20th Innovations in Clouds, Internet and Networks

7 – 9 March 2017
Paris - France

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PARIS
March 7 - 9, 2017

ICIN 2017

Welcome Message from the Chairman of the Technical Program Committee

As the Chairman of the Technical Programme Committee, I invite you to participate in the ICIN 2017 conference on 'Innovations in Clouds, Internet and Networks', scheduled on March 7-9, 2017 in Paris.

ICIN conferences have been bringing together leading Internet and telecom experts from industry, universities and government worldwide.

The ICIN2017 edition is embracing several main aspects about the ongoing digital business transformation of Telecommunications. In fact, SDN and NFV are two enabling technologies of an overall systemic transformation called "Softwarization" which is steering the evolution both of Networks and Service Platforms (e.g., through Cloud and Edge Computing architectures) even up to future terminals, machines and smart objects (e.g., through Fog Computing).

ICIN2017 will focus on some key areas of this systemic transformation: architectural delayering, simplifications and optimization of the operational processes (e.g., through orchestrators and new paradigms of OSS/BSS capable of managing the complexity and heterogeneity of SDN and NFV infrastructures), development of flexible and programmable "platforms of platforms", the exploitation of Big Data by means of data mining and cognitive technologies. If mastering the software is recognized a must for a successful digital business transformation, standardization of open source software solutions and interfaces is still felt to be a hot issue to be discussed during the Conference.

The 31 accepted papers, together with the 5 keynotes speeches, were organized into four technical Tracks: Network and Service IT-zation, Internet of Things, Actionable Big Data and Artificial Intelligence, Control Orchestration and Management and Policy

The scientific success of the workshop was due to hard work of a lot of people.

Our appreciations goes to the Authors of the papers, the keynote Speakers, the Track Chairs and the Members of the Technical Program, Steering Committees and the IAB. Looking forward to meeting you at #ICIN2017!
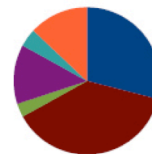
Antonio Manzalini
Chairman of the ICIN 2017 Technical Program Committee

Who is ICIN

Since 1989, the mission of the ICIN series of conferences is to provide an international technical forum for experts from industry and academia to exchange ideas and present results on evolving communications services. ICIN is a peer review event. The conference program is constructed by an independent Technical Program Committee consisting of subject experts from a wide variety of industry players. The 2016 edition attracted 186 delegates from various countries, firms and functions.
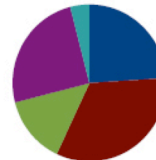
WHO YOU WILL MEET?

Industry Experts and Decision Makers

- Director/CxO 29%
- Research/Design Engineer 38%
- Product Manager 3%
- Systems Architect/Project Manager 13%
- Marketing/Sales 4%
- Consultant/Analyst 13%

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- Operator 24%
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- Equipment/Software Vendor 25%
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Program at a Glance

		Tuesday March 7	Wednesday March 8		Thursday March 9	
Morning		9:30 - 10:00 Welcome coffee	9:00 - 9:45 Keynote speech **Marina Thottan, Nokia**		9:00 - 9:45 Keynote speech **Marie-Paule Odini, HPE**	
		10:00 - 12:00 Tutorial **Andrea Campanella, ONOS**	9:45 - 10:35 **Technical session 2 a** (Track C) Chair : Albert Cabellos (UPC, Spain)		9:45 - 10:30 Keynote speech **Thomas Michael Bohnert, ZHAW**	
			10:35 - 11:05 Coffee break		10:30 - 11:00 Coffee break/ **Poster Session 2** Chair : Roberto Riggio (FBK CREATE-NET, Italy)	
			11:05 - 12:20 **Technical session 2 b** (Track C) Chair : Albert Cabellos (UPC, Spain)		11:00 - 12:40 **Technical session 5** (Track B) Chair : Luigi Atzori (University of Cagliari, Italy)	**Workshop: 5GUA** 5G for Universal Access: Meeting the challenges for Urban and Rural Coverage Chair : Rebecca Copeland (Core Viewpoint Limited, UK)
		12:00 - 13:15 Lunch / **Demo Session 1** Chair : Roberto Bruschi (CNIT, Italy)	12:20 - 13:30 Lunch / **Demo session 2** Chair : Roberto Bruschi (CNIT, Italy)		12:40 - 14:10 Lunch / **Poster Session 3** Chair : Roberto Riggio (FBK CREATE-NET, Italy)	
Afternoon		**Opening ceremony** **Noël Crespi** (Institut-Mines Telecom, France) **Antonio Manzalini** (TIM, Italy)	13:30 - 15:35 **Technical session 3** (Track A) Chair : Alex Galis (UCL, UK)	**Special Session** "Trust and Access Control for the Internet of Things" Chair : Emmanuel Bertin (Orange Labs, France)	14:10 - 15:30 **Technical session 6** (Track D) Chair : Bruno Chatras (Orange Labs, France)	**Workshop: 5GUA** 5G for Universal Access: Meeting the challenges for Urban and Rural Coverage
		13:30 - 14:15 Keynote speech **Chih-Lin I, China-Mobile**				
		14:15 - 15:00 Keynote speech **Stephen Terrill, Ericsson**			**15:30 - 16:30 Panel Session** (A. Galis, L. Atzori, B. Chatras, A. Cabellos, T.M.Bonhert, E.Bertin)	
		15:00 - 15:30 Coffee break	15:35 - 16:00 Coffee break			
		15:30 - 17:10 **Technical session 1** (Track A) Chair : Alex Galis (UCL, UK)	**Workshop: IIDASC** IoT Infrastructures and Data Analytics for Smart Cities Workshop	16:00 - 18:05 **Technical session 4** (Track D) Chair : Bruno Chatras (Orange Labs, France)	16:30 - 17:00 Closing conference/ Awards	
		17:10 - 18:10 **Madness Session** Chair : Max Michel (Orange Labs, France)				
Evening		**18:10 - 20:30** Welcome Reception **/ Poster Session 1** Chair : Roberto Riggio (FBK CREATE-NET, Italy)	**19:00 Gala Dinner**			

