2016 IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)

	Monday, November 7		Tuesday, November 8	Wednesday, November 9
9:00 - 10:30	A 7 Nov 0900: *Performance Aspects in Networks* B 7 Nov 0900: *MIMO Networks* C 7 Nov 0900 : *Optical Networking*		A 8 Nov 0900: *Network IoT* B 8 Nov 0900 : *Sensor and Mesh Networks* C 8 Nov 0900 : *Wireless IoT 1* M 8 Nov 0900: *WIN with WIT - Women In Engineering Mini-Conference Inaugural Session*	A 9 Nov 0900: *Data Networking* B 9 Nov 0900 : *Multi-Hop Systems* C 9 Nov 0900: *Privacy and Security*
10:30 - 11:00	R 7 Nov 1030: *Tea Break*		R 8 Nov 1030: *Tea Break*	R 9 Nov 1030: *Tea Break*
11:00 - 11:30	M 7 Nov 1100: *Inaugural Session and Panel Discussion on Call Drops - How come we haven't solved it yet ?*		M 8 Nov 1100: *Keynote Talk on Hybrid MAC Protocols for Low Delay Scheduling*	M 9 Nov 1100: *Keynote Talk on Next-Generation Telecom Infrastructure to Connect the Billions*
11:30 - 12:00			M 8 Nov 1130: *Panel Discussion on IoT - Experiences from Early deployments*	M 9 Nov 1130: *Panel Discussion on Next Generation Infrastructure to connect the Next Billion*
12:00 - 12:30	M 7 Nov 1200: *Keynote Talk: No Smart Cities without Sensors*			
12:30 - 13:00	M 7 Nov 1230: *Keynote Talk: Paving the path to Narrowband 5G with LTE Internet of Things (IoT)*		M 8 Nov 1230: *Keynote Talk on Micro operators for vertical specific service delivery in 5G mobile business ecosystem*	M 9 Nov 1230: *Keynote Talk on Software Defined Networking (SDN) in Next-Generation Telecom Infrastructure: Some quick wins and the road ahead*
13:00 - 14:00	R 7 Nov 1300: *Lunch*		R 8 Nov 1300: *Lunch*	R 9 Nov 1300: *Lunch*
14:00 - 15:30	A 7 Nov 1400: *Workshop on Cloud Interoperability and Federation (WCIF)* B 7 Nov 1400: *Ad Hoc Networks* C 7 Nov 1400: *PhD Student Forum* M 7 Nov 1400: *Workshop on Smart Cities*	P 7 Nov 1400 : *Poster Session*	A 8 Nov 1400: *WIE Workshop for Academia: Design Thinking* B 8 Nov 1400: *WIE Workshop for Industry: Leadership Skills* C 8 Nov 1400: *Wireless IoT 2* M 8 Nov 1400: *Industry and Startup Showcase Presentations*	A 9 Nov 1400: *Building Secure IoT Networks* B 9 Nov 1400 : *Wireless Physical Layer Challenges* C 9 Nov 1400: *Learning in Networks* M 9 Nov 1400: *Workshop on 5G Wireless Technology Challenges & Opportunities (WiTCO 2016)*
15:30 - 16:00	R 7 Nov 1530: *Tea Break*		R 8 Nov 1530: *Tea Break*	R 9 Nov 1530: *Tea Break*
16:00 - 18:00	A 7 Nov 1600: *Workshop on Information Centric Networking (ICN)* M 7 Nov 1600: *Workshop on Smart Cities* B 7 Nov 1600 : *Satellite Communication* C 7 Nov 1600: *PhD Student Forum*		M 8 Nov 1600: *Industry and Startup Showcase Presentations* A 8 Nov 1600: *Panel Discussion on Career Growth for Women Professionals* B 8 Nov 1600 : *WiE Technical Session 1* C Nov 8 - 16:00 : *WiE Technical Session 2*	A 9 Nov 1600: *Connecting The Next Billion* B 9 Nov 1600: *Emerging Technologies* C 9 Nov 1600: *Network Performance* M 9 Nov 1600: *Workshop on 5G Wireless Technology Challenges & Opportunities (WiTCO 2016)*
18:00 - 18:30	M 7 Nov 1800: *Special Keynote Talk on Reducing Digital Divide through the Information-Internet*		M 8 Nov 1800: *Networking Break*	M 9 Nov 1800: *Concluding Session*
18:30 - 19:00			M 8 Nov 1830: *Pre-Banquet Special Session - 10th Anniversary Felicitations & Awards*	

19:00 - 19:45	M 7 Nov 1900: *High Tea*		M 8 Nov 1900: *Stories from a Globetrotting IEEE Volunteer*	
19:45 - 20:00				
20:00 - 21:30			G 8 Nov 2000: *Banquet*	

Monday, November 7

Monday, November 7, 09:00 - 10:30

A 7 Nov 0900: Performance Aspects in Networks

Room: Hall A
Chair: Bibudhendu Pati (C. V Raman College of Engineering, India)

Crash Failure Immune Offloading Framework
Sayanti Mondal, Chandreyee Chowdhury and Sarbani Roy (Jadavpur University, India); Sumanta Deb (Institute of Engineering and Management, India); Sarmistha Neogy (Jadavpur University, India)

CSS: Cautious Slow Start Algorithm to Minimize Packet Drop Rate
Swapna Chalavindala (National Institute of Technology Karnataka, India); Mohit P. Tahiliani (National Institute of Technology Karnataka, Surathkal, India)

On Energy Minimization in Cooperative Spectrum Sensing using LRT in Presence of Emulation Attack
Avik Banerjee and Santi Prasad Maity (Indian Institute of Engineering Science and Technology, Shibpur, India)

Adaptive Link Rates for Burst based Transmission Towards the prosperity of Green Networks
Sowmiya N (Sri Sivasubramaniya Nadar College of Engineering, India); H Shahul Hamead (SSN College of Engineering, India); T Mirnalinee (S. S. N College of Engineering, Anna University, India)

On the Robustness of AQM Mechanisms Against Non-responsive Traffic
Sachin Patil (NITK, India); Mohit P. Tahiliani (National Institute of Technology Karnataka, Surathkal, India)

