5G and B5G Research directions and practical implementation on Testbeds

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5G communication systems builds on the success of the 4G communication system in taking mobile internet to a competitive level. 5G on the other hand has the mission to penetrate mission critical industrial applications as well as pave the way to massive application of Internet of things (IoT). In this talk we review the key applications and technologies in 5G and how successful they are in real deployment. We also discuss the main trends in 6G. The talk also focuses on practical testbed for 5G communications systems in Egypt that is funded by the NTRA and is located in Egypt-Japan University of Science and Technology (E-JUST). In the context of this testbed, we open a discussion on how to practically test different technologies of 5G, the limitations and the extension of this testbed to 6G and B5G technology.

IEEE and IEEE Alexandria Subsection (Mission and Vision)

The Institute of Electrical and Electronics Engineers (IEEE) is the world's largest technical and professional organization for the advancement of technology. IEEE has an impeccable structure categorizing different technical disciplines in chapters and different regions of the world in regional, national and local sections. This talk will present a concise introduction of the IEEE services and educational tools. The talk will also focus on the local chapter in Alexandria, the mission and vision and how it is trying to reach out to the local electrical engineering community in Alexandria. The activities of IEEE Alexandria subsection will be detailed as well as the future plan of the subsection to help Alexandria become an excellence hub in Electrical Engineering in Egypt and the region.

Biography of Prof. Maha Elsabrouty

Prof. Dr. Maha Elsabrouty received her BSc. in Electronics and Electrical Communication Engineering, with honors from Cairo University, Egypt. She received the M.Sc. and PhD degrees in Electrical Engineering from the University of Ottawa, Canada.

Currently, Prof. Elsabrouty is with E-JUST University, department of Electronics and Communication Engineering (ECE) since September 2010, where she is involved in Teaching graduate courses, supervising Masters and PhD students and conducting several advanced research work granted by funding agencies in Egypt and abroad.

Her current research interest focuses on physical layer techniques, advanced methods of channel coding, MIMO communications, IoT, 5G and beyond, Cognitive radio and wireless sensor networks.

She has supervised over 10 PhD theses and 10 MSc. Theses. Dr. Elsabrouty has also acted as the executive director of the center of innovative technology (CINTECH) from January 2015 to January 2018. The center is responsible for technology transfer, patent filing and communication with the industry along with supporting spin-offs and start-ups. Dr. Elsabrouty has been a key member in developing the 1st innovation cluster in ICT in Egypt in Borg Elarab, specialized in the internet of things as part of the fund from ITIDA from 2017 to 2022. She has also been active advocate of entrepreneurship and industrial cluster, attending several courses and establishing strong ties with the innovation eco-system allover Egypt. Currently, Prof. Elsabrouty is the chair of IEEE Alexandria Subsection.