**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 | [18 May 2012] |
| 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 Atlanta, Georgia] |
| 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 #80**

**Hyatt Regency Grand Champions, Palm Springs, California, USA**

**September 16-21, 2012**

**Monday, 17 September 2012**

**8:03** 802.11, 802.15, 802.16, 802.18, 802.19, 802.21, and 802.22 Chairs called the joint meeting to order. IEEE 802.15 attendance is included as Annex A.

General announcements:

* No photography
* Social
* Straw Poll of new attendees: 0

**8:06** IEEE patent policy

802.11 WG vice chair read the IEEE-SA instructions for the WG chair and displayed the four slides explaining patent policy and informed the attendees that additional information could be found on the PatCom web site.

Vice 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 in the appropriate WG; there were no responses

802.11 WG vice chair read IEEE anti-trust policy.

**8:11** Financial report by Jon Rosdahl (11-12-1000-00, 15-12-0492-00)

Net Worth

* **July 1, 2012 – $433,424.66**
	+ IEEE account: $391,948.68 + $462.69 = $392,411.37
	+ Face-to-Face: $194,868.70+$45,300-$30,209.32+$2,400.09-$171,346.18 = $41,013.29
* **Sept 1, 2012 – $562,733.66**
	+ IEEE account: $392,411.37 + $266.67 = $ 392,678.04
	+ Face-to-Face: $41,013.29+$52,500-$7,816.99 +$106,650 -$22,290 = $170,055.62

Indian Wells 2012

Proposed Current

* **Registration Income: $207,900 203,550**
	+ Hotel Credits $0 $903.00
	+ Registrations 325 309
	+ **Meeting Expense Estimate: $215,565 $202,733**
	+ AV $15,600 $12,400
	+ Financial Fees $11,995 $11,508
	+ Meeting Planner $39,525 $39,025
	+ Food & Beverage $82,750 $82,750
	+ Network Services $42,000 $37,700
	+ Social $14,095 $13,500
	+ Shipping $ 7,250 $ 4,750
	+ Misc $ 1,350 $ 1,100
* **Surplus/(Deficit) $(7,665) $1,721**

**8:14** Wireless and IMAT announcements by Rick Alfvin (15-12-019-04)

**8:16** Review future sessions

* November 11-16, 2012, Grand Hyatt San Antonio, San Antonio, TX, USA
* January 13-18, 2013, Hyatt Regency Vancouver, BC, CA, *802 Wireless Interim Session*\*
* March 17-21, 2013, Caribe Royale, Orlando, FL, USA, *802 Plenary Session*
* May 12-17, 2013, Hilton Waikoloa Village, Big Island, HI, USA, *802 Wireless Interim Session*\*
* July 14-19, 2013, Geneva*, 802 Plenary Session*
* September 15-20, 2013, Nanjing China, *802 Wireless Interim Session*\*
* November 10-15, 2013, Hyatt Regency Reunion, Dallas, TX, USA, *802 Plenary Session*
* January 19-24, 2014, Hyatt Century Plaza, Los Angeles, CA, USA, 802 Wireless Interim Session\*

**8:19 Working Group Updates**

* 802.11 by J Rosdahl (CSR): 295 voters, 43 potential voters

TGREVmc - REVISION

TGaa - VIDEO TRANSPORT

TGac - VHT L6

TGad – VHT60

TGaf- TVWS (passed WG LB, working on comments)

TGah- S1G

TGai – FILS

TGaj – CMMW (not meeting this week, but next week in Beijing)

**Standing Committee**

WNG - WIRELESS NEXT GENERATION (2 meetings)

ARCHITECTURE

JTC1 (not meeting this week)

SMARTGRID (now replaced with 802.24 meeting on Tuesday)

REGULATORY (looking at m8801 and m1450)

802.15 by B Heile (145 voters, 18 nearly voters)

TG4j: MBAN (done with WG ballot, ready for Sponsor)

TG4k: LECIM (passed WG LB, comment resolution)

TG4m: TVWS

TG4n: CMB

TG4p: PTC

TG8: PAC (Peer Aware Communications)

TG9: KMP (Key Management Protocol)

SG4q: ULP (Ultra Low Power amendment)

IG-Layer 2 Routing

802.16 by Roger Marks (46 voters, 802.1.6-12-0574)

Maintenance: 16r3 and 16.1-2012

Grid: 16n, 16.1a (sponsor ballot comment resolution)

M-M: 16p, 16.1b

SG: 802.16q (heterogeneous)

SG: 802.16.3 (metrology)

802.18 by Jon Notor

* no documents on agenda

802.19 Steve Shellhammer (Qualcomm) (50 voters)

* confirmation vote on new TG1 chair

802.21 Subir Das (28 voters)

* TG21c – single radio handover – finalize draft document
* TG21d – multicast group management – finalize use cases and requirements document, issue a CFP

802.22 Mody (33 voters)

* 802.22.2 Std for Recommended practice of deployment of 802.22 systems expected completion is Dec 2012
* TGa – Enhanced MIBS
* TGb - Enhanced Broadband Services and Monitoring Applications
* SG – advanced beaconing

**8:48** Joint meeting adjourned

**9:31** B Heile (ZigBee Alliance), WG chair called the 802.15 WG plenary to order (15-12-0444-03)

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 anti-trust rules and obligations.