For more information visit www.icin-conference.org

ICIN 2017 Keynotes & Tutorial Speakers

Marie-Paule Odini
Director in HPE, Vice Chair ETSI NFV, France
"NFV evolution towards 5G"
Marie-Paule Odini is HPE Distinguished Technologist in the Communication Solution Business. She is also ETSI ISG Vice Chair and has been chairing Software Architecture in the 1st phase and Testing and Opensource afterwards, and driving some of the activities on 5G. She is also chairing education in IEEE SDN.

Marina Thottan
Director at Nokia Bell Labs, USA
"Programmable Network Operating System: Creating the Network Brain"
Marina Thottan is the Group Leader for the Control Research Group in Nokia Bell Labs. She joined Bell Labs Research in 1999, and has contributed to a wide variety of projects, including Online Gaming, Content Distribution, Routing protocols, Data over Optical networks, High Speed Router Design, Network Management and Anomaly Detection. Most recently she has been leading work on Reliable Software Defined Networks (SDN). She has also made significant contributions to the field of Smart Grid Communication Networks and Analytics. Her contributions were recognized by two Bell Labs Teamwork Awards. Marina received a Ph.D. in Electrical and Computer Engineering from Rensselaer in 2000. She has published over 50 papers in scientific journals, book chapters and conferences and holds several patents in the area of network management, interactive network applications, routing algorithms, data analytics and network architectures. She has co-author a book "Communication Networks for Smart Grids: Making Smart Grids Real" and also Co-edited a book on "Algorithms for Next Generation Networks".

Thomas Michael Bohnert
Professor at ZHAW Zurich University of Applied Sciences, Switzerland
"Cloud Robotics"
Dr. Thomas Michael Bohnert is a Professor at Zurich University of Applied Sciences. His interests are enabling ICT systems, coarsely ranging across cloud computing infrastructures and platforms, cloud-native applications, as well as cloud-robotics and network function virtualization as specific application domains. At ZHAW he headed the Research Area Service Engineering, hosting the InIT Cloud Computing Laboratory (ICCLab) and Service Prototyping Lab (SPLab). Prior to ZHAW he was with SAP Research (Technical Director) and SIEMENS Corporate Technology (Senior Researcher). During his tenure he was visiting scholar at NEC Research (Germany), Tampere University of Technology and VTT Research (Finland), and Beijing University of Posts and Telecommunications (China). He completed his PhD at University of Coimbra (Portugal). He owns a ICT consultancy and contributes to several expert groups of the European Commission on the future of ICT. The same applies to his role as regular proposal evaluator and project reviewer for the EC, the Swiss National Science Foundation, and the DAAD. The Future Internet Public-Private-Partnership (www.fi-ppp.eu) appointment him as Deputy Chief Architect, presiding the FI-PPP Architecture Board and the FI-WARE project. He was technical coordinator of the Mobile Cloud Networking project and has a history of projects at European and national level. He is founder of the IEEE Broadband Wireless Access Workshop (www.bwaws.org) and holds many project and conference chairs. From 2009-2011 he was on the steering board of the European Technology Platform Net!Works and co-chairs the EC DG NET FUTURES Future Internet Cluster. He acts as president of the Cloud Computing SIG of the Swiss Association of Computer Science as well as board member of the association at large. His works have been published in several books, journals, and conferences. He serves as regional correspondent (Europe) for the IEEE Communication Magazine's news section (GCN).

