

**SG SRU** by Shoichi Kitazawa(15-13-0318-00)

* heard two presentations
* won’t request PAR approval until July

**SG100G** by T Kürner

* working on PAR and 5C for March approval

**SG15.4r** by D Eggert

* drafting PAR and 5C

**SG4s** by S Jillings

* discussions on whether TG is necessary

**SG7a** closing report by Yeong Min Jang (15-14-0062-00)

* won’t request PAR approval until July

**IG dep** by A Astrin

* in discussions

**IG**6tisch by P Kinney

* presented overviews of 6tisch and 802.15.4e

**SC Maintenance** by P Kinney

* discussed issues with 802.15.4 ACK timing
* adjourned until Beijing

**SC WNG** by P Kinney

* Two presentations:
	+ Augmented Reality standards, use cases and requirements: How can 802.15 contribute? by Christine Perey
	+ LnL Communications: Device Pairing Technology for Generation Z by Byung-Jae Kwak

**11:05** Recessed until Thursday at 16:00

**Thursday, 23 January 2014**

**18:30** 802.15 WG chair called the meeting to order (agenda 15-14-0743-02)

**18:33** 802.11 liaison report by Clint Chaplin (15-14-0090-00)

**18:39** 802.18 liaison report by John Notor (15-14-0074-00)

**18:42** TG4n (CMB) Closing Report by Art Astrin (15-14-0077-00)

**18:46** TG4q by Shariar Emami (15-14-0083-00)

**18:52** TG8 (PAC) by Myung Lee (15-14-0086-00)

**18:55** TG9 (KPM) by Peter Yee (15-14-0061-00)

**18:58** TG10 (L2R) by Clint Powell (15-14-0071-00)

**19:02** SGSRU by Shoichi Kitazawa (15-14-0064-00)

**19:05** SG100g by R Roberts (15-15-0058-00)

Motion: *request that the PAR and 5C contained in documents 15-13-0523-04 and 15-13-0522-03 (CSD modification to change the response of managed objects to Yes, item A), 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: Rick Roberts*

*Second: Clint Powell*

*Upon no discussion, the vote was taken with the results of 20/0/0, motion carries.*

**19:24** SG4r by B Rolfe (15-14-0079-00)

WG Motion:Motion: *request that the PAR and Five Criteria contained in documents* 15-14-0075-02 *and* 15-14-0076-02 *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 5C as needed to reflect EC discussion at its closing meeting.*

*Moved: Ben Rolfe*

*Second: Art Astrin*

*Upon no discussion, the vote was taken with the results of 25/1/0, motion carries*

**19:36** SG4s by S Jillings (15-14-0084-00)

**19:40** IGdep by A Astrin (15-14-0089-00)

**19:42** IG6tisch by Pat Kinney (15-14-0080-01)

**19:49** SCclosing report by Pat Kinney (15-14-0082-00)

**19:57** 802.24 by James Gilb

* Looking into increasing the scope to include IoTs

**20:01** Motion *to adjourn* was made by Clint Powell, seconded by Cristina Seibert, upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 109