Adaptive QoS for Data Transfers using Software-Defined Networking
Joshua Boley (Northern Illinois University, USA); Eun-Sung Jung (Hongik University & Argonne National Lab, USA); Rajkumar Kettimuthu (Argonne National Lab, USA)

B 7 Nov 0900: MIMO Networks

Room: Hall B
Chair: Pascal Lorenz (University of Haute Alsace, France)

Ordered Multi-Branch Processing for Successive Interference Cancellation based MIMO Detection
Manish Mandloi, Mohammed Hussain and Vimal Bhatia (Indian Institute of Technology Indore, India)

Throughput Based Transmit Antenna Selection for Underlay CR MIMO Systems
Elizabeth Okumu and Mqhele E. Dlodlo (University of Cape Town, South Africa)

Near-Optimal and Optimal Reduced Complexity Algorithms for Throughput Maximisation in Underlay CR MIMO Systems

Elizabeth Okumu and Mqhele E. Dlodlo (University of Cape Town, South Africa)

Local search based near optimal low complexity detection for large MIMO System

Mukesh Chaudhary and Narendra Meena (Indian Institute of Technology, Guwahati); Rakhesh Singh Kshetrimayum (Indian Institute of Technology Guwahati, India)

SAGE based Semi-Blind Channel Estimation Technique for Massive MIMO System

Khushboo Mawatwal (IIT Kharagpur, India); Debarati Sen (Indian Instutute of Technology Kharagpur, India); Rajarshi Roy (Indian Institute of Technology, Kharagpur, India)

C 7 Nov 0900 : Optical Networking

Room: Hall C
Chair: Abishek Gopalan (Infinera, USA)

Performance comparison of optical fronthauling techniques for centralized radio access network

Amol Delmade (Indian Institute of Technology MADRAS, India); Deepa Venkitesh (IIT Madras, India); Ravinder D Koilpillai (Indian Institute of Technology Madras, India)

Delayed Spectrum Allocation for Anycast Advance Reservation with Flexible Window in Elastic Optical Networks

Pegah Afsharlar, Arash Deylamsalehi and Vinod M. Vokkarane (University of Massachusetts Lowell, USA)

Defragmentation of Flexible Dense Wavelength Division Multiplexing (FDWDM) networks using Wavelength Tunability Criterion

Krishna Kumar Naik B, Ruman Dutta, Shashidhara G and Siva Sankara Sai Sanagapati (Sri Sathya Sai Institute of Higher Learning, India); Gowrishankar R (Sri Sathya Sai Institute of Higher Learning); Prabhat Praveen Behere (Cisco Systems Pvt. Ltd., India); Sai Kishore Bhyri (Cisco Systems Inc. & Cisco Systems Inc., India)

A proposal for WLAN-EPON Integration that reduces Video Traffic Jitter in presence of Mixed Traffic

Atri Mukhopadhyay (Indian Institute of Technology Kharagpur, India); Goutam Das (IIT Kharagpur, India)

Monday, November 7, 10:30 - 11:00

R 7 Nov 1030: Tea Break

Room: Reception Area

Monday, November 7, 11:00 - 12:00

M 7 Nov 1100: Inaugural Session and Panel Discussion on Call Drops - How come we haven't solved it yet ?

David Koilpillai(IITM), Sudhir Gupta (TRAI), Parag Kar (Qualcomm), Surendra Shenoy (Quadgen), Abhay Savargaonkar (Airtel), Vikram Tiwathia (COAI)

Room: Main Auditorium
Chair: Pamela Kumar (Cloud Computing Innovation Council of India, India)

Monday, November 7, 12:00 - 12:30

M 7 Nov 1200: Keynote Talk: No Smart Cities without Sensors

Prof. U B Desai

Room: Main Auditorium

ABSTRACT: As per Aug 2010 McKinsey Report, by 2030, India will have 590 million people living in the cities (nearly twice the population of US), the working age population will increase by 270 million people, 70% of net new employment will be generated in cities, 68 cities will have a population of 1 million plus (up from 42 cities today (Europe has 25 cities with 1 million plus population). Just based on these numbers, India has a massive challenge on its hand. Smart Cities is the buzz word to tackle this challenge. The concept of smart cities has different perspectives depending who you talk to. Civil engineers describe it from smart structures, smart water management and smart sanitation perspective, material science engineers describe it from the perspective of smart materials, electrical engineers look at it from smart meters perspective, and computer engineers look at it from the angle of e-mobility, communication, ICT perspective. In all of the above one aspect is sorely missed and that is: sensor technology. No smartness will take place unless we have reliable, robust, and affordable sensors. The front end for any smart city component will be sensors. This talk will quickly give a perspective on smart cities and its various components and then focus on some of the sensors that would be required for making smart cities.

Monday, November 7, 12:30 - 13:00

M 7 Nov 1230: Keynote Talk: Paving the path to Narrowband 5G with LTE Internet of Things (IoT)

Dhananjay Gore (Qualcomm)

Room: Main Auditorium

ABSTRACT: The presentation will be an introduction to the cellular Internet of Things. We will first focus on the new narrowband LTE technologies, including eMTC and NB-IoT. These are introduced as part of LTE Advanced Pro, which is inclusive of Release 13 of the 3GPP standard and beyond. We will then cover why LTE IoT is a good platform for the wide-area IoT, and then get into the details of how LTE is evolving to better address the varying needs of the wide range of IoT applications. Finally will show how 5G fits in the 3GPP technology roadmap and how NB-IoT in particular is paving the path to Narrowband 5G, which will be a critical part of the overall 5G platform for massive Internet of Things.

