



21st Innovation in Clouds, Internet and Networks



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Program

	DRCN & NI Workshops		ICIN			
	Monday February 19, 2018		Tuesday February 20, 2018	Wednesday February 21, 2018	Thursday February 22, 2018	
	DRCN	NI	ICIN			
9:00			Opening Ceremony		Invited Session 5G, are we on the right track?	
9:15	Opening Session					
9:30	Keynote: Innovation is back in the transport and network layers.	Keynote: Componentization Paradigms: Past, Present and Future	Keynote Speaker 1 <i>Dynamic Service Parameter Negotiation in the 5G Era</i>	Keynote Speaker 1 <i>Challenges in Validating 5G</i>		
10:30	Coffee break		Coffee break			
11:00	TSA <i>Resilient Network Design & Modelling</i>	TSA <i>Network Intelligence with Componentization paradigms</i>	TS1 <i>5G Network Architecture and Modelling</i>	TS3 <i>Routing and Resource Allocation</i>	TS5 <i>Reliability and Energy Efficiency</i>	
		TSB <i>Machine Learning for Network</i>				
		Closing Session				
12:30	Lunch Break		Demo Session 1/2 & Lunch Break		Demo Session 3 & Lunch Break	
14:00	TSB <i>Resilience for SDN/NFV & DC Networking</i>		Tutorial 1 Multipath TCP : more than yet another TCP extension	TS2 <i>Cloud and Content Services</i>	TS4 <i>Security, Authentication and Privacy</i>	TS6 <i>Performance and Service Assurance</i>
15:30	Coffee break		Coffee break			Coffee break
16:00	TSC <i>Resilience for Internet Technology</i>		Tutorial 2 Federation, programmability and security in future NFV/SDN infrastructures	SS1 <i>Network Design</i>	SS2 <i>QoS Management</i>	Panel Success factors for 5G networks, today and tomorrow
	Best Paper Award & Closing Session					Best Paper Awards & Closing Ceremony
17:45						
18:00			Welcome Reception			
20:00				Conference Dinner		

Welcome Message from the Chairmans

It is our great pleasure to welcome you to the 21st International Conference on Innovation in Clouds, Internet and Networks (ICIN 2018), which is being held on 20-22 February 2018 in Paris, France.

ICIN, established in 1989 and praised for the richness of its social networking, is widely recognized for its continuous adaptation to emerging technical trends, attracting numerous industry and academic players.

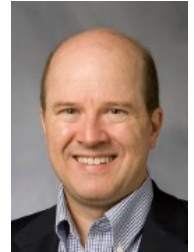
2018 is the year of coordinated 5G deployment across all EU Member States, targeting early network introduction, and moving towards commercial large-scale introduction by the end of 2020 at the latest. As such, the main theme for ICIN 2018 is **"5G Network Architecture and Solutions: Are We Ready?"**

This year's conference will foster a rich program combining novel approaches and advanced technical solutions, as well as experimental validation and proofs of concepts. ICIN 2018 will feature:

- Two Keynote Presentations** – sharing visions and experiences of Industry leaders on the deployment of 5G networks and services with talks on *Dynamic service parameter negotiation in the 5G Era* by Christian Jacquenet (Orange Labs), and *Challenges in validating 5G* by Pierre Lynch (Ixia Solutions).
- Eight Technical Sessions** – providing the latest advances in their respective field, based on peer-reviewed papers.
- One Panel Session** – igniting a lively debate on the viewpoints from our expert panelists on *the success factors for 5G networks today and tomorrow*.
- One Invited Session** – on *5G, are we on the right track?*, addressing issues which are yet to be solved.
- Three-day Demo Sessions** – featuring proofs-of-concepts on a diverse set of technologies (IoT, SDN/NFV, CDNs...) and early demonstrations showcasing 5G implementations.
- Two Workshops** – focusing respectively on network reliability (DRCN 2018) and on network intelligence (NI 2018).
- Two Tutorials** – offering education on respectively MP-TCP and SDN/NFV, for keeping up with the hot topics key to today's engineering and technology environment.



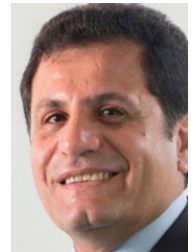
Prosper Chemouil
General Co-Chair
(Orange Labs, France)



Bruce Maggs
General Co-Chair
(Duke University, USA)



Laurent Ciavaglia
TPC Co-Chair
(Nokia Bell Labs, France)



Rahim Tafazolli
TPC Co-Chair
(University of Surrey, UK)

We are delighted to organize ICIN 2018 in Paris, France's unique capital city which has, needless to say, a lot to offer in various ways. The conference is being held in Orange Gardens, the eco-friendly campus of Orange for Innovations, Technologies and Marketing. We are looking forward to making your participation in ICIN 2018 a memorable experience, from both professional and personal perspectives.

We are grateful to the many people who have been deeply involved in ICIN 2018: first, we acknowledge the numerous contributions of authors who submitted papers and demos. Second, we thank the Organizing Committee members who each committed to run a part of the conference, the TPC members and reviewers who provided guidance in the topics of the event and allowed us to set up an excellent technical program, Noël Crespi and the IAB members for their continuous support and the workshop organizers who helped us nicely complementing the conference technical program. Our special thanks go to Ning Wang who contributed to the set-up of the technical program, Amina Boubendir for co-organizing the invited session, Elia Kallas for reactively maintaining the website and, above all to Aziza Lounis, for her dedication in all aspects of the conference.

