

Workshop on the Internet of Things



Organized by

The IEEE Reliability Society and the IEEE IoT Initiative

With Multi-Society Sponsorship and held as part of



The 2017 IEEE International Conference on
Software Quality, Reliability & Security

July 25-29, 2017 • Prague, Czech Republic
<http://paris.utdallas.edu/qrs17>



Tuesday July 25th, 2017

Please join us for a full day workshop devoted to the Internet of Things. At this event you will be exposed to talks that describe what the Internet of Things is all about, why it is an important part of the future, and what are the important ingredients for successful products and services in the IoT space. The talks will cover the many manifestations of IoT and how it is already impacting almost all verticals of the World Economy and growing at a rapid pace in adoption and influence. The talks

will cover the IoT landscape and identify trends, who the players are, and what technologies are important.

The vision for IoT is to use common infrastructure to connect individual devices with each other, and with people, in a way where digital data, and analysis drives decision that can be exercised and influenced remotely. Software, Algorithms, and Artificial Intelligence techniques play a key role and ultimately determine the level of quality, safety, and reliability of IoT products and services. This is particularly important, as more and more critical applications become a part of IoT.

The lineup of speakers includes experts and practitioners who will discuss how IoT is important in their industry, what they see as the ingredients for success, the technical and business challenges, and their views of how the Internet of Things is likely to evolve. In keeping with the theme of the QRS2017 conference the focus will be on issues of software quality, safety, security, and reliability and how the use of common IoT infrastructure - communications, computing, storage, data and analytics, and systems for remote control of critical functions contribute to the value from IoT.

At the end of the day there will be a moderated panel discussions, with audience participation. It will be devoted to highlighting the key technical, business, and regulatory considerations for IoT deployments and identifying concrete actions that could speed the deployment of IoT offerings and meet the challenges of quality, safety, reliability, security, and scale.

Whether you are an IoT enthusiast, a researcher, a manager, a technologist, a strategist, an administrator, in marketing, or someone working on IoT products and services, you will find this an informative day. You will have a chance to network with your peers and with the experts that are part of this workshop. We also hope that you will get a chance to participate and contribute to the discussion and have some of your questions about IoT answered.

Our speakers and panelists will cover:

- An IoT Overview
 - All about IoT
 - Software Systems and IoT
 - Eco-Systems for critical functions in IoT
- Critical IoT Applications
 - Industrial Applications
 - Aerospace Applications
 - Healthcare
- IoT Technologies
 - Artificial Intelligence and Autonomy
 - Machine Learning
 - Software for Distributed Systems

- Special Topics
 - Security
 - Testing

Scheduled and Invited Speakers Include:

Miroslav Bures	- Czech Technical University, Prague, CZ - Department of Computer Science, Software Testing Intelligence Lab
Adam Drobot	- Chairman, OpenTechWorks, Inc. and Chair IEEE IoT Activities Board
Latif Ladid	- University of Luxembourg and President IPV6 Forum
Anika Schumann	- IBM Research, Zurich, Switzerland
Michael Wahler	- ABB Central Research Center, Switzerland
Marek Ujejski	- WASKO Capital Group, Warsaw, Poland

Schedule and Agenda Tuesday July 25th, 2017

1. Introductions and opening remarks	09:00am - 09:15am
2. Overview of IoT	09:00am - 10:30am
• Adam Drobot	
• Latif Ladid	
3. Coffee Break	10:30am - 10:45am
4. Applications of IoT with Critical Functions	10:45am - 12:15pm
• Marek Ujejski	
• Adam Drobot	
5. Lunch	12:30pm - 01:30pm
6. Technologies for IoT	01:30pm - 03:00pm
• Anika Shumann	
• Michael Wahler	
7. Coffee Break	03:00pm - 03:15pm
8. Special Topics for IoT	03:15pm - 04:00pm
• Miroslav Bures	
9. Roundtable Panel Discussion and Wrap-up	04:00pm - 05:30pm
10. Reception and Mixer	05:30pm - 07:00pm

The Workshop is organized by IEEE IoT Activities and the IEEE Reliability Society and includes:

Adam Drobot	"Adam Drobot - Wayne PA" <adam.drobot@gmail.com>
Adam Greenberg	" Adam Greenberg - New York" <a.greenberg@comsoc.org>
William Grossmann	"Bill Grossman - Berlin" <williamgrossmann@yahoo.com>
Latif Ladid	"Latif Ladid - Luxemburg" <latif.ladid@uni.lu>
Shou-You Lee	"Shou-Yu David Lee UT Dallas" <davidsf1222@gmail.com>
Yihao Li	"Yihao Li - UT Dallas" <derick871231@gmail.com>
Karen Pannullo	"Karen Pannullo - New Jersey" <k.pannullo@comsoc.org>
Lee Stogner	" Lee Stogner - " <l.stogner@ieee.org>
Jeff Voas	"Jeff Voas - Gaithersburg" <jeffrey.m.voas@gmail.com>
Eric Wong	" Eric Wong - UT Dallas" <ewong@utdallas.edu>

Invited Speakers and Short Biographies

Miroslav Bures, Software Testing Intelligence Lab, Department of Computer Science, Czech Technical University, Prague



Dr. Miroslav Bures is a senior member of research group STILL (Software Testing Intelligent Lab) located in Dept. of Computer Science, Czech Technical University in Prague. In his research, he focuses on more efficient software testing and quality assurance methods, in particular, test automation architectures and model-based testing. His research interests also include quality assurance methods for the Internet of Things solutions. He has published more than 20 papers on software testing research and currently has a new Czech book on "Efficient Software Testing." He participates in the ISTQB Academia work group. As part of his industry track record, in the past, he managed testing

teams on several large transformation and integration projects, he has managed the testing department of Cap Gemini CZ and SK and reviewed and consulted on testing processes for a number of large Czech companies.

Adam Drobot, Chairman OpenTechWorks, Inc. and Chair IEEE IoT Activities Board



Dr. Adam T. Drobot is a technologist with management expertise and over forty years of experience with business, government, and academia. Today his activities include strategic consulting, start-ups, and participation in industry associations and government advisory bodies. He is the Chairman of the Board of OpenTechWorks, Inc. a company specializing in open source software. Previously he was the Managing Director and CTO of 2M Companies in Dallas, TX, from 2010-2012, and President of the

Applied Research and Government Business Units at Telcordia Technologies and the company's CTO from 2002 to 2010. Prior to that, Adam managed the Advanced Technology Group at Science Applications International Corporation (SAIC). He also served as Senior Vice President for Science and Technology as part of his 27 years of service at SAIC from 1975 to 2002.

Adam has been the principal or key participant in the development of several large, scientific code systems and software for managing the design and production of complex platforms. He has published more than 100 journal articles, and is a frequent contributor to industry literature. He currently holds 26 patents. Adam is the 2007 recipient of IEEE's Managerial Excellence Award. He is currently a member of Several Corporate Boards, the FCC Technology Advisory Council, and he also Chairs the Awards Recognition Council for the IEEE and the IEEE IoT Activities Board. Adam is on the Board of the Telecommunications Industry Association and Chairs the TIA Technology Committee. He holds a BS in Engineering Physics from Cornell University and a PhD. in Plasma Physics from the University of Texas.

Latif Ladid, University of Luxembourg and Chair IPV6 Forum



Latif is President of the IPv6 Forum, is a professor at the University of Luxembourg. He is a Senior Researcher in S&T. He works on multiple European Commission Next Generation Technologies IST Projects: 6INIT, www.6init.org – First Pioneer IPv6 Research Project; 6WINIT, Euro6IX, www.euro6ix.org; Eurov6, www.eurov6.org; NGNi, www.ngni.org; Project initiator of SEINIT, www.seinit.org and SecurIST, www.securitytaskforce.org.

Latif initiated the new EU project u-2010 to research Emergency & Disaster and Crisis Management, www.u-2010.eu, re-launched the Public Safety Communication Forum, www.publicsafetycommunication.eu, supported the new IPv6++ EU Research Project called EFIPSANS, www.efipsans.org and the new safety & Security Project using IPv6 called Secricom, www.secricom.eu and co-initiated the new EU Coordination of the European Future Internet Forum for Member States called ceFIMS: www.ceFIMS.eu.