Monday, November 7, 13:00 - 14:00

R 7 Nov 1300: Lunch

Room: Reception Area

Monday, November 7, 14:00 - 15:30

A 7 Nov 1400: Workshop on Cloud Interoperability and Federation (WCIF)

Sreekanth Iyer (IBM), Siddharth Nandi (NetApp), Satish Vishwanathan (NextGen Data Centre and Cloud Technologies), Suhas Shivanna (HP),

Room: Hall A
  Chair: Lalitha Vadlamani (International Institute of Information Technology, India)

B 7 Nov 1400: Ad Hoc Networks

Room: Hall B
  Chair: Vimal Bhatia (Indian Institute of Technology Indore, India)

C 7 Nov 1400: PhD Student Forum

Room: Hall C
Chairs: Radha Krishna Ganti (Indian Institute of Technology Madras, India), Chandramani Singh (Indian Institute of Science, India)

M 7 Nov 1400: Workshop on Smart Cities

Subhankar Dhar (SJSU), Mukesh Taneja (Cisco), Bipin Pradeep Kumar (Gaia Smart Cities),Deepak Kataria (IP Junction), , Ravikumar Annaswamy (Innohabit Technologies)

Room: Main Auditorium
Chair: Subhankar Dhar (San Jose State University, USA)

Monday, November 7, 14:00 - 16:00

P 7 Nov 1400 : Poster Session

Room: Poster Area

Forming Structured P2P Overlays over Disjoint MANET Clusters
Anurag Sewak, Mayank Pandey and Manoj Gore (Motilal Nehru National Institute of Technology Allahabad, India)

TDMAC: A Timestamp Defined Message Authentication Code for Secure Data Dissemination in VANET
Atanu Mondal (Camelia Institute of Technology, India); Sulata Mitra (Indian Institute of Engineering Science and Technology, India)

Fairness Analysis of MAC Protocols in MIMO Networks Using Stochastic Geometry
Alireza Shahanaghi, Aliazam Abbasfar and Kasra Madayeni (University of Tehran, Iran)

An Ensemble of Condition based Classifiers for Indoor Localization
Dip Ghosh (Indian Statistical Institute, India); Priya Roy and Chandreyee Chowdhury (Jadavpur University, India); Sanghamitra Bandyopadhyay (Indian Statistical Institute, India)

Error Vector Magnitude Analysis for Carrier Aggregated OFDM signals with Nonlinear HPA
Parag Aggarwal (Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India); Ankita Agarwal (Indraprastha Institute of Information and Technology, India); Vivek A Bohara (Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India)

E3M: An Energy Efficient Emergency Management System Using Mobile Cloud Computing
Chhabi Rani Panigrahi (C. V. Raman College of Engineering, Bhubaneswar, India); Joy Lal Sarkar (C. V Raman College of Engineering); Bibudhendu Pati (C. V Raman College of Engineering, India)

TmRPL++: Trust based Smarter-HOP for optimized mobility in RPL
Radhesh Anand M c (National Institute of Technology Karnataka, India); Mohit P. (National Institute of Technology, Surathkal, India)

A novel architecture for last mile connectivity for rural India using NOFN
Anand M and G K Reddy Chinthalapudi (Centre for Development of Telematics, India)

An Advanced Diffie-Hellman Approach to Image Steganography
Shreyank N Gowda (R V College of Engineering, India)

Function Code Based Vulnerability Analysis of DNP3
Chetna Singh (Mumbai University, India); Ashwin Nivangune (CDAC, India); Mrinal H Patwardhan (Indian Institute of Technology Bombay, India)

A New Light Weight Transport Method for Secured Transmission of Data for IoT
Sainandan Bayya Venkata (Sri Sathya Sai Institute Of Higher Learning, India); Prabhakara Yellai (Cisco Systems, Inc, India); Gaurav D Verma, Andhavarapu Lokesh, Adithya K S and Siva Sankara Sai Sanagapati (Sri Sathya Sai Institute of Higher Learning, India)

Software Based Gateway with Distributed Flow Environment for Medical IoT in Rural Areas
Boopala Krishnan (Sri Sathya Sai Institute of Higher Learning & Deemed University, India); Sudheer Babu and Sai Prem Shaji (Sri Sathya Sai Institute of Higher Learning, India); Amar Sainath Reddy Tamanampudi (Sri Sathya Sai Institute Of Higher Learning, India); Siva Sankara Sai Sanagapati (Sri Sathya Sai Institute of Higher Learning, India)

A Fully Automated Deep Packet Inspection Verification System with Machine Learning
Uday Trivedi and Munal Suryakant Patel (Samsung R&D Institute, Bangalore, India)

Correlating Centralities of Social Networks
Neelaabh Gupta, Anagh Narain, Akshat Arora and Dolly Sharma (Shiv Nadar University, India)

Minimizing the Cost of Designing Fault-tolerant CDN Data Centers
Vignesh S. (IIT Guwahati, India); Rakesh Tripathi and Venkatesh Tamarapalli (Indian Institute of Technology Guwahati, India)

Testbed and Experimental Analysis of Automatic Modulation Classifier for Non-uniformly Sampled Signal
Himani Joshi and Sumit Jagdish Darak (IIIT-Delhi, India); Yves Louet (CentraleSupelec, France)

Monday, November 7, 15:30 - 16:00

R 7 Nov 1530: Tea Break

Monday, November 7, 16:00 - 18:00

A 7 Nov 1600: Workshop on Information Centric Networking (ICN)

D Das (IIITB), Anantha Simha (TCS), P Sudhakar Rao (TTSL),

Chairs: Bighnaraj Panigrahi (Tata Consultancy Services, India), Samar Shailendra (Tata Consultancy Services, India)

M 7 Nov 1600: Workshop on Smart Cities

Chairs: Sri Chandra (IEEE, USA), Subhankar Dhar (San Jose State University, USA)

B 7 Nov 1600 : Satellite Communication

Room: Hall B
Chair: T Rama Rao (SRM University, India)

Key-Shaped Slot Loaded Circular Microstrip Antenna for Multi-band and Broadband Response
Amit Deshmukh (DJSCOE, India); Priyanka Verma, Divya Singh and Payal Mohadikar (DJSCE, India); Kamala Prasan Ray (RFMS, SAMEER, IIT Campus, Powai, Mumbai, India)

Ultra-Wideband Star shaped planar monopole antenna
Amit Deshmukh (DJSCOE, India); Payal Mohadikar (DJSCE, India); Kshitij Lele (DJSCOE, India); Priyanka Verma and Divya Singh (DJSCE, India); Kamala Prasan Ray (RFMS, SAMEER, IIT Campus, Powai, Mumbai, India)

