

**IEEE P802.15
Wireless Personal Area Networks**

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)		
Title	THz IG July 2012 Minutes		
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Re:			
Abstract	Meeting notes on the 802.15 IG THz July 2012 Plenary meeting		
Purpose	Meeting Minutes		
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Minutes of the July 2012 THz IG

The THz IG meeting took place on 17 and 19 July 2012 in the Time slots Tuesday AM1+AM2 and Thursday PM1+PM2.

Meeting was called to order at 8 pm on 17 July 2012. The patents statement was mentioned and no patent contributions were discussed. The March 2012 meeting notes were approved with one small editorial change. A revised version has been uploaded.

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

7 contributions were presented:

Contribution #1 : Jeffrey Hesler, VDI (USA), “IEEE P1785 Workgroup - Progress on the Standardization of THz Waveguides and Interfaces”; (Document **15-12-0351-01-0thz**)

The presentation provided an overview on the ongoing activities of the P1785 IEEE Workgroup, which is developing a standard to define waveguides used at frequencies above 110 GHz. The standard will define both the dimensions of the waveguides (and associated frequency bands) and their interfaces (that is flanges). The standard will also provide recommendations for summarizing the performance and the expected uncertainty of rectangular-waveguide interfaces for 110 GHz and above.

Contribution #2 : Ingmar Kallfass, Fraunhofer IAF (Germany), “MMIC Chip Sets for Wireless Communication up to 480 GHz”; (Document **15-12-0323-00-0thz**)

The architecture, implementation and performance of active MMIC-based transmit and receive frontends for sub-mmW communication have been presented. A focus was on the generation of local oscillator signals for up- and down-conversion by frequency multiplication up to 480 GHz. Transmission experiments at a center frequency of 220 GHz achieve up to 25 Gbit/s data rate.

Contribution #3 : Iwao Hosako, NICT (Japan), “Exposure Guideline and biological effects of THz radiation”; (Document **15-12-0376-00-0thz**)

This contribution paper gave a reminder on exposure guideline of THz radiation by ICNIRP and call an attention to the biological effects of MMW-THz radiation.

Contribution #4 : David Britz, AT&T Shannon Labs (USA), “Status of the IWPC MoGIG (Mobile Multi Gigabit (MoGIG) Wireless Networks and Terminals) Working Group and industries move to Nanocells”; (Document **15-12-0321-00-0thz**)

Discussion of the newly formed IWPC MoGIG working group who’s focus is on the network and equipment aspects of small cell and nanocell millimeter Wave and THz based street level infrastructure. More so how this Industry working group may align its objectives and collaborations with the 802.15 THz IG to insure network and device standards comply with spectrum and 802.15 requirements.

Contribution #5 : Sebastian Priebe, TU Braunschweig (Germany), “Interference between THz Communications and Spaceborne Earth Exploration Services”; (Document **15-12-0324-00-0thz**)

Defined by the ITU radio regulations, spaceborne Earth exploration services operated in the THz frequency band must be precluded from any interference by active applications. THz communication systems operated outdoors may accidentally radiate in direction of the Earth exploration satellites. Critical scenarios have already been identified in doc. 15-12-0101-00-0thz. Now, the interference powers are modeled for the scenarios and transmit power constraints are derived under worst-case assumptions. Maximum distances achievable with these powers are estimated for several THz communication use cases.

Contribution #6 : David Britz, AT&T Shannon Labs (USA), “Status report of meeting with passive sciences CORF committee”; (Document **15-12-0322-00-0thz**).

This presentation discussed a recent meeting the author had with representatives of the passive services /science community CORF organization in DC at the FCC, along with Mike Marcus former FCC chief technology officer, in opening up spectrum above 100GHz for device allocations, spectrum coexistence and formation of a active and passive services technology collaboration.

Contribution #7 : Hiroyo Ogawa, ARIB (Japan), “THz standardisation activities on ITU-R”; (Document **15-12-0416-00-0thz**)

ITU-R WP1A received a proposal of a new Study Question on “Technical and operational characteristics of the active services operating in the range 275-1 000 GHz”. ITU-R WP5C is developing a new ITU-R Report on “Fixed service use and future trends”. In addition to introduction of these contribution, THz standardization activities within ITU-R have been briefly summarized..

Four rounds of discussion have been made targeting three topics:

1. **Wrap-up of the Tutorial presentation from July 16**: The tutorial triggered a discussion on the next steps to be followed by the IG THz and the possible applications on which a Study Group could be spawned-off from the IG THz. An intensive discussion was held on the concept of nano-cells and backhauling of wireless systems. It was decided to set-up relation with the IWPC-MoGIG WG to increase industry participation.
2. **Interference Issue with passive service**: Following the discussion after presentations #5-7 it was decided to set up an official link to ITU-R through IEEE 802.18. The IG Chair will contact the chair of 802.18 to set up a joint meeting during the November meeting. It was further considered to invite participants from radio science (CORF) to the November meeting to discuss co-existence methods.
3. **Discussion on the TED (11/745r6)**: The content of the TED has been updated based on the contributions made in the meeting.
4. **Discussion on a possible contribution to IEEE 802.15 WNG during the November Plenary**: The IG THz chair informed the group that during the AC meeting on Wednesday the chair of WG 15 motivated the IG THz to make a presentation to WNG during the November plenary offering the creation of a study group. The preparation will be done via the e-mail reflector and phone conferences if necessary.

The meeting was adjourned on 19 July at 5.30 pm.

Attendees:

Thomas Kürner, TU Braunschweig
David Britz, AT&T Shannon Labs
Katsuhiro Aijto, NTT Corp.
Shoichi Kitazawa, ATR Wave Engineering Labs
Rick Roberts, Intel
Pascal Lagrange, Canon Research Centre France
Akifumi Kasamatsu, NICT
Iwao Hosako, NICT
Hiroyo Ogawa, ARIB
Sebastian Priebe, TU Braunschweig
Ingmar Kallfass, Fraunhofer IAF
Jeffrey Hesler, VDI
Art Astrin, Astrinradio
Mike McInnis, The Boeing Company
Masahiko Kawamura, Kozo Keikaku Engineering Inc.
Kazu Takahashi, Panasonic
Makoto Yaita, NTT Microsystem Integartion Labs
Bin Shen, Huawei
NavaratLertsirisopon, Kozo Keikaku Engineering Inc.
André Bourdoux, IMEC
Ji-Woong Choi, DGIST
Krishna Sayana, Samsung
Yoshihiro OBA, Toshiba
Stephen Chasko, Landist Gyr
Nobuhiko Shibagaki, Hitachi
Satoshi Oyama, ARIB