Stephen Terrill, Expert
Technical Lead, Automation at Ericsson, Spain
"Multi-Domain Orchestration and Automation"
Stephen Terrill has more than 20 years of experience in the telecommunication industry and has been on the front edge of several industry transformations, covering circuit switched network evolution to layered architecture and ultimate IP networks with IMS, user data base migration to data layered networks and now, most significantly, networks to network function virtualization. This evolution has involved working in roles included Rapporteur roles in ITU-T and 3GPP as well as involvement in ETSI and IETF, Systems evolution lead and strategy. Currently Stephen is an Ericsson Expert in the area of Network Analytics and Control and is working with the evolution of automating virtual networks, programmability and abstraction.
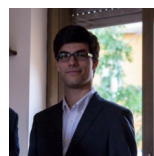
Chih-Lin I
Chief Scientist of Wireless Technologies, China Mobile, China
"The Perfect Storm: IT+CT+DT"
Dr. Chih-Lin I is the Chief Scientist of Wireless Technologies of China Mobile, in charge of advanced wireless communication R&D effort of China Mobile Research Institute (CMRI). She established the Green Communications Research Center of China Mobile, spearheading major initiatives including 5G Key Technologies R&D; high energy efficiency system architecture, technologies, and devices; green energy; C-RAN and soft base station.
Dr. I received her Ph.D. degree in Electrical Engineering from Stanford University, and has more than 30 years experience in wireless communication technical domain. She has worked in various world-class companies and research institutes, including wireless communication fundamental research department of AT&T Bell Labs; Headquarter of AT&T, as the Director of Wireless Communications Infrastructure and Access Technology; ITRI of Taiwan, as the Director of Wireless Communication Technology; Hong Kong ASTRI, as the VP and the Founding GD of Communications Technology Domain.
Dr. I received the Trans. COM Stephen Rice Best Paper Award, and is a winner of CCCP "National 1000 talent" program. She was an elected Board Member of IEEE ComSoc, Chair of ComSoc Meeting and Conference Board, and the Founding Chair of IEEE WCNC Steering Committee. She is currently the Chair of FuTURE Forum 5G SIG, an Executive Board Member of GreenTouch, a Network Operator Council Member of ETSI NFV, and an Adjunct Professor of BUPT.
Dr. I has shown frequent presence in many important and high-level public occasions for speech delivery. She is often invited as the keynote speaker for diverse audience from academia, industry and governments. She is very active in many venues such as conferences, summits, workshops, panels and so on. This year she has delivered nearly 30 speeches in lots of events such as IEEE WCNC, IEEE ICC, IEEE VTC, IEEE PIMRC, Global Professional Services Forum and so on, which included a 3-hour-long tutorial on C-RAN in Cloud RAN Conference in Paris.
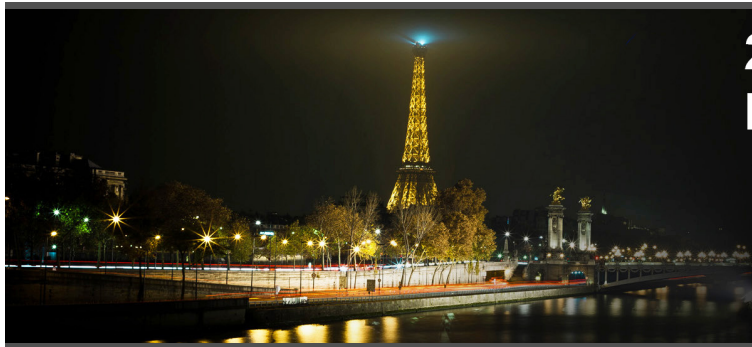
Andrea Campanella
Member of Technical staff at Open Networking Laboratory, USA
"The ONOS and CORD projects"
Andrea Campanella, 24 from Milan, Italy, is employed as a Member of Technical staff (MTS) at Open Networking Laboratory. Andrea obtained the Master's degree in computer science at the Public University of Milan in December 2016 after a Bachelor degree in Digital communication in July 2014 at the same institution. The master degree program and the final thesis focused on computer networks and SDN. Andrea started working with ON.Lab through an internship in October 2015. Presently working as an engineer on both the ONOS and CORD projects. In ONOS his main focus are southbound protocols, device integration and packet-optical use case. Andrea is also part of the Enterprise CORD team.

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Track A - Network and Service IT-zation
Chair: Alex Galis (UCL, UK)

Regular Session 1 – 15:30 – 17:10 – Tuesday 7

Scalable and Cost-Efficient Algorithms for VNF Chaining and Placement Problem
Selma Khebbache *(Institut Mines-Télécom, France)*, Makhlouf Hadji *(IRT System X, France)* and Djamal Zeghlache *(Institut Mines-Télécom, France)*

A VNF-as-a-Service Design Through Micro-Services – Disassembling the IMS
Amina Boubendir *(Orange Labs & Télécom ParisTech, France)*, Emmanuel Bertin *(Orange Labs, France)* and Noëmie Simoni *(Telecom ParisTech, France)*

NFV Enabling Network Slicing for 5G
Bruno Chatras *(Orange Labs, France)*, Steve Tsang Kwong U *(Orange Labs, France)* and Nicolas Bihannic *(Orange Labs, France)*

A scalable Routing Mechanism for Stateful Microservices
Nam Hoai Do, Tien Van Do and Xuan Tran *(Budapest University of Technology and Economics, Hungary)*, Lorant Farkas *(Nokia Bell Labs, Hungary)* and Csaba Rotter *(Nokia Bell Labs, Hungary)*

Regular Session 3 – 13:30 – 15:35 – Wednesday 8

Traffic Management in LTE-WiFi Slicing Networks
Ali Alfoudi, Mohammed Dighriri, Gyu Myoung Lee, Rubem Pereira and Posco Tso *(Liverpool John Moores University, United Kingdom)*

Designing and Deploying A Bioinformatics Software-Defined Network Exchange (SDX): Architecture, Services, Capabilities, and Foundation Technologies
Joel Mambretti, Jim Chen and Fei Yeh *(Northwestern University, USA)* and Robert Grossman, Piers Nash, Allison Heath, Stuti Agrawal and Zhenyu Zhang *(University of Chicago, USA)*