Synchronization of TDMA Bursts with Short Preamble for Satellite Receiver
Bipsa Purushothaman, A Chinna Veeresh, S Venkata Siva Prasad, S V Hari Prasad and Pradeep G (Centre for Development of Telematics, India)

A Reconfigurable Microstrip Cross Parasitic Patch Antenna With Two-dimensional Beam Scanning Capability
Vikas Vishnu Khairnar (Birla Institute of Technology and Science Pilani, K K Birla Goa Campus, India); Ramesha C K (Assistant Proffesor, India); Lucy J Gudino (BITS Pilani, K K Birla Goa Campus, India)

A Novel Frequency Reconfigurable Rectangular Step Slotted Antenna for WLAN/ITU
Tanweer Ali (REVA University, India); Sameena Pathan (Manipal Institute of Technology, Manipal University, India); Rajashekhar Biradar (Reva University, India)

Hardware Implementation of MIL-STD-1553 Protocol Over OFDMA-PHY Based Wireless High Data Rate Avionics Systems
Sandip Das (IIT Kharagpur, India); Suvra Sekhar Das (Indian Institute of Technology Kharagpur, India); Indrajit Chakrabarti (IIT Kharagpur, India)

C 7 Nov 1600: PhD Student Forum

Room: Hall C
Chairs: Radha Krishna Ganti (Indian Institute of Technology Madras, India), Chandramani Singh (Indian Institute of Science, India)

Monday, November 7, 18:00 - 19:00

M 7 Nov 1800: Special Keynote Talk on Reducing Digital Divide through the Information-Internet

Josef Noll (Univ of Oslo)

Room: Main Auditorium

Monday, November 7, 19:00 - 19:45

M 7 Nov 1900: High Tea

Room: Reception Area

Tuesday, November 8, 09:00 - 10:30

A 8 Nov 0900: Network IoT

Room: Hall A

Low-Cost Flow-Based Security Solutions for Smart-Home IoT Devices
Arunan Sivanathan, Daniel Sherratt, Hassan Habibi Gharakheili and <u>Vijay Sivaraman</u> (University of New South Wales, Australia); Arun Vishwanath (IBM Research, Australia)

Timestamp Integrity in Wearable Healthcare Devices
Muhammad Siddiqi (University of New South Wales (UNSW), Australia); <u>Vijay Sivaraman</u> (University of New South Wales, Australia); Sanjay Jha (University of New South Wales (UNSW), Australia)

The Smart Bus for a Smart City - A real-time implementation
Sharad S (Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India); <u>Palaniappan Bagavathi Sivakumar</u> (Amrita Vishwa Vidyapeetham & School of Engineering, India); Ananthanarayanan V (Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India)

On Spectral Analysis of Node Centralities
Rahul Singh (Iowa State University, India); <u>Abhishek Chakraborty</u> (Indian Institute of Space Science and Technology, India); Manoj Bs (Indian Institute of Space Science and Technology & California Institute of Telecommunication and IT, India)

B 8 Nov 0900 : Sensor and Mesh Networks

Room: Hall B

Joint Distributed Scheduling and Tree formation for Heterogeneous Wireless Sensor Networks
<u>Tejas Vasavada</u> (DA-IICT, India)

PMAC: A Poll-Based MAC Protocol for Wireless Body Area Networks (WBANs)
<u>Ashutosh Bhatia</u> (Indian Institute Of Science, India); Ranjeet Kumar Patro (Samsung Electronics, India)

Enhancing Channel Assignment Performance in Wireless Mesh Networks Through Interference Mitigation Functions
Pavan Kumar Reddy M (IIT Hyderabad & Qualcomm India Private Limited, India); Srikant Manas Kala (IIT HYDERABAD, India); <u>Bheemarjuna Reddy Tamma</u> (IIT Hyderabad, India)

Tunable Synchronization in Duty-cycled Wireless Sensor Networks
Ravi Sharma and Ashok Singh Sairam (Indian Institute of Technology Patna, India); <u>Akash Yadav</u> (Indian Institute of Technology, Patna, India); Axel Sikora (University of Applied Sciences Offenburg, Germany)

An Asynchronous Algorithm for providing Energy Efficient Coverage and Connectivity in Wireless Sensor Networks
<u>Nishat Afshan Ansari</u> (Shri Ramdeobaba College of Engineering & Management, Nagpur, India); Umesh Deshpande (Visvesvaraya National Institute of Technology (VNIT) Nagpur, India); Sahista Mohammad (Shri Ramdeobaba College of Engineering & Management, Nagpur, India)

OPPRES: OPPortunistic Routing algorithm for routing messages in Emergency Situations using Vehicular Delay Tolerant Network
<u>Milind Penurkar</u> (VNIT, Nagpur & MIT College of Engineering, Pune, India); Umesh Deshpande (Visvesvaraya National Institute of Technology (VNIT) Nagpur, India)

C 8 Nov 0900 : Wireless IoT 1

Room: Hall C
Chair: Muzammil Hussain (Samsung Electronics & IEEE, India)

Real Time Monitoring of Power Resources with Surveillance based on M2M Communication
Pankaj Kumar Dalela (C-DOT, India); Saurabh Basu, Sabyasachi Majumdar and Ankita Saldhi (Research Engineer, India); Vipin Tyagi (C-DOT, India)

Scheduling of Resource Blocks for Device-to-Device Communications in LTE-Advanced Networks
Divya Murali, Karun Verghese and Keerthana Ravi (PES University, India); Vamsi Krishna Tumuluru (Peoples Education Society University, India)

Modeling Performance of IoT Networks
Sriram Sankaran (Amrita University, India)

A Novel Scheduling Algorithm to Maximize the D2D Spatial Reuse in LTE Networks
Badrinaaraayanan Akilesh and Vanlin Sathya (Indian Institute of Technology Hyderabad, India); Arun Ramamurthy and Bheemarjuna Reddy Tamma (IIT Hyderabad, India)

Energy-Efficient Multi-cell Massive MIMO: How Many Antennas Should We Use?
K N R Surya Vara Prasad (The University of British Columbia, Canada); Vijay Bhargava (University of British Columbia, Canada)

M 8 Nov 0900: WIN with WIT - Women In Engineering Mini-Conference Inaugural Session

