W2: The IEEE International Workshop on Cellular Internet of Things - Emerging Trends and Enabling Technologies

18 September 2016 | Montréal, Canada
Location: Verdun room

The Internet of Things (IoT) will bring about tremendous improvements in user experience and system efficiency. An estimated 50 billion connected devices will be deployed by 2020 and the total IoT revenue is expected to grow to $1.2 trillion in 2022. As a result, IoT services are expected to be a key driver for growth in the cellular industry.

The goal of the workshop is to bring together researchers from both industry and academia, cellular service providers, and industrial partners to explore IoT requirements, business case, emerging trends, potential applications, and enabling technologies. The focus of the workshop will be on the evolution of cellular technologies to support low-power wide-area IoT services, related requirements, commercial use cases, field experiments and performance results.

The workshop will offer keynote speeches by prominent figures from both commercial and research sides, as well as technical presentations on the latest research and development in cellular IoT, including deployment related results using real-world examples and scenarios.

SCHEDULE

Early Morning Session 8:30 – 10:00

Keynote #1 – Vehicle-to-X Communication Using Millimeter Waves
Prof. Robert Heath, University of Texas at Austin

Keynote #2 – An Overview of 4G and 5G IoT Standardization in 3GPP
Dr. Hao Xu, Qualcomm

Papers

1. **On the Achievable Coverage and Uplink Capacity of Machine-Type Communications (MTC) in LTE Release 13**

Authors: Vidit Saxena, Anders Wallen, Tuomas Tirronen, Ericsson Research; Hazhir Shokri, Johan Bergman, Yufei Blankenship, Ericsson AB

Morning Break 10:00 - 10:30

Late Morning Session 10:30 – 12:00

2. **A Computationally Efficient Adaptive Resource Allocation Scheme for M2M Communications**

Authors: Yali Wu, Ningbo Zhang, Guixia Kang, Beijing University of Posts and Telecommunications

3. **Coverage and Capacity Analysis of LTE-M and NB-IoT in a Rural Area**

Authors: Mads Lauridsen, Aalborg University; Istvan Z. Kovacs, Nokia Networks; Preben E. Mogensen, Aalborg University; Mads Sorensen, Telenor Denmark; Steffen Holst, Telenor Danmark

4. **Performance Analysis of Low-Complexity Simply-Differential Time Synchronization Approach for MTC over LTE Systems**

Authors: Leila Nasraoui, SupCom; Leila Najjar, Supcom school; Mohamed Siala, SUPCOM, Tunis, Tunisia

5. **Performance Evaluation of NB-IoT Coverage**

Authors: Ansuman Adhikary, Ericsson Research; Xingqin Lin, Y.-P. Eric Wang, Ericsson

6. **Data Channel Design and Performance for LTE Narrowband IoT**

Authors: Rapeepat Ratasuk, Nokia Networks; Nitin Mangalvedhe, Jorma Kaikkonen, Michel Robert, Nokia

7. **Energy States Aided Relay Selection for Cognitive Relaying Transmission**

Authors: Minghua Xia, Sun Yat-sen University; Tang Dong, Dandan Jiang, Guangzhou University; Chengwen Xing, Beijing Institute of Technology

Lunch Break (on your own) 12:00 - 13:30

Early Afternoon Session 13:30 - 15:00

Keynote #3 –
Title TBD
Prof. Amin Arbabian, Stanford University

Panel –
Title TBD
Panelists: Dr. Jin Yang, Prof. Robert Heath, Dr. Hao Xu, Prof. Amin Arbabian

Papers (continued)

8. **Channel coding for ultra-reliable low-latency communication in 5G systems**

Authors: Michal Sybis, Krzysztof Wesolowski, Poznan University of Technology; Keeth Jayasinghe, Nokia Bell Labs; Venkatkumar Venkatasubramanian, Nokia NET; Vladimir Vukadinovic, Nokia Bell Labs

Afternoon Break 15:00 - 15:30

Late Afternoon Session 15:30 - 17:00

9. **D2D Neighbor Discovery and Resource Scheduling Through Demodulation Reference Signal**

Authors: Huan Tang, University of California, Davis; Zhi Ding, UC Davis; Bernard C. Levy, University of California, Davis

10. **Research on Overlay D2D Resource Scheduling Algorithms for V2V Broadcast Service**

Authors: Zhang Xiguang, Yong Shang, Peking University

11. **Distributed Slot Allocation in Capillary Gateways for Internet of Things Networks**

Authors: Fatima Hussain, Alexander Ferworn, Ryerson University

12. **Edge Selection-Based Low Complexity Detection Scheme for SCMA System**

Authors: Yudan Wang, Ling Qiu, University of Science and Technology of China

13. **Efficiency Gain for RoHC Compressor Implementations with Dynamic Configuration**

Authors: Mate Tomoskozi, Budapest University of Technology and Economics; Patrick Seeling, Central Michigan University; Peter Ekler, Budapest University of Technology and Economics; Frank Fitzek, TU Dresden

14. **A survey on intelligent MAC layer jamming attacks and countermeasures in the context of WSNs**

Authors: Taieb Hamza, Ecole de Technologie Superieure; Georges Kaddoum, University of Quebec, Ecole de Technologie Superieure; Aref Meddeb, National Engineering School Of Sousse, Tunisia; Georges Matar, Biomedical Information Processing Lab, Ecole De Technologie Superieure