Gavel: Software-defined Network Control with Graph Database
Osamah Lutf Hamood Barakat, David Koll and Xiaoming Fu *(University of Goettingen, Germany)*

Multi-Agent Based Intrusion Prevention and Mitigation Architecture for Software Defined Networks
Varun Sharma *(University of Delaware, USA)*

Demo Session 1 – 12:00 – 13:15 – Tuesday 7
Chair : Roberto Bruschi (CNIT, Italy)

MiniNAM: A Network Animator for Visualizing Real-Time Packet Flows in Mininet
Ahmed Khalid *(University College Cork, Ireland)*, Jason J Quinlan *(University College Cork, Ireland)* and Cormac J. Sreenan *(University College Cork, Ireland)*

Demonstration of Segment Routing with SDN Based Label Stack Optimization
Guedrez Rabah *(Télécom Bretagne & Orange Labs, France)*, Olivier D Dugeon *(Orange Labs, France)*, Samer Lahoud *(IRISA, University of Rennes 1, France)* and Geraldine Texier *(Institut Mines-Telecom/Telecom Bretagne/RSM, France)*

An Extended SNMP Based IoT Context-Aware Model for Dynamic Adaptability of Embedded Systems Software
Camille Jaggernauth *(Novax Industries Corp, Canada)*

Track B - Internet of Things
Chair: Luigi Atzori (University of Cagliari, Italy)

Regular Session 5 – 11:00 – 12:40 – Thursday 9

Sensor Observation Streams Within Cloud-based IoT Platforms: Challenges and Directions
Antoine Auger *(ISAE-SUPAERO & Université de Toulouse, France)*, Ernesto Exposito *(University of Pau and Adour Countries, LIUPPA Laboratory, France)* and Emmanuel Lochin *(ISAE-SUPAERO & Université de Toulouse, France)*

Describing the Internet of Things with an Ontology: The SusCity Project Case Study
David Perez Abreu and Karima Velasquez *(University of Coimbra, Portugal)* Alexandre Miguel Pinto *(University of Lisbon, Portugal)* and Marilia Curado and Edmundo Monteiro *(University of Coimbra, Portugal)*

Concealed Regression for Aggregation in Low Power Wireless Networks
Andrey Tolstikhin and Zeljko Zilic *(McGill University, Canada)*

A Persuasive Real-Time Carpooling Service in a Smart City: a Case-Study to Measure the Advantages in Urban Area
Matteo Mallus *(University of Cagliari & GreenShare SRL, Italy)*, Giuseppe Colistra, Luigi Atzori, Maurizio Murroni and Virginia Pilloni *(University of Cagliari, Italy)*

Poster Session 2 – 10:30 – 11:00 – Thursday 9
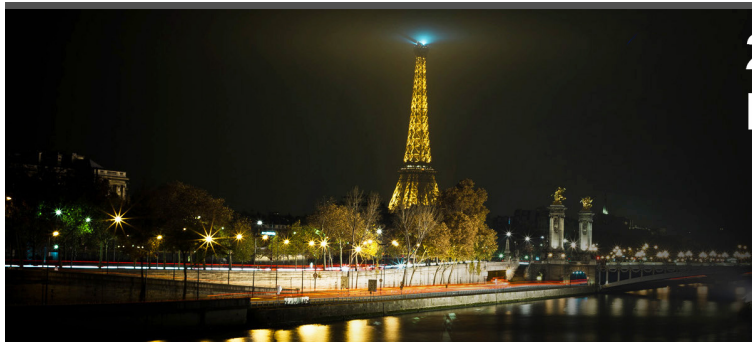
Chair: Roberto Riggio (FBK CREATE-NET, Italy)

Comments and Improvements on "HOTA: Handover Optimized Ticket-based Authentication in Network-based Mobility Management"
Mojtaba Alizadeh *(Kyushu University, Japan)*

Usable Authentication Systems for Real Time Web-based Audio/Video Communications
Hassan Bostani *(University of Quebec, INRS, Canada)* and Jean-Charles Grégoire *(University of Quebec, INRS, Canada)*

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Track C - Actionable Big Data and Artificial Intelligence
Chair: Albert Cabellos (UPC, Spain)

Regular Session 2a – 9:45 – 10:35 – Wednesday 8

Forecasting and Anticipating SLO Breaches in Programmable Networks
Jaafar Bendriss *(Orange Labs, France)*, Imen Grida Ben Yahia *(Orange Labs, France)* and Djamal Zeghlache *(Institut Mines-Télécom, France)*

CogNitive 5G Networks: Comprehensive Operator Use Cases with Machine Learning for Management Operations
Imen Grida Ben Yahia *(Orange Labs, France)*, Jaafar Bendriss *(Orange Labs, France)*, Alassane Samba *(Orange Labs, France)* andPhilippe Dooze *(Orange Labs, France)*

Regular Session 2b – 11:05 – 12:20 – Wednesday 8

A Ranking Based Privilege Model for Privacy in Location Based Services
Varun Sharma *(University of Delaware, USA)* and Chien-Chung Shen *(University of Delaware, USA)*

