

2015 IEEE Region 10 Symposium (TENSYP 2015)

**Ahmedabad, India
13 – 15 May 2015**



**IEEE Catalog Number: CFP15TEO-POD
ISBN: 978-1-4799-1783-9**

2015 IEEE Region 10 Symposium

TENSYMP 2015

Table of Contents

International Advisory Committee.....	viii
Technical Program Committee.....	ix
Organizing Committee.....	xvii
Keynote Lectures and Tutorials.....	xviii

Session 1: IoT Architectures and Standards

IEEE 802.15.4-PHY Packet Detection and Transmission System With Differential Encoding For Low Power IoT Networks	1
<i>Y. Siva Krishna, V. Subrahmanyam, M.A. Zubair, and P. Rajalakshmi</i>	
Architectural Considerations for a Centralized Global IoT Platform	5
<i>Rajesh Venkatesan, Madhava Venkatesh Raghavan, and K. Satya Sai Prakash</i>	
Service Centric Markov Based Spectrum Sharing for Internet of Things (IoT)	9
<i>Subha P. Eswaran and Jyotsna Bapat</i>	
System Behavior and Improvements for M2M Devices Using an Experimental Satellite Network	13
<i>Pavan Bhawe and Panos Fines</i>	
A Framework for Implementation of Wireless Body Area Network over Software Defined Radios	17
<i>Tanumay Manna, Iti Saha Misra, Salil Kumar Sanyal, and Tamal Chakraborty</i>	
Coverage Modelling of Molecular Communication Based Nano Machines Network for the IoT	21
<i>Prachi Raut and Nisha Sarwade</i>	

Session 2: IoT Enabling Technologies

Smart Robotic Assistant	25
<i>Akshay Kumar, Anurag Mishra, Pooja Makula, Krit Karan, and V.K. Mittal</i>	
Real Time Net Zero Energy Building Energy Manager with Heterogeneous Wireless Ad hoc Network Adaptable To IoT Architectures	29
<i>Raja Vara Prasad Y., Shubham Goel, Rajalakshmi P., and U.B. Desai</i>	

Operating Systems for IoT Devices: A Critical Survey	33
<i>Padmini Gaur and Mohit P. Tahiliani</i>	
Computation of Coverage Backup Set for Wireless Video Sensor Network	37
<i>Vijay Ukani, Keyur Patel, and Tanish Zaveri</i>	
User Interactive and Assistive Fleet Management and Eco-Driving System	41
<i>Bhagyeshwari Chauhan, Avni Jain, Tanmay Chaturvedi, and Sandeep Saini</i>	
Towards a Wearable Non-Invasive Low-Cost Device for Measuring Physiological Indices	45
<i>Dhaval Solanki, Poojan Oza, and Uttama Lahiri</i>	

Session 3: IoT Services and Applications

Leveraging Internet of Things Technologies and Equipment Data for an Integrated Approach to Service Planning and Execution	49
<i>Sukriti Jalali and Ishu Bhatnagar</i>	
ParaSense—A Sensor Integrated Cloud Based Internet of Things Prototype for Real Time Monitoring Applications	53
<i>K.G. Srinivasa, Nabeel Siddiqui, and Abhishek Kumar</i>	
Waiting Time Analysis for Delay Sensitive Traffic in Internet of Things	58
<i>Reema Sharma, Navin Kumar, Namratha B. Gowda, and T. Srinivas</i>	
Data Management for Internet of Things	62
<i>Trupti Padiya, Minal Bhise, and Prashant Rajkotiya</i>	
Scalable Micro-blogging in Mobile Social Communities	66
<i>Zunnun Narmawala and Sanjay Srivastava</i>	
Smart Shelfie—Internet of Shelves: For Higher On-Shelf Availability	70
<i>Rakesh Satapathy, Srikanth Prahlad, and Vijay Kaulgud</i>	

Session 4: IoT Data Analytics and Security

Ontology Based Approach for Event Detection in Twitter Datastreams	74
<i>R. Kaushik, Apoorva Chandra S., Dilip Mallya, J.N.V.K. Chaitanya, and Sowmya Kamath S.</i>	
QRGQR: Query Relevance Graph for Query Recommendation	78
<i>Sejal D., Shailesh K.G., Tejaswi V., Dinesh Anvekar, Venugopal K.R., S.S. Iyengar, and L.M. Patnaik</i>	
Situation Awareness Measurement Enhanced for Efficient Monitoring in the Internet of Things	82
<i>Audrey Ann Gendreau</i>	
GeoSpatial Access Control for Mobile Devices	86
<i>Saritha Arunkumar, Berker Soyluoglu, Murat Sensoy, Mudhakar Srivatsa, and Muttukrishnan Rajarajan</i>	

Design challenges and security issues in the Internet of Things	90
<i>Subho Shankar Basu, Somanath Tripathy, and Atanu Roy Chowdhury</i>	
Author Index	94