Approve/modify joint opening agenda (15-12-0444-03-0000)

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

Review and approve 802.15 WG minutes from the San Diego session (15-12-0355-00-0000)

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

**9:38** Wireless Network Updates by Rick Alfvin (15-12-019-04)

* 145 voters and 18 nearly voters
* Rick described the attendance requirements for the week, 13 meetings must be attended to obtain credit for this session

**9:44** WG recessed

**Wednesday 19 Sep 2012**

**802.15 mid-session plenary meeting**

**10:31** Bob Heile called the meeting to order.

**802.18** by J Notor

* Voting tomorrow on 3 inputs from 802.16
* Voting tomorrow on 2 inputs from 802.11

**TG4j (MBAN)** by Ray Krasinski

* No new comments and no remaining “no” voters

Move that *the Working Group request EC unconditional approval to start Sponsor Ballot of IEEE 802.15.4j document d4802-15-4j\_Draft\_Standard.pdf*

Moved: Ray Krasinski

Second: Rick Alfvin

Vote result was 30/0/0, motion carries

Move that *802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the Sponsor Ballot of 802.15.4j with the following membership: Suhwook Kim, Dave Evans, Shannon Park, Paul Chilton, Benjamin Rolfe and Raymond Krasinski. The 802.15.4j BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the 802.15.4j 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 7 days in advance.*

Moved: Ray Krasinski
Second: Art Astrin

* Upon no objection the motion carries with unanimous consent

**TG4k (LECIM)** by Pat Kinney

* finishing up comment resolution, 25 comments yet to be resolved

**TG4m (TVWS)** by SangSung Choi

* merging proposals were heard
* expect a vote on the baseline this week

**TG4n (CMB)** by Art Astrin

* four presentations
* working on call for proposals

**TG4p (PTC)** by Jon Adams

* not present

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

* working on the draft

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

* no meetings yet

**SG4q** by Shahriar Emami

* finished PAR and 5C documents

**L2R** by C Powell

* Working on logistics

**SC Maintenance** by P Kinney

* Attendees approved the addition of the maintenance process to the Operations Manual.

Motion: *to approve document 15-10-0235-09-000 as the Operations Manual for 802.15 WG*

Moved by Pat Kinney, seconded by Michael McInnis

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

* Attendees recommend the following submission to accepted and be considered during the next revision of 802.15.4.

Document's title (include revision/year): 802.15.4e-2012 Part 15.4: Low-Rate Wireless Personal Area Networks (LR-WPANs)

Amendment 1: MAC sublayer

Clause number: 5.2.4.6 through 5.2.4.22

Page: 84 - 94

Issue, concern, or question:  In some of the IE descriptions it is not clear that the figures and text discuss only the IE content fields, excluding the IE descriptor. This has caused many questions. It is said in the intro text to 5.2.4 (so we didn't do it wrong) but it could be clearer.  Also some places in captions we have "element" and other places "IE".

Proposed change:  Add "content" to IE format figures (example, figure 48t "Format of the LE CSL IE content"); use "IE" in caption instead of "element" consistently;

Impact on existing equipment:  None, changes are editorial.

**SC WNG** by P Kinney

* one presentation:
	+ 15-12-0495-00-wng0-secure-key-storage-and-true-random-number-generation by Rene Struik

**AoB** none

**10:59** Recessed until Thursday at 18:30

**Thursday, 20 Sep 2012**

**18:30** 802.15 WG chair called the meeting to order (agenda 15-12-0444-04)

* Chair informed group that the ETSI letter of understanding was up for renewal

**18:37** TG4j (MBAN) Closing Report by Ray Krasinski (15-12-0542-00)

**18:39** TG4k (LECIM) Closing Report by Pat Kinney (15-12-0546-00)

* Move that *802.15 WG approve the formation of a Ballot Resolution Committee (BRC) for the WG balloting of the 802.15.4k draft standard with the following membership: Shu Kato, Pat Kinney, Ben Rolfe, Cristina Seibert, Monique Brown, Steve Jillings, Tuncer Baykas, Wun-Cheol Jeong, David Howard, James Gilb, Chang Sub Chin, MI-Kyung Oh, and Youcy Yang. The 802.15.4k BRC is authorized to approve comment resolutions and to approve the start of recirculation ballots of the 802.15.4k 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 7 days in advance.*
	+ Moved by Pat Kinney; Seconded by Jon Adams
	+ 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 d1P802-15-4k\_Draft\_Standard.pdf, pending the completion and inclusion of edits in accordance with document 15-12-0409-07-004k, to Sponsor Ballot.*
	+ Moved by Pat Kinney, seconded by Ben Rolfe.
	+ Upon neither discussion nor objection the motion carries with unanimous consent

