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 | March 2012 | |
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| Re: | IEEE P802.15-09/0534r3, IEEE P802.15-12/0779r4 | |
| Abstract |  | |
| Purpose |  | |
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**CALL FOR THz APPLICATIONS**

The 802.15 THz Interest Group is issuing this “Call for THz Applications” as a means to invite your contribution to the evolving definition, description, of research and development of technology and markets associated with THz frequencies and applications. Your input will help the Interest Group better gauge the level of interest and activity in this emerging industry, as well as help the Interest Group prepare and respond to the impact of possible regulation and industry standards going forward. This “Call” would cover research and development, products and applications that utilize emit and receive terahertz frequencies at or above 275GHz and up to 3000GHz.

The 802.15 THz Interest Groups focus is primarily concerned with THz communications and related network applications operating in the THz frequency bands between 275 – 3000GHz. Such THz communications applications would include; component to component, board to board, machine to machine, human to machine and human to human, (indoor and outdoor) wireless communications. THz communication applications cover multiple categories with varying requirements. As envisioned, THz communications would overall employ wireless modulation methods of limited complexity, omni and/or directional antenna systems, and would typically offer very high data transfer rates in multiples of 10 Gbps, and up to possibly 1 Tbps, for parity with future fiber optic capacities. THz wireless systems could support transmission distances ranging from the very short (few centimeters or less) to relatively long distances of several kilometers.

In addition to communication applications, the 802.15 THz IG is also interested in a broader understanding of other THz related applications such as; location awareness, remote sensing, and medical imaging/security scanning, and evidence of how these other active THz applications may coexist without interferences to/from communications activities and passive science research services (such as radio astronomy) in the future.

The subject material provided from this “Call for THz Applications” will be evaluated for inclusion in 802.15 THz IG documents and submissions, as well as to support the Interest Group’s transition to a Study Group and eventual Task Group status. The final goal of this process will be the creation of one or several THz communication standards associated with differing applications.

The provided subject material would also be used to support the 802.15 THz IG in its ongoing efforts and response to evolving radio regulations and use of this spectrum for passive and active services.

The 802.15 THz Interest Group greatly appreciates your opinion and response to the questions below. Your input will help us support the THz industry’s standardization efforts.

Please review and fill in your responses to the questions below and provide an IEEE document following the links below:

**IEEE “Call for THz Applications” Subject Material Presentation:**

All submissions should be provided in softcopy, written in MS Word and/or MS PowerPoint, following the IEEE 802.15 approved templates available at

<http://grouper.ieee.org/groups/802/15/pub/Download.html>.

Please note, that according to IEEE 802 policy all submitted information will be publically exposed and it is the responsibility of the contributor to not provide data that would be considered confidential.

Please obtain a valid THz document number then upload your contribution to the document server at <https://mentor.ieee.org/802.15/documents>.

For further questions and comments you may also contact

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Chair of 802.15 THz Interest Group

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**RELEASE DATE: March 15, 2012**

**DUE DATE: Presentations at July 2012 meeting**

IEEE P802.15.THz Interest Group has been chartered to study emerging THz technologies and applications and to eventually transition to a Study Group where a Project Authorization Request (PAR) answering the IEEE 802 LMSC Five Criteria (5C) will be created. This Call for Applications (CFA) solicits data and input from individuals, industry and science community to help to identify and define THz communications specifics which will help creation of both the Study Group and later the buildup of the PAR and 5C documents.

Here is a quick reminder regarding the Call for Applications for contributors who are less familiar with the IEEE 802 process:

* Any standards activity whose aim is to produce a Standard, Recommended Practice, or Guide shall submit a PAR to the IEEE-SA Standards Board within six months of beginning work
* Study Group – a group formed to investigate a project and produce a PAR
* PAR – Project Authorization Request – the charter for a standards project, a document that authorizes work on a project.
* Five Criteria (5C) – In IEEE 802, the basis for determining whether to forward a PAR, an explanation how a proposed PAR meets the following five criteria:
  + Broad Market Potential
  + Compatibility
  + Distinct Identity
  + Technical Feasibility
    - Includes Coexistence of IEEE 802 LMSC wireless standards specifying devices for unlicensed operation (unless it is not applicable)
  + Economic Feasibility

**THz “Call for THz Application” case**

1. **Non-Communications applications**

1. Use case vision – please describe

2. Frequency and bandwidth

3. Transceiver details

4. Antenna details (Omni, directional)

5. Transmission range

6. Size, weight and power

7. Other – please describe

1. **Communications applications**

1. Use case vision – please describe

2. Wireless network topology

3. Frequency and bandwidth

4. Transceiver details

5. Antenna details (Omni, directional)

6. Data rates

7. Transmission range

8. BER/PER requirements

9. Size, weight and power

10. Desired MAC features such as

* Mobility and link switching
* Device discovery and antenna alignment
* Multiple user access

11. Timeframe for IEEE802 document completion

12. Other – please describe **PRESENTATIONS:**

All submissions should be provided in softcopy, written in MS Word and/or MS PowerPoint, following the IEEE802.15 approved templates available at <http://grouper.ieee.org/groups/802/15/pub/Download.html>.

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The presentation agenda will be set at the opening session of the July 2012 THz IG meeting.