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| Alfvin | Richard | Verilan |
| Ariyoshi | Masayuki | Advanced Telecommunications Research Institute International (ATR) |
| Astrin | Arthur | Astrin Radio |
| BEECHER | PHILIP | Wi-SUN Alliance |
| Beer | Frederik | University of Erlangen-Nuremberg, Fraunhofer IIS |
| Brown | Monique | M. B. Brown Consulting |
| Cai | Yunlong | Huawei Technologies Co. Ltd |
| Canchi | Radhakrishna | Kyocera Communications Inc. |
| Cha | Jaesang | Seoul National University of Science and Technology(Seoul Tech) |
| Chang | Soo-Young | California State University, Sacramento (CSUS) |
| Chang | Sung-Cheol | Electronics and Telecommunications Research Institute (ETRI) |
| Chaplin | Clint | Samsung Information Systems America, Inc. |
| Cheong | Minho | Electronics and Telecommunications Research Institute (ETRI) |
| Chilton | Paul | NXP Semiconductors |
| Choi | Sangsung | Electronics and Telecommunications Research Institute (ETRI) |
| De Ruijter | Hendricus | Silicon Laboratories |
| Diamond | Patrick | Semtech Ltd |
| Dotlic | Igor | National Institute of Information and Communications Technology (NICT) |
| EGGERT | DIETMAR | Atmel Corporation |
| Emami | Shahriar | Samsung Information Systems America, Inc. |
| Filin | Stanislav | National Institute of Information and Communications Technology (NICT) |
| Flammer | George | Silver Spring Networks Inc. |
| Fukui | Kiyoshi | Oki Electric Industry Co., Ltd. |
| Gilb | James | Tensorcom, Inc. |
| Gillmore | Matthew | Itron Inc. |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Gottlib | Elad | Silver Spring Networks Inc. |
| Hara | Shinsuke | Osaka City University (OCU) |
| Harrington | Timothy | WhereNet - Zebra ESG |
| Heile | Robert | ZigBee Alliance |
| Herbst | Thomas | Silver Spring Networks Inc. |
| Hernandez | Marco | National Institute of Information and Communications Technology (NICT) |
| Holcomb | Jay | Itron Inc. |
| Hong | Young-Jun | SAMSUNG |
| Iwaoka | Mitsuru | Yokogawa Electric Corporation |
| Jang | Yeong Min | Kookmin University |
| Jeong | Wuncheol | Electronics and Telecommunications Research Institute (ETRI) |
| Jillings | Steven | Semtech Corporation |
| Jung | Soojung | Electronics and Telecommunications Research Institute (ETRI) |
| Kamble | Keshav | IBM |
| Kang | Hyunduk | Electronics and Telecommunications Research Institute (ETRI) |
| Kasamatsu | Akifumi | National Institute of Information and Communications Technology (NICT) |
| Kato | Shuzo | Tohoku University |
| Kent | Jeritt | Analog Devices Inc. |
| Kim | Hyung-Jin | Electronics and Telecommunications Research Institute (ETRI) |
| Kim | Jaehwan | Electronics and Telecommunications Research Institute (ETRI) |
| Kim | Seokki | Electronics and Telecommunications Research Institute (ETRI) |
| KIM | SEON-AE |  |
| KIM | Soochang |  |
| Kim | Suhwook | LG ELECTRONICS |
| Kim | Youngsoo | SAMSUNG |
| KINNEY | PATRICK | Kinney Consulting LLC |
| Kitazawa | Shoichi | ATR Wave Engineering Laboratories |
| Kivinen | Tero | INSIDE Secure |
| Kojima | Fumihide | National Institute of Information and Communications Technology (NICT) |
| Korhonen | Jouni | Broadcom Corporation |
| Kuerner | Thomas | TU Braunschweig |
| Kwak | Byung-Jae | Electronics and Telecommunications Research Institute (ETRI) |
| Lee | Hyung-seok | Electronics and Telecommunications Research Institute (ETRI) |
| Lee | Jae-Ho | ETRI |
| Lee | Jae Seung | Electronics and Telecommunications Research Institute (ETRI) |
| Lee | Moon-Sik |  |
| Lee | Myung | CUNY - City University of NY |
| Lee | Sang Woon | NamSeoul Univ. |
| Li | Huan-Bang | National Institute of Information and Communications Technology (NICT) |
| Lynch | Michael | Nortel Networks |
| Mc Laughlin | Michael | DecaWave |
| Melet | Patrick | Landis Gyr Group Worldwide |
| Mori | Kenichi | Pansonic Corporation |
| Moskowitz | Robert | Verizon |
| NA | ILJU | SAMSUNG |
| nair | jinesh | SAMSUNG |
| Naito | Yuji | Casio Computer Co., Ltd. |
| Notor | John | Lilee Systems |
| Ogawa | Hiroyo | Association of Radio Industries and Businesses (ARIB) |
| Ohba | Yoshihiro | TOSHIBA Corporation |
| Park | Seung-Hoon | Samsung |
| Park | Taejoon | Electronics and Telecommunications Research Institute (ETRI) |
| Perkins | Charles | Futurewei Technologies |
| Powell | Clinton | PWC, LLC |
| Powell | Richard | Microsemi Corporation |
| P S Bhat | Chandrashekhar | SAMSUNG |
| Rabarijaona | Verotiana | National Institute of Information and Communications Technology (NICT) |
| Ramasastry | Jayaram | Silver Spring Networks Inc. |
| Randall | Karen | NSA/IAD |
| Roberts | Richard | Intel Corporation |
| Rolfe | Benjamin | Blind Creek Associates |
| Ryu | Cheol | Electronics and Telecommunications Research Institute (ETRI) |
| Salazar Cardozo | Ruben | Landis Gyr Group Worldwide |
| Sasaki | Shigenobu | Niigata University |
| Sato | Noriyuki | Oki Electric Industry Co., Ltd. |
| Schwoerer | Jean | France Telecom |
| Shimada | Shusaku | Schubiquist Technologies Guild |
| Shimizu | Masashi | Nippon Telegraph and Telephone Corporation (NTT) |
| Shin | ChangSub | Electronics and Telecommunications Research Institute (ETRI) |
| Song | Chunyi | National Institute of Information and Communications Technology (NICT) |
| Stuebing | Gary | Cisco Systems, Inc. |
| Takai | Mineo | Space-Time Engineering |
| Verso | Billy | DecaWave |
| Villardi | Gabriel | National Institute of Information and Communications Technology (NICT) |
| Warren | Mial | TriLumina |
| Xing | Tao | Wuxi Sensingnet research and industrialization Institute |
| Yaita | Makoto | Microsystem Integration Laboratories NTT |
| Yamamoto | Takashi | Sumitomo Electric Industries, LTD |
| Yee | Peter | NSA/IAD |
| Zeng | Yu | China Telecom |
| ZHAO | Bingxuan | Niigata University |
| Zhu | Chunhui | SAMSUNG |