Keynote Talks
Swati Kamat (Airtel), Tulika Pandey (MEITY), Pallavi Srinivasa (Cisco)

Room: Main Auditorium
Chair: Mydhili Nair (MSRIT, India)

Tuesday, November 8, 10:30 - 11:00

R 8 Nov 1030: Tea Break

Room: Reception Area

Tuesday, November 8, 11:00 - 11:30

M 8 Nov 1100: Keynote Talk on Hybrid MAC Protocols for Low Delay Scheduling

Anurag Kumar (IISc)

Room: Main Auditorium

We consider the Medium Access Control (MAC) problem in resource-constrained ad-hoc wireless networks typical of the Internet of Things (IoT). Due to the delay-sensitive nature of emerging IoT applications, there has been increasing interest in developing medium access control (TDMA) protocols in a slotted framework. The design of such MAC protocols must keep in mind the need for contention access at light traffic, and scheduled access in heavy traffic (leading to the long-standing interest in hybrid, adaptive MACs). We consider the collocated node setting and require that each node acts autonomously only on the basis of locally available information. We propose QZMAC, an extension of ZMAC, which is designed using motivations from our extensions of certain delay-optimality theory from the literature. Practical implementation issues are outlined. Finally, we show, through simulations, that QZMAC provides mean delays very close to the minimum achievable in this setting, i.e., that of the centralized complete knowledge scheduler.

Tuesday, November 8, 11:30 - 12:30

M 8 Nov 1130: Panel Discussion on IoT - Experiences from Early deployments

Geetha Manjunath (XEROX), Yogesh Simmhan (IISc), Prateep Mishra (TCS), N C Narendra (Ericsson), Jayaram Beladakere (Cisco), Tulika Pandey (MEITY)

Room: Main Auditorium

Tuesday, November 8, 12:30 - 13:00

M 8 Nov 1230: Keynote Talk on Micro operators for vertical specific service delivery in 5G mobile business ecosystem

Mati Latva-Aho (Univ of Oulu)

Room: Main Auditorium

ABSTRACT: Fast emergence of future digital services requires timely and cost-efficient availability of high-quality wireless connectivity particularly in indoor locations. The traditional mobile communication business ecosystem is facing a disruption with the advent of 5G that will connect billions of devices to serve versatile location and case specific needs in parallel with the provisioning of traditional mobile broadband services. 5G with its developments towards higher carrier frequencies and virtualized network functions will change the traditional stakeholder roles and open up the mobile business ecosystem for new entrants through local spectrum licenses and leasing of required infrastructure and capacity on-demand. This will call for complementary business models to current mobile network operator (MNO) dominance for efficient scaling across different vertical sectors with stringent case specific local requirements.

The concept of micro operators (uO) has recently been proposed for local service delivery in 5G to build indoor small cell communication infrastructure and offer context related services and content in specific locations with locally issued spectrum licenses. In this presentation/paper we will expand the notion of uOs and describe its role as a new stakeholder in the future 5G mobile business ecosystem to complement existing MNOs' offerings. We will depict the evolution path for the emergence of uOs including both technical and regulatory aspects in the upcoming sharing economy approach where revenues can be made using assets that belong to other stakeholders in a collaborative manner. Finally, we will consider potential application areas for uOs in different vertical sectors by identifying use cases and business opportunities for offering vertical specific local services and content.

Tuesday, November 8, 13:00 - 14:00

R 8 Nov 1300: Lunch

Room: Reception Area

Tuesday, November 8, 14:00 - 15:30

A 8 Nov 1400: WIE Workshop for Academia: Design Thinking

Kajal Arunkumar (Intuit)

Room: Hall A
Chair: DN Sujatha (BMSCE, India)

B 8 Nov 1400: WIE Workshop for Industry: Leadership Skills

Yeshasvini Ramaswamy (e2e)

Room: Hall B
Chair: DN Sujatha (BMSCE, India)

C 8 Nov 1400: Wireless IoT 2

Room: Hall C
Chair: Vijay Sivaraman (University of New South Wales, Australia)

Leveraging Decoupling in Enabling Energy Aware D2D Communications
Mukesh Giluka (Indian Institute Of Technology Hyderabad, India); Sibgath Khan, Vanlin Sathya and Antony Franklin A (Indian Institute of Technology Hyderabad, India)

Subcarrier Sharing Scheme for Overlay and Cooperative D2D Communication in Cellular Networks
Naveen Gupta (IIIT-DELHI, India); Vivek A Bohara (Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India)

Security Enhancement in Tower Monitoring System of oneM2M Network
Anurag Yadav, Pankaj Kumar Dalela and Vipin Tyagi (C-DOT, India)

Communication System Design for White-Fi (802.11af)
Asif Ahmad A S (BMS College of Engineering & Intel Corporation, India); Bharath Keshavamurthy, Abhay Narasimha K S and Mahesh N (BMS College of Engineering, India); Suma Mn (BMS College of Engineeering & BMS College of Engineering, India)

M 8 Nov 1400: Industry and Startup Showcase Presentations

Room: Main Auditorium
Chairs: Annam Thyaga Raja Kishore, kishore (CV RAMAN NAGAR & Utl Technologies, India), Lakshmi Yamujala (Centre for Development of Telematics, India)

Tuesday, November 8, 15:30 - 16:00

R 8 Nov 1530: Tea Break

Room: Reception Area

Tuesday, November 8, 16:00 - 18:00

M 8 Nov 1600: Industry and Startup Showcase Presentations

Chair: Annam Thyaga Raja Kishore, kishore (CV RAMAN NAGAR & Utl Technologies, India)

A 8 Nov 1600: Panel Discussion on Career Growth for Women Professionals

Vidya Laxman (TESCO) Sushma C-(Intuit), Vijaya K Matt (IBM), Moderator: Yeshasvini (e2e)

Room: Hall A

B 8 Nov 1600 : WiE Technical Session 1

Room: Hall B
Chair: Sakshi Kaushal (Panjab University, India)

Improving Energy Efficiency Of Computing Servers And Communication Fabric In Cloud Data Centres
Soma Prathibha (Sri Sai Ram Engineering College, India)