**18:46** TG4m (TVWS) Closing Report by Phil Beecher (15-12-0531-02)

**18:50** TG4n (CMB) Closing Report by Art Astrin (15-12-0537-00)

**18:52** TG4p (PTC) Closing Report by Jon Adams (15-12-0532-01)

**18:54** TG8 (PAC) by Myung Lee (15-12-0551-00)

**18:55** TG9 (KPM) by Peter Yee (15-12-0528-02)

**18:58** SG4q by Shariar Emami (15-12-0552-01)

Motion:  *request that the PAR and 5C contained in documents 15-12-0386-04 and 15-12-0387-042, respectively, be approved by the 802.15 WG and that the 802 EC be requested to forward the PAR to NesCom. The 802.15 working group chair and technical editor are authorized to appropriately  complete the compatibility section of the 5C to reflect what is contained in the PAR and make any other editorial changes as needed.*

* Moved by Shahriar Emami and seconded by Mike Lynch.
* Vote was taken with the result of 26/0/1, motion carries

**19:01** L2R by Clint Powell (15-12-0544-00)

**19:03** SCWNG closing report by Pat Kinney (15-12-0550-00)

**19:05** SCMan closing report by Pat Kinney (15-12-0550-00)

**19:07** 802.11 liaison report by Clint Chaplin (15-12-543-00)

**19:20** 802.18 liaison report by John Notor (15-12-541-01)

**19:22** 802.24 by James Gilb (24-12-017)

**19:30** Motion *to adjourn* was made by Ben Rolfe, seconded by C Powell, upon no objection the motion carried, this session is adjourned.