Providing for Privacy in a Network Infrastructure Protection Context
Ian Oliver *(Nokia Bell Labs, Finland)* and Silke Holtmanns *(Nokia Bell Labs, Finland)*

Stimulus-based Sandbox for Learning Resource Dependencies in Virtualized Distributed Application
Armen Aghasaryan *(Nokia Bell Labs, France)*, Dimitre Kostadinov *(Nokia Bell Labs, France)* and Makram Bouzid *(Nokia Bell Labs, France)*

Demo Session 2 – 12:20 – 13:30 – Wednesday 8
Chair : Roberto Bruschi (CNIT, Italy)

Communication Portals: Immersive Communication for Everyday Life
Sirisilp Kongsilp *(Thammasat University, Thailand)* and Matthew Dailey *(Asian Institute of Technology, Thailand)*

Towards Automated IoT Service Recommendation
Ludovic Noirie *(Nokia Bell Labs, France)*, Michel Le Pallec *(Nokia Bell Labs, France)* and Nesrine Ammar *(Nokia Bell Labs, France)*

Track D - Control Orchestration and Management and Policy
Chair: Bruno Chatras (Orange Labs, France)

Regular Session 4 – 16:00 – 18:05 – Wednesday 8

Achieving the Autonomic Adaptation of Resources in Virtualized Network Environments
Pedro Martinez-Julia *(NICT, Japan)*, Ved P. Kafle *(NICT, Japan)* and Hiroaki Harai *(NICT, Japan)*

Bare-metal, Virtual Machines and Containers in OpenStack
Charalampos Gavriil Kominos *(Uppsala University, Sweden)*, Nicolas Seyvet *(Ericsson, Sweden)* and Konstantinos Vandikas *(Ericsson, Sweden)*

Performance Comparison Between Container-based and VM-based Services
Tasneem Salah *(Khalifa University, UAE)*, Mohamed Jamal Zemerly *(Khalifa University, UAE)*, Chan Yeob Yeun *(Khalifa University, UAE)*,Mahmoud Al-Qutayri *(Khalifa University, UAE)* and Yousof Al-Hammadi *(Khalifa University, UAE)*

Performance Modeling of Cloud Apps Using Message Queueing as a Service (MaaS)
Khaled Salah *(Khalifa University, UAE)*, Tarek Rahil Sheltami *(KFUPM, Saudi Arabia)*

On Prediction of Resource Consumption of Service Requests in Cloud Environments
Fariborz Derakhshan, Horst Roessler, Peter Schefczik *(Nokia Bell Labs, Germany)* and Sabine Randriamasy *(Nokia Bell Labs, France)*

Regular Session 6 – 14:10 – 15:30 – Thursday 9

Mediation-based Communications
Jean-Charles Grégoire *(University of Quebec, INRS, Canada)*

A SIoT-Aware Approach to the Resource Management Issue in Mobile CrowdSensing
Luigi Atzori, Roberto Girau, Salvatore Martis, Virginia Pilloni and Marco Uras *(University of Cagliari, Italy)*

Beekup: A Distributed and Safe P2P Storage Framework for IoE Applications
Federico Rizzo, Giovanni Luca Spoto, Paolo Brizzi and Dario Bonino *(Istituto Superiore Mario Boella, Italy)*, Giuseppe Di Bella *(Swarm Joint Open Lab - TIM, Italy)* and Pino Castrogiovanni *(Telecom Italia, Italy)*

Poster Session 3 – 12:40 – 14:10 – Thursday 9
Chair: Roberto Riggio (FBK CREATE-NET, Italy)

SDN & NFV in 5G: Advancements and Challenges
Christos J Bouras *(University of Patras, Greece)*, Anastasia Kollia *(University of Patras, Greece)* and Andreas Papazois *(University of Patras & GRNET S.A., Greece)*

Analysis of Virtual Resource Allocation for Cloud-RAN Based Systems
Valentin Rakovic, Aleksandar Ichkov, Nina Grosheva, Vladimir Atanasovski and Liljana Gavrilovska *(Ss. Cyril and Methodius University in Skopje, Macedonia)*

Cloud-Based Moving Object Detection for Mobile Devices
Ruoqiao Li, Xi Xie, Pu Wang and Cong Jin *(Communication University of China, P.R. China)*

SDN Enabled Resiliency in LTE Assisted Small Cell mmWave Backhaul Networks
Jonathan Vestin and Andreas J. Kassler *(Karlstad University, Sweden)*

Poster Session
Chair: Roberto Riggio (FBK CREATE-NET, Italy)

Special Session: Trust and Access Control for the Internet of Things
Chair: Emmanuel Bertin *(Orange Labs, France)*

Poster Session 1 – 18:30 – 21:00 – Tuesday 7

Independently Verifiable Identity Scheme (IVIS)
Rebecca Copeland *(Telecom SudParis (TSP)-Core Viewpoint Limited, United Kingdom)* and Michael Copeland *(Core Viewpoint Ltd, United Kingdom)*

Dynamic Overlay Multicasting for Deadline-Driven Requests Provisioning in Elastic Optical Networks
Wojciech Kmiecik *(Wroclaw University of Technology, Poland)* and Krzysztof Walkowiak *(Wroclaw University of Science and Technology, Poland)*