Optimal Power Allocation for Cognitive Radio Multicast Networks under Primary Users' Outage Loss Constraint
>Sangeeta Bhattacharjee (Indian Institute of Engineering Science and Technology, Shibpur, India); Tamaghna Acharya (Indian Institute of Engineering Science and Technology Shibpur, India); Uma Bhattacharya (Bengal Engineering & Science University, Shibpur, India)

Implementation of MapReduce over structured Peer-to-Peer overlay of underutilized resources
>Shashwati Banerjea (Motilal Nehru National Institute of Technology Allahabad); Mayank Pandey, Manoj Gore, Rishabh Dugar and Ashish Kumar (Motilal Nehru National Institute of Technology Allahabad, India)

SDN based Implementation of Publish/Subscribe Paradigm using OpenFlow Multicast
>Misha Hungyo (NOKIA, India); Mayank Pandey (Motilal Nehru National Institute of Technology Allahabad, India)

C Nov 8 - 16:00 WiE Technical Session 2

Room: Hall C
   Chair: Aparna Vadde (GE Research, India)

Opportunistic and Cooperative Hybrid Spectrum Access Protocol for Cognitive Radio Network
>Shubha Sharma (Nanyang Technological University, Singapore); Vivek A Bohara (Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India); Mansi Peer (Indraprastha Institute of Technology, Delhi, India)

A Transfer Learning Framework for Energy Efficient Wi-Fi Networks and Performance Analysis Using Real Data
>Shreyata Sharma and Sumit Jagdish Darak (IIIT-Delhi, India); Anand Srivastava (Indraprastha Institute of Information Technology Delhi, India); Honggang Zhang (Zhejiang University & Université Européenne de Bretagne (UEB) and Supelec, P.R. China)

An Efficient Mobile Sink Routing in Wireless Sensor Network Using Dynamic Steiner Tree
>Meera G S (University of Kerala, India); Vaibhav Gupta (BITS Pilani KK Birla Goa Campus, India); Priya Sekhar (Kerala University, India); Sreejith V (BITS-Pilani, KK Birla Goa Campus, India); Anupama K. r (BITS Pilani K K Birla, Goa Campus, India)

Energy Consumption Evaluation and Analysis in 6LoWPAN using Real and Emulated Zolertia Z1 Motes
>Shubhangi Kharche (Usha Mittal Institute of Technology SNDT, India); Sanjay Pawar (Usha Mittal Institute of Technology, SNDT, India)

Cloud based Content Delivery Network using Genetic Optimization Algorithm for Storage Cost
>Sajitha Banu (National Institute of Technology, India)

Tuesday, November 8, 18:00 - 18:30

M 8 Nov 1800: Networking Break

Tuesday, November 8, 18:30 - 19:00

M 8 Nov 1830: Pre-Banquet Special Session - 10th Anniversary Felicitations & Awards

Tuesday, November 8, 19:00 - 19:45

M 8 Nov 1900: Stories from a Globetrotting IEEE Volunteer

Prof. Vijay Bhargava (University of British Columbia)

Room: Main Auditorium
   Chair: Vinod M. Vokkarane (University of Massachusetts Lowell, USA)

As an IEEE Volunteer for over three decades, the speaker has been fortunate to visit well over sixty countries. In this light hearted presentation, the speaker will recount a few interesting IEEE stories from his visit to India, Japan, USA, Russia, Argentina, and time permitting, China. The presentation is suitable for a general audience.

Tuesday, November 8, 20:00 - 21:30

G 8 Nov 2000: Banquet

Room: Main Guest House Lawns

Wednesday, November 9

Wednesday, November 9, 09:00 - 10:30

A 9 Nov 0900: Data Networking

Room: Hall A
   Chair: Sandip Chakraborty (Indian Institute of Technology Kharagpur, India)

BCON: Back pressure based Congestion Avoidance Model for Named Data Networking
   Ayush Agarwal (National Institute of Technology Karnataka, Surathkal, India); Mohit P. Tahiliani (National Institute of Technology Karnataka, Surathkal, India)

Towards Cost-Effective Capacity Provisioning for Fault-tolerant Green Distributed Data Centers
   Rakesh Tripathi (Indian Institute of Technology Guwahati, India); Vignesh S. (Indian Institute of Technology, Guwahati); Venkatesh Tamarapalli (Indian Institute of Technology Guwahati, India)

FlowFurl: A Flow-level Routing for Faulty Data Center Networks
   Kapil Sharma (IIT Jodhpur, India); Venkataramana Badarla (Indian Institute of Technology Jodhpur, India)

SDR based single channel S-AIS Receiver for Satellites using System Generator
   Gaurangi Sahay (Indian Space Research Organisation & India, India); Meghana P, Vadali Venkata Sravani and Prabha Venkatesh T (R V College of Engineering, India); Viswavardhan Karna (RV College of Engineering, India)

B 9 Nov 0900 : Multi-Hop Systems

Room: Hall B

BER Analysis of Improved Path Selection Criterion for Cluster-Based Multi-hop Cooperative Networks
    Hari Krishna Boddapati (IIT Delhi, India); Manav Bhatnagar (Indian Institute of Technology Delhi, India); Nagaraju Kakinada (IIT Delhi, India); Vemuri Sai Krishna (Indian Institute of Technology Delhi, India); Shankar Prakriya (Indian Institute of Technology, Delhi, India)

Performance Analysis of OFDM based Multiple Relay Cooperative AF System with Relay Selection and Nonlinear Power Amplifier
    Praveen Singya and Nagendra Kumar (Indian Institute of Technology, Indore, India); Vimal Bhatia (Indian Institute of Technology Indore, India)

Software-Defined Mobility in IP based Wi-Fi Networks: Design Proposal and Future Directions
    Krishna Singh (Motilal Nehru National Institute of Technology, India); Mayank Pandey (Motilal Nehru National Institute of Technology Allahabad, India)

Performance Analysis of IEEE 802.15.4 MAC Layer: Prospect for Multi-hop Networks
    Malyala Pavana Ravi Sai Kiran (IIT Hyderabad, India); Rajavaraprasad Yerra (IIT Hyderabad & Mhrd, India); Subrahmanyam Vuddagiri (IIT Hyderabad, India); P Rajalakshmi (Indian Institute of Technology Hyderabad, India)

