

# **Proposal for Workshop**

## **IEEE ANTS 2020, New Delhi, India**

### **Transformation through Rural Connectivity: the Role of 5G and B5G Technologies**

**(Sponsored by IEEE Future Networks and MHRD-SPARC)**

Connecting the Unconnected or under-connected (CTU) is the holy grail of transforming the lives of over 3 billion people around the globe, with over 500 million in India alone, with wireless Internet who are yet to experience its value in multiple ways. If this could be accomplished, its impact on the society would be enormous. This workshop would focus highlight the need to consider the CTU requirements in 5G and B5G networks in the standardization process, in the development of the use cases, and affordable solutions. In its Vision 2030 SDG (Sustainability Development Goals) the United Nations has proclaimed access to Internet as basic human right and has said that these goals cannot be achieved without affordable access to Internet by everyone on this planet. While there are numerous projects and initiatives ongoing around the world, but these are fragmented and lack the critical mass and coordination to be able to impact the future standards, product development, and cost of deployment otherwise achievable by volume. The workshop would discuss the challenges, solutions, and potential for collaboration opportunities to influence the network service providers, manufacturers and the governments around the world.

While technologies are available today, they need to be customized and optimized at the systems level to bring down the cost of network in order to be affordable. In addition, the content needs to be relevant and in local languages to be of useful, not to mention the need to offer innovative human-computer interaction (HCI) solutions (that are not text based) so that people who are not literate or digitally savvy can easily use the devices and consume services. Another important requirement is that of flexible spectrum allocation regime at the lower range of the spectrum to increase reach and coverage. Use of renewable energy sources will enable deployment in remote areas where there is lack of power grid or it is intermittent. In short, this workshop will highlight a number of technology gaps to should be addressed in 5G and B5G networks, such that access is affordable and content and services are actually consumed by the target set of users. Technology aside, need to develop innovative business models is a must to be commercially sustainable in the long-term. A number of such models, especially designed for the rural population, will be discussed, such as Village Level Entrepreneur (VLE), Freemium (Free + Premium), revenue sharing among the cascade of service providers, subsidized billing by USOF (Universal Service Obligation Funds). Finally, the workshop aims to summarize the state-of-the-art from today to 3 years, 5 years and 10 years.

The proposed workshop is a half-day workshop that will take place during IEEE ANTS 2020. The workshop aims to bring researchers/experts around the world together to explore and discuss the state-of-the-art research and local initiatives in the areas mentioned above. The workshop

will include invited speakers and those selected from the open call to join as speakers. Topics of interest include, but not limited to:

- *Challenges of rural connectivity*
- *Drivers and motivation to providing affordable connectivity and useful services*
- *Killer application use cases*
- *Requirements and gaps*
- *Standards activities*
- *Spectrum allocation*
- *Backhaul and access technologies*
- *Can 5G and B5G be the game changer?*
- *Systems architectures*
- *IoT and machine learning for rural markets*
- *Regulatory and business issues and models*
- *Cloud computing, edge computing/catching for rural deployment scenarios*
- *Content generation and management*
- *Human-computer interaction*
- *User capacity building*

### **Guidelines for submitting expression of interest**

The proposal to become an invited speaker should include the following information:

- Speaker information (name, affiliation, email address, telephone number)
- Title and an extended abstract (not exceeding 500 words)

For more information, please contact the workshop Organizers: Prof. Vimal Bhatia ([vbhatia@iiti.ac.in](mailto:vbhatia@iiti.ac.in)), Prof. Sanjram Premjit Khanganba ([sanjrampk@iiti.ac.in](mailto:sanjrampk@iiti.ac.in)), or Prof. Sudhir Dixit ([sudhir.dixit@ieee.org](mailto:sudhir.dixit@ieee.org)).

### **Important Dates:**

Proposal submission:	8 <sup>th</sup> October 2020
Acceptance Notification:	16 <sup>th</sup> November 2020
Final Submission:	25 <sup>th</sup> November 2020
Workshop Date (half-day):	16 December 2020 (from 15:00 IST)

### **Supported by:**