Internet of Things: An End-to-End Security Layer
Ali Ahmed *(Cairo University, Egypt)* and Reinhard Behrens *(University of Liverpool, United Kingdom)*

Stochastic Modelling and Analysis of Cloud Computing Data Center
Said El Kafhali *(National School of Applied Sciences Hassan 1st Univ, Morocco)* and Khaled Salah *(Khalifa University, UAE)*

Telecom Strategies for Service Discovery in Microservice Environments
Csaba Rotter *(Nokia Bell Labs, Hungary)*, Janos Illes *(Nokia Bell Labs, Hungary)*, Lorant Farkas *(Nokia Networks, Hungary)*, Gabor Nyiri *(Nokia Bell Labs, Hungary)*, Gergely Csatári *(Nokia Networks, Hungary)* and Gergo Huszty *(Nokia Networks, Finland)*

Neo-NSH:Towards Scalable and Efficient Dynamic Service Function Chaining of Elastic Network Functions
Sameer G Kulkarni *(University of Goettingen, Germany)*, Mayutan Arumaithurai *(University of Goettingen, Germany)*, K. K. Ramakrishnan *(University of California, Riverside, USA)* and Xiaoming Fu *(University of Goettingen, Germany)*

A Security Controller-based Software Defined Security Architecture
Fangyuan Cheng *(Beijing University of Posts and Telecommunications, P.R. China)* and Gang Zhang *(Beijing University of Posts and Telecommunications, P.R. China)*

Incorporating Trust in NFVI: Addressing the Challenges
Ian Oliver and Sowmya Ravidas *(Nokia Bell Labs, Finland)*, Leo Hippeläinen *(Nokia Bell Labs & NSN, Finland)* and Shankar Lal *(Aalto University & Nokia Bell Labs, Finland)*

Special Session – 13:30 – 15:35 - Wednesday 8

Mini-keynote on the Future challenges for the IoT
Roberto Minerva, Telecom SudParis, France

Privacy, Consent and Authorisation in IoT
Cigdem Sengul *(Nominet, UK)*

A model to enable application-scoped access control as a service for IoT using OAuth2
Federico Fernández *(Technical University of Madrid, Spain)*,Álvaro Alonso *(Technical University of Madrid, Spain)*, Lourdes Marco *(Technical University of Madrid, Spain)* and Joaquín Salvachúa *(Technical University of Madrid, Spain)*

Access Control for IoT: from requirements to solutions
Dina Hussein *(Orange Labs, France)*, Emmanuel Bertin *(Orange Labs, France)* and Vincent Frey *(Orange Labs, France)*

Tell me again, why should I talk to strangers?
Jean-Charles Grégoire *(INRS, Canada)* and Song-Nhi Nguyen *(INRS, Canada)*

Trustworthiness management in the Social IoT: the importance of the feedback
Virginia Pilloni *(University of Cagliari, Italy)*, Luigi Atzori *(University of Cagliari, Italy)* and Michele Nitti *(University of Cagliari, Italy)*

Ontology-based Model for Trusted Critical Site Supervision in FUSE-IT
Shohreh Ahvar *(Telecom SudParis, France)*, Noël Crespi *(Telecom SudParis, France)*, Gabriel Santos *(GECAD, Portugal)*, Isabel Praça *(GECAD, Portugal)*, Nouredine Tamani *(University of La Rochelle,*

Madness Session
Chair: Roberto Menerva (Telecom Italia, Italy)

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IoT Infrastructures and Data Analytics for Smart Cities Workshop (IIDASC'17)
Chairs : Ralf Tönjes *(University of Applied Sciences Osnabrück, Germany)* and Edith C.-H. Ngai *(Uppsala University, Sweden)*

5G for Universal Access: Meeting the challenges for Urban and Rural Coverage Workshop (5GUA'17)
Chairs : Rebecca Copeland (Core Viewpoint Limited, UK) (Syed Ali Hassan *(National University of Sciences and Technology, Pakistan)*, Muhammad Ali Imran *(University of Glasgow, UK*

Tuesday, March 7

15:30 - Keynote Speech - Commons, Communities and Open Data as enablers for the development of the Smart Territories
Gilles Betis *Chair, IEEE Smart Cities Initiative, France*

15:20 - Session 1: Smart City Enabling Technologies
Chair: Ralf Toenjes *(University of Applied Science Osnabrück, Germany)*

Calibration-Free Wireless Indoor Localization (CAFLOC)
Lei Miao *(Middle Tennessee State University, USA)*

Effective Data Collection Scheme for Real-Spatial Group Communication Among Mobile Nodes
Hitomi Fuji, Kazuya Tsukamoto *(Kyushu Institute of Technology, Japan)* and Akira Nagata, Katsuichi Nakamura *(iD Corporation, Japan)*

An Infrastructure-based Interpolation and Propagation Approach for IoT Data Analytics
Daniel Kuemper, Ralf Toenjes and Elke Pulvermueller *(University of Applied Sciences Osnabrueck, Germany)*

17:40 - Session 2: Smart City Services
Chair: Edith C.-H. Ngai *(Uppsala University, Sweden)*