Near Optimal Channel Assignment for Interference Mitigation in Wireless Mesh Networks
    Ranadheer Musham (IIT Hyderabad, India); Srikant Manas Kala (IIT HYDERABAD, India); Pavithra Muthyap (IIT Hyderabad, India); Pavan Kumar Reddy M (IIT Hyderabad & Qualcomm India Private Limited, India); Bheemarjuna Reddy Tamma (IIT Hyderabad, India)

C 9 Nov 0900: Privacy and Security

Room: Hall C

PPMUAS: A Privacy Preserving Mobile User Authentication System for Cloud Environment Utilizing Big Data Features
    Chandra Sekhar Vorugunti (Indian Institute of Information Technology- SriCity, India)

On the MitM Vulnerability in Mobile Banking Applications for Android Devices
    Srikanth Kaka (University of Hyderabad, India); Sastry and Rajib Maiti (IDRBT, India)

Node Revocation and Key Update Protocol in Wireless Sensor Networks
    Sarita Agrawal (Dhirubhai Ambani Institute of Information and Communication Technology, India); Manik Lal Das (DAIICT, India)

Scalable and Privacy-Preserving Authentication Protocol for Secure Vehicular Communications
    Shrikant Tangade (India, India)

Wednesday, November 9, 10:30 - 11:00

R 9 Nov 1030: Tea Break

Room: Reception Area

Wednesday, November 9, 11:00 - 11:30

M 9 Nov 1100: Keynote Talk on Next-Generation Telecom Infrastructure to Connect the Billions

Kumar Sivarajan (Tejas Networks)

Room: Main Auditorium

Abstract: We have billions of users, mainly humans, connected to the telecom network today. We expected to connect billions of things to the same infrastructure in the coming years. Traffic is predominantly data and voice is yet another app. Traffic growth grows unabated. We review how the telecom infrastructure is evolving to meet these requirements by developing and deploying new technologies, both optical and wireless. We will review OTN, MPLS-TP, 5G, SDN, CPRI, et al, and their place in the next-gen telecom infrastructure.

Wednesday, November 9, 11:30 - 12:30

M 9 Nov 1130: Panel Discussion on Next Generation Infrastructure to connect the Next Billion

Vipin Tyagi (CDOT), M V Gowtama (BEL), Jayaram Hanumanthappa (Infinera), Pravin Bhagwat (Mojo Networks), Deepak Kataria (IP Junction)

Room: Main Auditorium

Wednesday, November 9, 12:30 - 13:00

M 9 Nov 1230: Keynote Talk on Software Defined Networking (SDN) in Next-Generation Telecom Infrastructure: Some quick wins and the road ahead

Vijay Sivaraman (Univ of NSW)

Room: Main Auditorium

Abstract: SDN technology will undoubtedly shape the telecoms networks of the future - this talk will outline some much-needed "quick wins" along this long journey. We will show how SDN can reinvent home networking by providing a platform for value-add service creation; we will then demonstrate how SDN can provide better visibility and management of streaming video traffic in carrier and enterprise networks; and finally we will show how SDN can redefine the value of inter-domain interconnects. We will conclude with a short discussion on the potential for security to be the compelling use-case for SDN adoption.

Wednesday, November 9, 13:00 - 14:00

R 9 Nov 1300: Lunch

Room: Reception Area

Wednesday, November 9, 14:00 - 15:30

A 9 Nov 1400: Building Secure IoT Networks

Vinay M Tayur (Avaya), Vijaykumar Kabbin (Wipro), Nishant Krishna (Avaya), Sashank Dara (Cisco), Seema Sirivara (Avaya), Ajit Jha (L&T), Virendra Gupta (Huawei), Thomas Lee Sebastian (TCS)

Room: Hall A
  Chair: Nishant Krishna (Avaya, India)

B 9 Nov 1400 : Wireless Physical Layer Challenges

Room: Hall B

Comparative Analysis of Waveforms for Fifth Generation Mobile Networks
  Shashank Tiwari (Indian Institute of Technology Kharagpur, India); Sourav Chatterjee (Indian Institute Of Technology Kharagpur, India); Suvra Sekhar Das (Indian Institute of Technology Kharagpur, India)

Performance Analysis of Filtered PSM Signal Using Non-matched Receiver for UWB Communication
  Sanjeev Sharma (Indian Institute of Technology, Indore, India); Vimal Bhatia (Indian Institute of Technology Indore, India)

Downlink Interference Control through Adaptive DRX in a Carrier Aggregation Enabled LTE-Advanced Heterogeneous Networks
  Irfan Baig (Wipro Limited & International Institute of Information Technology - Bangalore, India); Saptarshi Chaudhuri (IIIT-B, India); Debabrata Das (International Institute of Information Technology - Bangalore, India)

Joint Spectral Shaping and Power Loading for OFDM-based Cognitive Radio
  Manoranjan Rai Bharti (Indian Institute of Technology Roorkee, India); Debashis Ghosh (Indian Institute of Technology (IIT) Roorkee, India)

Least Square Solver for Wireless Communication System
  Vanita Pawar (Defence Institute of Advanced Technology); Krishna Naik Karamtot (Defence Institute of Advanced Technology, India)

AUC Analysis of Centralized Cooperative-MIMO Spectrum Sensing over Generalized Faded Reporting Channel
  Sanjay Singh Yadav (National Institute of Technology, Tiruchirappalli & NIT Trichy, India); S Hariharan and Muthu Palanivel Chidambara Nathan (National Institute of Technology, India)

C 9 Nov 1400: Learning in Networks

Room: Hall C

Score-based Objective Quality of Experience Assessment of DASH Adaptation Algorithms
  Hema Kumar Yarnagula and Venkatesh Tamarapalli (Indian Institute of Technology Guwahati, India)

Geo-Intelligence based Automatic Verification and Optimization of Manual Field Survey for OFC Network Planning
  Pankaj Kumar Dalela (C-DOT, India); Saurabh Basu (Research Engineer, India); Anurag Yadav (C-DOT, India); Sabyasachi Majumdar (Research Engineer, India); Niraj Kushwaha, Arun Yadav, Prashant Bansal and Vipin Tyagi (C-DOT, India)

