**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |
| --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title |  |
| Date Submitted | 18 July 2013 |
| Source | Thomas KürnerTechnische Universität Braunschweig Institut für NachrichtentechnikSchleinitzstr. 22D-38092 Braunschweig | Voice: +495313912416Fax: +495313915192E-mail: t.kuerner@tu-bs.de |
| Re: |  |
| Abstract | Meeting notes on the 802.15 IG THz July 2013 Plenary meeting |
| Purpose | Meeting Minutes |
| Notice | This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15. |

**Minutes of the July 2013 THz IG**

The THz IG meeting took place on 16 and 18 July 2013 in the Time slots Tuesday AM1+AM2 and Thursday AM1+AM2.

Meeting was called to order at 8 am on 16 July 2013. The patents statement was mentioned and no patent contributions were discussed. The March 2013 meeting notes were approved.

Call for contributions/Changes of the agenda or for any other business, no discussions followed.

7 contributions were presented:

**Contribution #1 :** Sebastian Rey, TU Braunschweig (Germany) ,“Link Level Simulations of THz-Communications”; (Document 15-13-0406-00-0thz)

A link level simulation environment for THz communications is presented based on broadband ray tracing channel modeling. Since THz indoor channels suffer from high free space path losses and inter symbol interference the impact of antennas is investigated with respect to system performance. Furthermore, some forward error techniques and the impact of phase noise are illustrated.

**Contribution #2 :** Thomas Kürner, TU Braunschweig (Germany), “A Stochastic Indoor Radio Channel Model for THz WPANs/WLANsChannel Model ”; (Document 15-13-0358-00-0thz)

Building upon the experimental understanding of the THz indoor radio channel and a deterministic ray tracing propagation simulator, a stochastic channel modeling approach is proposed. Such a model becomes inevitable for the system conception of THz WPANs or WLANs as soon as a system design is developed based on system simulations. Then, realistic channel conditions must be respected. For this purpose, the model features broadband channel realizations with 50 GHz bandwidth, is fully polarimetric, includes spatial channel information and allows for the fast generation of channel realizations.

**Contribution #3 :** Rick Roberts, Intel, (USA), “On Transitioning to a 40/100 Gbps Study Group”; (Document 15-13-0397-00-0thz)

This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Contribution #4 :** Hiroyo Ogawa, NICT, (Japan), “Information on THz related issues at ITU-R Study Group ”; (Document 15-13-0431-00-0thz)

ITU-R Working Party (WP) 1A currently submitted a draft new Study Question on “Technical and operational characteristics of the active services operating in the range 275-1 000 GHz” to ITU-R Study Group (SG) 1 for adoption. ITU-R SG1 adopted a new Study Question at the last meeting and it is now circulated within ITU member states for approval. The draft new Study Question and the other input document related to THz technologies are briefly summarized.

**Contribution #5 :** Thomas Kürner, TU Braunschweig (Germany), “Recent Developments on Spectrum Issues ”; (Document 15-13-0409-00-0thz)

This document provides information on the briefing of TAC Spectrum Frontiers Working Group at FCCon the THz IG‘s activities and informs about IEEE-USA Petition towards FCC for Spectrum Ruling to Spur New Technologies

**Contribution #6 :** Thomas Kürner, TU Braunschweig (Germany), “Literature Review on Requirements for Wireless Data Centers”; (Document 15-13-0411-00-0thz)

This documents follows the discussions at the previous IEEE 802 plenary on the application of wireless data centers when launching a study group on “Beam switchable wireless point-to-point 40/100 Gbps links”. The document summarizes some requirements on wireless data centers based on a literature study.

**Contribution #7 :** Cai Yunlong, Huawei (China), “THz Bridge for Data Center ”; (Document 15-13-0425-00-0thz)

THz has tens of GHz bandwidth, which enables high data-rates as required in data centers. This contribution provides an investigation of data center architecture and its data-exchanging demand. A comparison with fiber, electrical lines, SiPH etc. is made concluding that THz will be a good candidate in ultra-high-speed data exchanging.

* The IG THz discussed the creation of a SG and initiated a Strawpoll on forming a SG 100GbW with the following task:

 *The TeraHertz Interest Group (IG THz) wishes to start a study group with the scope of determining the validity of a standard on “100GbW (100 Gbit/s over beam switchable wireless point-to-point links)”.  Potential applications of interest include wireless data centers, wireless intra-device communication, and wireless backhauling.  The wave length of interest for the PHY will be millimeter-wave or shorter. The recommendation of the study group will be to amend the standard802.15.3.*

 Result: 16 yes / 0 no / 0 abstain

* The IG prepared a letter (Document 15-13-0431-00-0thz) supporting IEEE-USA’s petitions towards the FCC for Spectrum Ruling to spur New Technologies. A Strawpoll on asking the WG for approval to forward this letter to 802.18 ended with the following results: 14 yes / 0 no / 0 abstain
* Work on the Technical Expectation Document (TED)“. The content of the TED has been discussed and updated (Document 15-11-0745-08-0thz).
* Possible input for a Press Release on the formation of the new study group has been discussed.
* Discussion of a potential liasion statement to other standards associations working on standards for data centers, like IEC or TIA. This will be further discussed at the next meeting.

The meeting was adjourned on 18 July at 12.15 pm.

**Attendees:**

Thomas Kürner, TU Braunschweig, Germany

Shoichi Kitazawa, ATR Wave Engineering Labs, Japan

Rick Roberts, Intel, USA

Nobuhiko Shibagaki, Hitachi, Japan

Norihiko Sekine, NICT, Japan

Sebastian Rey, TU Braunschweig, Germany

Makoto Yaita, NTT, Microsystem Integration Labs., Japan

Kazu Takahashi, Panasonic, Japan

Hiroyo Ogawa, ARIB, Japan

André Bourdoux, IMEC, Belgium

Akifumi Kasamatsu, NICT, Japan

Makoto Yaito, NTT Microsystem Integration Labs, Japan

Iwao Hosako, NICT, Japan

Arthur Astrin, Astrin Radio, USA

Yunlong CAi, Huawei, China

Yongjun Liu, Huawei, China

James Gilb, Tensorcom, USA

Kan Sungweon, ETRI, Korea

Nada Golnie, NIST, USA

Claude Giraud, NXP, France

Lin Yang, University of Electronic Science and Technology of China, China

Yue Guangrong, University of Electronic Science and Technology of China, China

Michael Grigat, Deutsche Telecom AG, Germany

Ralf-Peter Braun, Deutsche Telekom AG, Germany

Zhi Chen, University of Electronic Science and Technology of China, China