Invited Talk - Smart City Santander
Luis Sánchez, *University of Cantabria, Spain*

A Comparison of IoT application layer protocols through a smart parking implementation
Paridhika Kayal and Harry Perros *(North Carolina State University, USA)*

A Public Transportation Journey Planner Enabled by IoT Data Analytics
Dan Puiu, Bogdan Serbanescu, Septimiu Nechifor *(Siemens Corporate Technology, Romania)* and Stefan Bischof, Josiane Parreira *(Siemens Corporate Technology, Austria)*

Automatic Configuration of Smart City Applications for User-Centric Decision Support
Thu-Le Pham, Muhammad Intizar Ali *(National University of Ireland, Ireland)*, Stefano Germano *(University of Calabria, Italy)*, Alessandra Mileo *(Dublin City University, Ireland)* and Daniel Kuemper *(University of Applied Sciences Osnabrueck, Germany)*

Thursday, March 9

11:30-12:10 – Invited Talk - Paving the way towards 5G Wireless Communications Systems
Slim Alouini, *Fellow IEEE, KAUST, SA*

12:10-12:30 - On the Interplay between Scheduling Interval and Beamwidth Selection for Low-Latency and Reliable V2V mmWave Communications.
Cristina Perfecto *(University of the Basque Country UPV/EHU, Spain)*; Javier Del Ser *(TECNALIA, Spain)*; Mehdi Bennis *(Centre of Wireless Communications, University of Oulu, Finland)*

12:30- 13:10 – Invited Talk - On System-Level Analysis & Design of Cellular Networks: The Magic of Stochastic Geometry
Marco Di Renzo, *SM IEEE, University Paris-Sud, France*

14:10-15:00 - Invited Talk 5G: Can we make it by 2020?
Merouane Debbah, *Fellow IEEE, France*

15:00-15:20 - Techno-economic Analysis and Prediction for the Deployment of 5g Mobile Network
Ghoul Smail *(Shanghai Jiao Tong University/ China, P.R. China)*; Weijia Jia *(Shanghai Jiaotong University, P.R. China)*

15:20-15:40 - Sub-Channel Assignment and Resource Scheduling for Non-Orthogonal Multiple Access (NOMA) in Downlink Coordinated Multi-point Systems
Rupesh Singh *(University of Kent)*

15:40-16:00 - Feasibility, Architecture and Cost Considerations of Using TVWS for Rural Internet Access in 5G
Mohsin Khalil *(National University of Sciences and Technology, Pakistan)*; Junaid Qadir *(IT University, Pakistan)*; Oluwakayode Onireti and Muhammad Ali Imran *(University of Glasgow, United Kingdom)*; Muhammad Shahzad Younis *(School of Electrical Engineering and Computer Sciences & National University of Sciences and Technology, Pakistan)*

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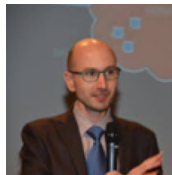
ICIN 2017 Track Chairs

Alex Galis
University College London, UK
Track A - Network and Service IT-zation

Alex Galis is a Professor In Networked and Service Systems at University College London (UCL). He has co-authored 10 research books and more that 250 publications in the Future Internet areas: system management, networks and services, networking clouds, 5G virtualisation and programmability. He participated in a number of EU research projects including overall technical leadership of the MISA - Management of IP networks, FAIN – programmable networks, CONTEXT – context aware networking and AUTONOMIC INTEREST – autonomic networking projects. He was a member of the Steering Group of the Future Internet Assembly (FIA) and he led the Management and Service–aware Networking Architecture (MANA) working group at FIA. He acted as PTC chair of 14 IEEE conferences including TPC co-chair of IEEE Network Softwarization 2015 (NetSoft 2015) and reviewer in more than 100 IEEE conferences. He is also a co-editor of the IEEE Communications Magazine feature topic on Advances In Networking Software. He acted as a Vice Chair of the ITU-T SG13 Group on Future Networking. He is involved in IETF and ITU-T SG13 network slicing activities and he is also involved in IEEE SDN initiative including co-chairing of the IEEE SDN publication committee.

Albert Cabellos
(UPC, Spain)
Track C – Actionable Big Data and Artificial Intelligence

Albert Cabellos received a BSc (2001), MSc (2005) and PhD (2008) degree in Computer Science Engineering from the Technical University of Catalonia (www.upc.edu). In 2010 he joined the NaNoNetworkingCenter in Catalunya (http://www.n3cat.upc.edu) where he is the Scientific Director. He is an editor of the Elsevier Journal on Nano Computer Network and founder of the ACM NANOCOM conference, the IEEE MONACOM workshop and the N3Summit. He has also founded the Open Overlay Router initiative (http://openoverlayrouter.org) along with Cisco. He has been a visiting researcher at Cisco Systems and Agilent Technologies and a visiting professor at the Royal Institute of Technology (KTH), the Massachusetts Institute of Technology (MIT) and UC Berkeley. Since 2015 he is the Vice-Dean for International and Institutional Relations at FIB-UPC. He has participated in several national (Cicyt), EU (FP7), USA (NSF) and industrial projects (Samsung and Cisco). He has given more than 10 invited talks (MIT, Cisco, INTEL, MIET, Northeastern Univ. etc.) and co-authored more than 100 papers.
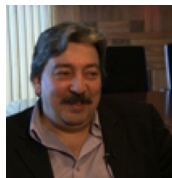
Emmanuel Bertin
Orange Labs, France
Special Session: Trust and Access Control for the Internet of Things

Emmanuel Bertin is currently senior Architect at Orange Labs and Orange Expert on Future Networks and Communication Services. He holds a Masters from Telecom Bretagne and a PhD from Paris 6 UPMC University. Since 2004, he is involved in the Orange's enterprise architecture program. His expertise is based on service engineering and Internet-based services - both from the technical and from the business viewpoints. He has published 3 books and more than 60 papers in international journals and conferences. He is involved in several Technical Program Committees and he chaired last year the 19th ICIN conference.

