**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **IEEE 802.15 Positive Train Control Study Group Jacksonville Meeting Minutes** |
| Date Submitted | [January 30, 2012] |
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| Re: | [If this is a proposed revision, cite the original document.][If this is a response to a Call for Contributions, cite the name and date of the Call for Contributions to which this document responds, as well as the relevant item number in the Call for Contributions.][Note: Contributions that are not responsive to this section of the template, and contributions which do not address the topic under which they are submitted, may be refused or consigned to the “General Contributions” area.] |
| Abstract | Meeting minutes for the Jacksonville Interim. |
| Purpose | [Description of what the author wants P802.15 to do with the information in the document.] |
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Minutes for IEEE 802.15 Positive Train Control Study Group

Jacksonville Interim Meeting

15-20 January 2012

Jon Adams, chair and acting secretary

Meeting Agenda

* Completion and Approval by the 802.15 Working Group of the PTC Study Group PAR and 5C
* Presentation of these documents at the Midweek 802.15 Plenary
* Approval of the documents at the Thursday evening closing plenary

Monday PM1

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| 1 |  | Monday PM1 - Agenda/Objectives/Minutes/PAR/5C Review |
| 1.1 |  | OPEN | Adams | 5 | 1:30 PM |
| 1.2 |  | Discuss Meeting Objectives/Opening Report and Agenda | Adams | 20 | 1:35 PM |
| 1.3 |  | Approval of Agenda | Adams | 10 | 1:55 PM |
| 1.4 |  | Read IEEE-SA Stds. Board Bylaws on Patents in Std's. & Guidelines | Adams | 5 | 2:05 PM |
| 1.5 |  | Approval of Atlanta Minutes | Adams | 5 | 2:10 PM |
| 1.6 |  | PAR/5C Review | Adams | 75 | 2:15 PM |
| 1.7 |  | Recess | Adams | 0 | 3:30 PM |

Attendance

Lee Armstrong (US DOT), Carl Kain (Noblis), Steve Jillings (Semtech), Bob Moskowitz (Verizon), Brian Kiernan (Interdigital), Tuvo Kivinon (Authentec), Mike McInnis (Boeing), Chonggang Wang (Interdigital), Ibrahim Muftic (Parsons Brinckerhoff), Ray Krasinski (Philips), Dave Evans (Philips), Art Astrin (Astrin Radio), Paul Chilton (NXP), Radhakrishna Chanchi (Kyocera), Shusaku Shimada (Yokogawa), Jon Adams (Lilee Systems).

Item 1.1, 1.2: Document 15-12-0026-00-0ptc PTC Study Group Opening Session

Item 1.3: Motion to approve agenda as published. Moved and approved.

Item 1.4: Went through P&P and Patent slides. No objections or raised hands noted.

Item 1.5: Motion to approve meeting minutes from Atlanta. Moved and approved.

Item 1.6: Adams went through PAR document, focusing on Scope and Purpose paragraphs. Further editing and tweaking, removed some specificity and broadened potential usage, such as: upping speed to 600km/hr, based upon SCNF (France) non-revenue test runs of TGV to 576 km/hr; Tone down US-centric requirements to ensure that eventual spec can be used more broadly.

Monday PM2

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| **2** | **Monday PM2 - PAR/5C Comment Review and Editing, Informative Presentations** |
| 2.1 | OPEN | Jon Adams | 5 | 4:00 PM |
| 2.2 | Presentations | All | 45 | 4:05 PM |
| 2.3 | PAR/5C Comment Resolution | Jon Adams | 70 | 4:50 PM |
| 2.4 | Recess | Jon Adams | 0 | 6:00 PM |

Item 2.2: Informational presentation by J. Adams (Lilee Systems) 15-12-0029-01-0ptc

216-222 MHz Spectrum Considerations. Overview of the licensing rules for the various frequency band segments in the 6 MHz of spectrum targeted by all US Class 1 and many US transits for deployment of PTC sytems. US FCC Part 80, 90, 95 and 97 rules.

Item 2.3: Continued editorial work on PAR and 5C documents. Bob Heile (Chair 802.15) was in the room, helped out, suggested we add another session for last minute work on both documents for Tu PM2. Group concurred. Adams arranged with R Alfvin to add another session.

Tuesday PM2

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| **3** | **Tuesday PM2 - PAR/5C Comment Review and Editing** |
| 3.1 | OPEN | Jon Adams | 5 | 4:00 PM |
| 3.2 | PAR/5C Comment Resolution | Jon Adams | 115 | 4:05 PM |
| 3.3 | Recess | Jon Adams | 0 | 6:00 PM |

Attendance

Qing Li (Interdigital), Radhakrishna Canchi (Kyocera), Ed Callaway (Sunrise Micro), Ibrahim Muftic (Parsons Brinckerhoff), Tuvo Kivinon (Authentec), Jeritt Kent (Analog Devices), Bob Moskowitz (Verizon), Steve Jillings (Semtech), Brian Kiernan (Interdigital), Amith Chincholi (Interdigital), James Gilb (Tensorcom), Paul Nickolich (YAS), Jon Rosdahl (CSR), Art Astrin (Astring Radio), Bob Heile (ZigBee), Jon Adams (Lilee Systems)

Item 3.2: Final tweaks on PAR and 5C documents. Reduced purpose statement, reorganized a bit. Comments include that standard could be adapted in other regions as time goes on. Tetra (narrowband digital voice radio solution) is used in Europe in high-mobility environments, not to these speeds though. Get rid of “variety of frequency bands” statement, can be a perceived as too broad or indeterminate. Add “above 1W” for power requirements to signal that this is not necessarily for typical unlicensed bands. Raise upper frequency limit to 6GHz, not that anyone will probably use it there, but there are known uses of train monitoring , control and data transfer solutions in the 2.4 and 5.x GHz bands, and China maglev apparently uses 33GHz for a data link. Is expected that majority of PTC applications will take place in the sub-1GHz band, though. Up data rate requirement to 1Mb/s, higher data rates can mean shorter data packets, reduced impact from fade. Current solutions are generally 9.6 to 30kb/s, leaves plenty of headroom for future expansion. Also, shorter packets mean less occupied channel time, means more potential to share limited spectrum.