He holds the following positions: President, IPv6 FORUM www.ip6forum.org, Chair, European IPv6 Task Force www.ipv6.eu, Emeritus Trustee, Internet Society www.isoc.org, Board Member IPv6 Ready & Enabled Logos Program and Board Member World Summit Award www.wsis-award.org.

Latif is also a Member of 3GPP PCG (www.3gpp.org), 3GPP2 PCG (www.3gpp2.org), Vice Chair, IEEE ComSoc EntNET (www.comsoc.org/~entnet/), Member of UN Strategy Council, member of IEC Executive Committee, Board member of AW2I, Board Member of Nii Quaynor Institute for Research in Africa, and member of the Future Internet Forum EU Member States, representing Luxembourg.

Anika Schumann - IBM Research, Zurich, Switzerland



Anika manages IBM Research's world-wide Cognitive Internet of Things strategy that focuses on five areas: Cognitive for IoT Solutions, Privacy & Security, Blockchain, Edge Computing, and Platform. Her research work aims at exploiting and advancing Artificial Intelligence methods for fault identification, reduced energy use, and increased occupant comfort in buildings, and at utilizing semantic technologies for various IoT application.

Prior to moving to Zurich she worked as a Research Strategist at IBM's TJ Watson Research Center, New York, USA where she evaluated, recommended, and shaped topics and recommendations that define IBM's strategic directions. Initially she joined IBM as a Researcher in Dublin, Ireland where she led the Cognitive Buildings research work.

Before joining IBM she was a researcher at the Cork Constraint Computation Centre where she was working on an intelligent decision support system that assists facility managers in operating buildings efficiently.

She received her PhD from the Australian National University where she worked on the automated fault diagnosis of large-scale discrete-event systems like telecommunication or power supply networks.

Marek Ujejski - WASKO Capital Group, Poland



Marek Ujejski currently works for the WASKO Capital Group as a Board Advisor for Information Technology Security. He was formerly the Deputy Director of the IT Department at the National Health Fund (NFZ) in Poland where he was responsible for planning IT investments, project management and IT infrastructure. He was a one of the main authors of the document: "*Strategy for NFZ information resources in 2007-2010.*" He is the also behind the idea for developing a medical services register and the co-author of "*Medical Service Register II (Rejestr Usług Medycznych RUM II).*" Marek served as the Polish representative in the EU working structures (CWA)

drafting the project standard for the electronic European Health Insurance Card (eEHIC) and a member of eIDAS Expert Group established by the European Commission. He was also involved in the preparations of the project for national medical insurance using a crypto processor card for authentication of patients and authorization of medical transactions. His specialty is privacy sensitive medical Data Bases using various cryptography solutions. He is a frequent speaker at conferences in this domain.

Throughout his career he has gained vast of experience having worked as an IT Manager for 12 years in the banking sector, within which he worked on the largest IT project in Poland. He also led the implementation of the first VISA Electronic card in Poland and "II\IG BSK", the unique project of IT system outsourcing in the *Card and Cheque Centre in PeKaO S.A.* He has been a member of supervisory boards of two companies in the banking sector.

He has taught "Assessment methods for IT investment profitability" at the Warsaw University of Technology, at the postgraduate level. He is currently working as a security IT expert and auditor. Marek is the deputy chairman in The Polish IT Association. He has earned a Masters Degree from the Silesian University of Technology in Automation and Digital Technology, and a degree from the Silesia University in Theoretical Physics. He has also completed banking automation training at Northwestern University (USA) and has been recognized as a CISM (Certified Information Security Manager) in 2004 by the ISACA Certification Board

Michael Wahler - ABB Corporate Research Center, Switzerland



Michael Wahler is an experienced team leader and researcher specializing in Software Technologies, IoT Architectures, and Reliable Control Systems. He is located at the ABB Corporate Central Research Center in Switzerland. During his professional career he has managed global R&D projects and has led an international team of computer scientists working basic and applied research. He is a software and digitization enthusiast. His technical skills range from real-time embedded systems to distributed systems, from model-driven development to C++ programming, and from research and development to project management and line management. He has co-authored more than 30 scientific publications and has more than a dozen patent applications. He obtained his PhD degree from ETH Zurich and an MSc degree in Computer Science from the Technical University of Munich.