Luigi Atzori
University of Cagliari, Italy
Track B – Internet of Things

Luigi Luigi Atzori (SM'09) is Associate Professor at the Department of Electrical and Electronic Engineering at the University of Cagliari (Italy), where he leads the laboratory of Multimedia and Communications. His interests are in: multimedia communications, NGN service management, and IoT. He is the coordinator of the Marie Curie Initial Training Network on QoE for multimedia services (qoenet-itn.eu), which involves ten European Institutions in Europe and one in South Korea. He is member of the steering committee for the IEEE Trans. On Multimedia, member of the editorial board of the IEEE IoT, the Elsevier Ad Hoc Networks and the Elsevier Digital Communications and Networks journals.

Bruno Chatras
Orange Labs, France
Track D – Control Orchestration and Management and Policy

Bruno CHATRAS is a senior standardization manager at Orange Labs Networks and a member of the Orange experts' community on Future Networks. He is the Chairman of the ETSI Technical Committee on Network Technologies (NTECH) and a Vice-Chairman of the ETSI Industry Specification Group on Network Functions Virtualisation (ETSI NFV). Bruno joined France Telecom / Orange in 1985, where he started his carrier by developing GSM standards. Since then he held several management positions within Orange, where he led the Intelligent networks R&D Unit and has been Vice-Chairman of the ETSI Technical Committee on NGN and ITU-T Rapporteur for Intelligent Networks. Bruno holds several patents and is the author of numerous papers and presentations in the area of network architectures and protocols. He is also giving regular lectures on SDN and NFV in several engineering schools and universities in France.

Payam Bernaghi
University of Surrey, UK
Workshops Chair

Payam Barnaghi is a Lecturer (Assistant Professor) at the Institute Communication Systems (ICS) at the University of Surrey. He is a senior member of IEEE, an associate editor of the IEEE Internet of Things Journal, and a guest editor of a special issue of the IEEE Intelligent Systems on Web of Things. He has been involved in organising several international conferences and workshops including being program co-chair of the IEEE UIC 2013, program vice-chair of the IEEE iThings2013, program co-chair of the SSN2013 workshop, and Mobile Web, Sensors and Semantic Streams track co-chair at ESWC 2013 and ESWC2014. He is a guest editor of a planned special issue of the IEEE Internet Computing on Physical-Cyber-Social Computing. He is currently principal investigator and scientific coordinator of the EU FP7 CityPulse project (http://www.ict-citypulse.eu) on the Internet of Things and smart cities. His research interests include machine learning, Internet of Things, semantic web, web services, information centric networks and information search and retrieval.

20th Innovations in Clouds, Internet and Networks

PARIS
March 7 - 9, 2017

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ICIN 2017 Venue

ICIN 2017 CONFERENCE LOCATION

ESPACE HAMELIN (Centre d'affaires & services)

17 Rue de l'Amiral Hamelin
75116 Paris

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6 Boissière station

9 Iéna station

By bus

(BUS) 22, 30, 32, 63 and 82

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ICIN 2017 CONFERENCE DINNER

The conference dinner will take place on Wednesday, March 8, 2017 at :

MUSEE DU VIN PARIS
5 Square Charles Dickens - Rue des Eaux
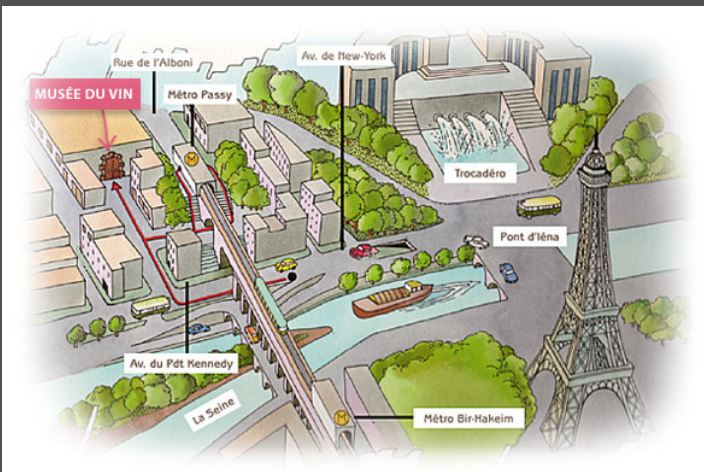75016 Paris

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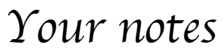**(RER) (C)** Champs de Mars – Tour Eiffel

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