A Probabilistic Anomaly Detection Scheme to Detect DHCP Starvation Attacks
  Nikhil Tripathi and Neminath Hubballi (Indian Institute of Technology Indore, India)

Enhancing effectiveness of intrusion detection systems: A hybrid approach
  Basant Subba (Indian Institute of Technology, Guwahati, India)

M 9 Nov 1400: Workshop on 5G Wireless Technology Challenges & Opportunities (WiTCO 2016)

Prasad (Samsung), A Chockalingam (IISc), Neelesh Mehta (IISc),

Room: Main Auditorium
    Chairs: Dilip Krishnaswamy (IBM Research, India), Navin Kumar (Amrita University & School of Engineering, India), Arpita Thakre (Amrita Univ, India)

Wednesday, November 9, 15:30 - 16:00

R 9 Nov 1530: Tea Break

Room: Reception Area

Wednesday, November 9, 16:00 - 18:00

A 9 Nov 1600: Connecting The Next Billion

Room: Hall A
    Chair: VS Umakanth (CDOT, India)

Remote Monitoring of Camera based Respiration Rate Estimated by Using Occlusion of Dot Pattern
    Vishnu Vardhan Makkapati (Myntra Designs Pvt. Ltd., India); Sai Saketh Rambhatla (University of Maryland, USA)

Adaptive Redistribution of Resources for Ensuring Service Quality in a Post Disaster Situation Analysis Network
    Saurav Kumar and Kartik Vermun (IIT Kharagpur, India); Sandip Chakraborty (Indian Institute of Technology Kharagpur, India)

Disaster Messenger: An Android based Infrastructure Less Application for Post Disaster Information Exchange
    Suman Bhattacharjee (Heritage Institute of Technology, Kolkata, India); Sourav Kanta, Saket Modi and Madhumita Paul (IIEST, Shibpur, India); Sipra DasBit (Bengal Engineering and Science University, India)

An Overlay Management Strategy to Improve Peer Stability in P2P Live Streaming Systems
    Shilpa Budhkar and Venkatesh Tamarapalli (Indian Institute of Technology Guwahati, India)

B 9 Nov 1600: Emerging Technologies

Room: Hall B
    Chair: Mohit P. Tahiliani (National Institute of Technology Karnataka, Surathkal, India)

MIL-STD-1553 Based Wireless Visible Light Communication System
    Sandip Das (IIT Kharagpur, India); Nilesh Chandrakar and Suvra Sekhar Das (Indian Institute of Technology Kharagpur, India)

Mitigation of Beam Blocking in mmWave Indoor WPAN Using Dynamic Control Delegation Based Approach
> Arijit Bhattacharjee (Indian Institute of Technology Guwahati & Tata Consultancy Services Ltd, India); Ratnajit Bhattacharjee (Indian Institute of Technology, Guwahati, India); Sanjay Kumar Bose (I.I.T. Guwahati, India)

Performance Analysis of OFDM mmWave Communications with Compressive Sensing Based Channel Estimation and Impulse Noise Suppression
> PraveenKumar Korrai (Indian Institute of Technology Kharagpur, India); Debarati Sen (Indian Instutute of Technology Kharagpur, India)

A NS-3 Module for LTE UE Energy Consumption
> Thomas Valerrian Pasca S (IIT Hyderabad, India); Badrinaaraayanan Akilesh (Indian Institute of Technology Hyderabad, India); Arjun V Anand and Bheemarjuna Reddy Tamma (IIT Hyderabad, India)

On Reducing Energy Consumption as a Function of Space and Time in Mobile Devices
> Arun Tomy and Liji P i (College of Engineering Trivandrum, India); Manoj Bs (Indian Institute of Space Science and Technology & California Institute of Telecommunication and IT, India)

Braille-8 - the Unified Braille Unicode System
> Anupam Kumar Garg (IIT Kanpur & Vistrit Gyan, India)

C 9 Nov 1600: Network Performance

Room: Hall C
> Chair: Annapurna Patil (M S Ramaiah Institute of Technology, India)

Resilient Cloud Network Mapping with Virtualized BBU Placement for Cloud-RAN
> Carlos Colman-Meixner (University of California, Davis, USA); Gustavo Bittencourt Figueiredo (Federal University of Bahia, Brazil); Matteo Fiorani (KTH Royal Institute of Technology, Sweden); Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy); Biswanath Mukherjee (University of California, Davis, USA)

Evaluation of OTN solutions for Metro Networks in Asia
> Sourav Das and Anilkumar Kagathur Nagaraja (Infinera, India); Harshad Sardesai (Infinera, USA)

A Comparison of Network Bandwidth Efficiencies Among Various Multi-layer Network Architectures
> Abishek Gopalan, Onur Turkcu and Biao Lu (Infinera, USA); Snigdho Bardalai (INFINERA CORP, USA); Parthiban Kandappan (Infinera, USA)

Auxiliary graph based energy-efficient dynamic connection grooming for elastic optical networks
> Pramit Biswas, Suman Kr. Dey and Aneek Adhya (Indian Institute of Technology Patna, India)

A Measurement Study of Energy Consumption and QoE Trade-offs for DASH in Mobile Devices
> Hema Kumar Yarnagula (Indian Institute of Technology Guwahati, India); Ramkumar Vooda (IIT Guwahati, India); Venkatesh Tamarapalli (Indian Institute of Technology Guwahati, India)

Traffic Adaptive Reconfiguration in Virtual Optical Bus Networks
> Sandeep Kumar Singh (TU Braunschweig, Germany); Manivasakan (IIT, Chennai, India)

M 9 Nov 1600: Workshop on 5G Wireless Technology Challenges & Opportunities (WiTCO 2016)

Keshav Bapat (Keysight), Rajesh Banda (NOKIA), Jomy Jose (L&T)

Room: Main Auditorium
> Chair: Arpita Thakre (Amrita Univ, India)

Wednesday, November 9, 18:00 - 18:30

M 9 Nov 1800: Concluding Session

Chair: Pamela Kumar (Cloud Computing Innovation Council of India, India)