Motion made to approve PAR and 5C documents as drafted: Moved and approved, 7-0-0.

Wednesday PM1

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| **4** | **Wednesday PM1 - Informative Presentation and Next Steps** |
| 4.1 | OPEN | Jon Adams | 5 | 1:30 PM |
| 4.2 | Presentations | Muftic | 60 | 1:35 PM |
| 4.3 | Next Steps | Jon Adams | 25 | 2:35 PM |
| 4.4 | Recess | Jon Adams | 0 | 3:00 PM |

Attendance

Jon Adams (Lilee Systems), Ibrahim Muftic (Parsons Brinckerhoff), Ludwig Winkel (Siemens), Tevo Kivanon (Authentec), Ray Krasinski (Philips), Dave Evans (Philips), Chonggang Wang (Interdigital), Jiadong Du (China Academy of Telecommunications Research), Amith Chincholi (Interdigital), Liang Li (Vinnotech), Rick Roberts (unk)

Agenda changed to reflect approval of PAR/5C documents by IEEE 802.15 Working Group at midweek plenary where motion to approve was made by Jon Adams (Lilee Systems), seconded by Mike McInnis (Boeing), and approved 52-0-1. Due to this, there was no more work required on PAR/5C documents at this meeting. Congratulations to all who have participated over the past several months to make this happen!

At this morning’s Task Group chair meeting, Heile suggested that PTC have 5 sessions at the March Plenary to deal with any comments that come in from either other TGs or WGs.

Item 4.2: Response to CfA by I. Muftic (Parsons Brinckerhoff) 15-12-0053-01-0ptc

“Global Overview of Existing Radio Communications Systems used for Positive Train Control”

Presentation on and insight into other wireless communications used worldwide for train control. Discussion was made of the meaning of the word “positive” and how it is differentiated from other train control systems.

Discussion was made of value of direct connection from wayside to locomotive/train as opposed to indirect connection via network infrastructure point.

Suggestion was made to create informative section of document to describe and define these terms to make it easier for all to be on the same page. Also, refer to US Law as appropriate for definitions and requirements.

Item 4.3: Next Steps. Extended CfA period to end of week before March plenary meeting.

Now that WG has approved PAR and 5C, B Heile will register it in the electronic system to put it on calendar for IEEE 802 Executive Committee next meeting in February. Assuming approval there, then on opening day (Mon 12 March) of plenary, will be opened to all 802 WGs for review and comment by end of day Tuesday 13 March, and all IEEE organizations by end of day Wed 14 Mar. Any required edits must be incorporated by end of day Wed. Final will go to NesCom (New Standards Committee) for their review and approval on March 28. Assuming all goes to plan, task group will officially begin on opening day of May Interim meeting in Atlanta.

Wednesday PM2

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| **5** | **Wednesday PM2 - Final edits on PAR/5C, Next Steps** |  |  |  |
| 5.1 | OPEN | Jon Adams | 5 | 4:00 PM |
| 5.2 | Technical Guidance Document | Jon Adams | 30 | 4:05 PM |
| 5.3 | future schedule | Jon Adams | 30 | 4:35 PM |
| 5.4 | Close | Jon Adams | 0 | 5:05 PM |

 Item 5.2: Several participants provided good insight on drafting of Technical Guidance or Technical requirements document, wait until first meeting of approved TG before asking for final approval of document, but that work on a draft can be hashed out in calls up until then.

Discussion of upcoming schedule for telecons. Weekly schedule more or less as before, will poll group to look for time a little earlier in the day (current time is 1600 US Eastern).

Discussion was made on schedule for development of draft technical proposal, depends to some extent on how many proposals come in, and if those proposers can merge their works amicably. Can speed up process and allow work to move quickly toward single approach.

Looks like Tech Editor can be appointed in Q3, as baseline proposal gets completed. Tech editor is a volunteer position like all others, hopefully TE has a copy of framemaker. Others commented that Microsoft Word has been increasingly used for specification writing, works good or not so good depending on size of document before it starts becoming difficult to adequately maintain document. Could proceed all the way through finished draft spec, approve a Word version, then let IEEE tech editor convert to Framemaker, read to ensure no problems, no further approvals required.

Letter ballots take about 45 days, recirculations another 10-20 days. Sponsor ballot is open to anyone who has an interest, not just those who are part of the task group or working group. Will take about 4 mo from completed letter ballot to come out of RevCom as a released standard.

Make sure to review current CfA and update to reflect approved PAR (scope and purpose).

Motion to adjourn meeting was made and approved. See everyone in Waikoloa or on future calls.

At Thursday evening 802.15 closing, document 15-12-0068-01-0ptc was presented.