**Annex A** Attendance = 98

|  |  |  |
| --- | --- | --- |
| **Last Name** | **First Name** | **Affiliation** |
| **Adams** | **Jon** | **Lilee Systems** |
| **Alfvin** | **Richard** | **Verilan** |
| **Astrin** | **Arthur** | **Astrin Radio** |
| **Baykas** | **Tuncer** | **Tohoku University** |
| **Beecher** | **Philip** | **Wi-SUN Alliance** |
| **Bottomley** | **Andrew** | **Microsemi Corporation** |
| **Brown** | **Monique** | **M. B. Brown Consulting** |
| **Bynam** | **Kiran** | **SAMSUNG** |
| **Canchi** | **Radhakrishna** | **Kyocera Communications Inc.** |
| **Chang** | **Kuor-Hsin** | **Elster Solutions** |
| **Chang** | **Soo-Young** | **California State University, Sacramento (CSUS)** |
| **Chang** | **Sung-Cheol** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Chaplin** | **Clint** | **SAMSUNG** |
| **Chen** | **Ren-Jr** | **Industrial Technology Research Institute (ITRI)** |
| **Cheong** | **Minho** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Choi** | **Jinsoo** | **LG ELECTRONICS** |
| **Choi** | **Sangsung** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **CHUN** | **JINYOUNG** | **LG ELECTRONICS** |
| **De Ruijter** | **Hendricus** | **Silicon Laboratories** |
| **Dotlic** | **Igor** | **National Institute of Information and Communications Technology (NICT)** |
| **DU** | **JiaDong** | **China Academy of Telecommunication Research (CATR)** |
| **DUNN** | **BRIAN** | **Semtech Ltd** |
| **Emami** | **Shahriar** | **Samsung Information Systems America, Inc.** |
| **Evans** | **David** | **Philips Electronics** |
| **Filin** | **Stanislav** | **National Institute of Information and Communications Technology (NICT)** |
| **Finn** | **Norman** | **Cisco Systems, Inc.** |
| **Flammer** | **George** | **Silver Spring Networks Inc.** |
| **Fukui** | **Kiyoshi** | **Oki Electric Industry Co., Ltd.** |
| **Funada** | **Ryuhei** | **National Institute of Information and Communications Technology (NICT)** |
| **Gilb** | **James** | **Tensorcom, Inc.** |
| **Gillmore** | **Matthew** | **Itron Inc.** |
| **Gottlib** | **Elad** | **Silver Spring Networks Inc.** |
| **Hara** | **Shinsuke** | **Osaka City University (OCU)** |
| **Heberling** | **Allen** | **INDEPENDENT** |
| **Heile** | **Robert** | **ZigBee Alliance** |
| **Herbst** | **Thomas** | **Silver Spring Networks Inc.** |
| **Hernandez** | **Marco** | **National Institute of Information and Communications Technology (NICT)** |
| **Holcomb** | **Jay** | **Itron Inc.** |
| **Howard** | **David** | **On-Ramp Wireless, Inc.** |
| **Hwang** | **Jung-Hwan** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Iwaoka** | **Mitsuru** | **Yokogawa Electric Corporation** |
| **Jeon** | **Young-Ae** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Jillings** | **Steven** | **Semtech Corporation** |
| **Jin** | **Sunggeun** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Kang** | **Hyunduk** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Kang** | **Sungweon** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Kato** | **Shuzo** | **Tohoku University** |
| **Kent** | **Jeritt** | **Analog Devices Inc.** |
| **Kim** | **Jeongki** | **LG ELECTRONICS** |
| **Kim** | **Jinkyeong** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Kim** | **Youngsoo** | **SAMSUNG** |
| **KINNEY** | **PATRICK** | **Kinney Consulting LLC** |
| **Kojima** | **Fumihide** | **National Institute of Information and Communications Technology (NICT)** |
| **Krasinski** | **Raymond** | **Philips Electronics** |
| **Lee** | **Jae Seung** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Lee** | **Jae-Ho** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Lee** | **Myung** | **CUNY - City University of NY** |
| **Lee** | **Wookbong** | **LG ELECTRONICS** |
| **Lee Ph.D** | **Hyeong Ho** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Li** | **Huan-Bang** | **National Institute of Information and Communications Technology (NICT)** |
| **Li** | **Liang** | **Vinno Technologies Inc.** |
| **Lin** | **Che-Chun** | **ITRI** |
| **McInnis** | **Michael** | **The Boeing Company** |
| **Mori** | **Kenichi** | **Pansonic Corporation** |
| **Moskowitz** | **Robert** | **Verizon** |
| **Mulligan** | **Geoff** | **Proto6** |
| **Notor** | **John** | **Silver Spring Networks Inc.** |
| **Oh** | **Mi-Kyung** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Ohba** | **Yoshihiro** | **TOSHIBA Corporation** |
| **Park** | **Giwon** | **LG ELECTRONICS** |
| **Park** | **Seung-Hoon** | **Samsung** |
| **Park** | **Taejoon** | **Electronics and Telecommunications Research Institute (ETRI)** |
| **Powell** | **Clinton** | **PWC, LLC** |
| **Powell** | **Richard** | **Microsemi Corporation** |
| **Pyo** | **Chang-Woo** | **National Institute of Information and Communications Technology (NICT)** |
| **Rajan** | **Reghu** | **Zarlink Semiconductor, Inc.** |
| **Ramasastry** | **Jayaram** | **Silver Spring Networks Inc.** |
| **Reede** | **Ivan** | **AmeriSys Inc.** |
| **Roberts** | **Richard** | **Intel Corporation** |
| **Rolfe** | **Benjamin** | **Blind Creek Associates** |
| **Ryu** | **Cheol** | **MISSING AFFILIATION - No Attendance Credit** |
| **Sasaki** | **Shigenobu** | **Niigata University** |
| **Sato** | **Noriyuki** | **Oki Electric Industry Co., Ltd.** |
| **Shah** | **Kunal** | **Silver Spring Networks Inc.** |
| **Shao** | **Huairong** | **Samsung Information Systems America, Inc.** |
| **SHIN** | **CheolHo** | **Electronics and Telecommunications Research Instititute (ETRI)** |
| **Song** | **Chunyi** | **National Institute of Information and Communications Technology (NICT)** |
| **Sum** | **Chin-Sean** | **National Institute of Information and Communications Technology (NICT)** |
| **Victor** | **Dalton** | **Silver Spring Networks Inc.** |
| **Villardi** | **Gabriel** | **National Institute of Information and Communications Technology (NICT)** |
| **Wang** | **Xiang** | **Wuxi SensingNet Industrialisation Research Institute** |
| **Yang** | **Yang** | **Wuxi SensingNet Industrialisation Research Institute** |
| **Yee** | **Peter** | **NSA/IAD** |
| **Yoon** | **Chanho** | **Electronics and Telecommunications Research Instititute (ETRI)** |
| **Zeira** | **Eldad** | **InterDigital, Inc.** |
| **ZHAO** | **Bingxuan** | **Niigata University** |
| **Zhao** | **Mu** | **Huawei Technologies Co. Ltd** |
| **Zhou** | **Mingtuo** | **National Institute of Information and Communications Technology (NICT)** |