Last but not least, we are grateful to our patrons for their generosity: Gandi, Nokia and Orange, as well as the supporting organizations: IEEE ComSoc, IFIP TC6, and ACM SIGMOBILE.

Join us now to discuss the latest advances before 5G deployment.
Welcome to Paris and enjoy ICIN 2018.

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.

Who will you 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%

Embodying the Full Value Chain



Operator	24%
Academic/Government R&D	33%
Industry Association/Consultant	14%
Equipment/Software Vendor	25%
Systems Integrator	4%

ICIN 2018 Keynote Speakers



Christian Jacquenet

Orange Labs, France

"Dynamic Service Parameter Negotiation in the 5G Era"

Christian Jacquenet graduated from the Ecole Nationale Supérieure de Physique de Marseille, a French school of Engineers. He joined Orange in 1989, and he is currently the Referent Expert of the "Networks of the Future" Orange Expert community. Until recently, he was the Director

of the Strategic Program Office for advanced IP networking within Orange Labs. He is also the head of Orange's IPv6 Program that aims at defining and driving the enforcement of the Group's IPv6 strategy. He conducts development activities in the areas of Software-Defined Networking (SDN), IP networking, automated service delivery procedures, including service function chaining techniques. He authored and co-authored several Internet standards in the areas of dynamic routing protocols and resource allocation techniques, as well as numerous papers and books in the areas of IP multicast, traffic engineering and automated IP service delivery techniques. He also holds several patents in the areas of advanced home and IP networking techniques.

Abstract: Network operators provide an ever-growing service portfolio. The diversity and the complexity of these services have been raising technical challenges for many years, not only during the service design phase but also during the service operation phase. The emergence of Software-Defined Networking (SDN) techniques has often been the opportunity to make debatable promises about their ability to facilitate the automation of service delivery procedures. Reality is much different. Process automation is often restricted to dynamic configuration tasks, whose steering relies upon decision-making procedures that remain "manually declarative": the data that are used to feed the computation logic that will drive the execution of configuration tasks are statically declared. Automation is actually far more protean and relies upon a set of functions and control loops that interact in a deterministic and sometimes autonomic fashion. Dynamic service parameter exposure and negotiation is one of those functions that should greatly contribute to the fully automated delivery of services in (SDN-enabled) 5G environments. The talk will discuss an approach to such negotiation scheme, and pick the iconic example of Internet of Things (IoT) services to illustrate its benefits as well as foreseen challenges.



Pierre Lynch

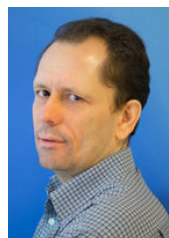
Ixia Solutions Group, USA

"Challenges in Validating 5G"

Pierre Lynch is a Lead technologist at Ixia. He has been working in the network testing industry since the beginning of his 20 year career. Pierre is working in the Product Management team, and is responsible for representing Ixia at industry forums and standards definition organizations (SDOs) relating to virtualization and mobility. He is the current Chair of the ETSI NFV ISG TST working group, and also participates in ETSI MEC, 3GPP, and various open source communities focused on NFV. Pierre earned a Bachelor degree in Applied Computer Science from Université de Moncton, Canada, and a Bachelor degree in Electrical Engineering from the University of New Brunswick, Canada.

Abstract: As the technologies that will be used in the 5G system become better known, it is becoming evident that validation of the system and its components will fundamentally change from the past. Testing NFV, SDN and MEC has deep impacts on the methodology used, while the reality of having 1000x the amount of connections in the system as a result of IoT brings in fresh new challenges. The massive small cell densification brought in by mmWave spectrum usage, and new system concepts such as the new service based architecture and network slicing also impact the metrics to be sought and measured when validating the design. The QoS metrics to be measured for new services offered are mostly known, but will have far stricter constraints. This presentation will detail the impacts on test methodologies and architectures for 5G system validation. It will outline test plans and the environments to be used for such validation, as well as point towards industry activities that help the users work towards the goal of full system and component testing for the new 5G world.

DRCN 2018 Keynote Speaker



Olivier Bonaventure

Universite catholique de Louvain, Belgium

"Innovation is back in the transport and network layers"

Olivier Bonaventure is Professor at UCL in Louvain-la-Neuve, Belgium where he leads the IP Networking Lab. Together with his students, he has contributed to the design and implementation of various Internet protocols (BGP, LISP, Multipath TCP, IPv6 Segment Routing,

Multipath QUIC, ...). This research received various best paper awards. Olivier Bonaventure is the current Editor of SIGCOMM's Computer Communication Review where he encourages the publication of reproducible research.

Abstract : Many researchers represent the TCP/IP protocol suite by using the hourglass model. There is a wide variety of application layer protocols that use a wide variety of link-layer technologies but only a few protocols in the network and transport layers. Although the key principles of IPv6 have been known for almost 20 years, it only started to be deployed at a large scale during the last few years. The transport layer is another example of conservatism since most applications continue to rely on the venerable TCP and UDP protocols. After years of slow evolution, the IETF has recently agreed to change several of the key transport and network protocols. In this talk, I'll explore the motivations and the basic principles of three of these recently proposed protocols : Multipath TCP, IPv6 Segment Routing and QUIC. These three protocols, alone or combined, can affect network researchers because they open a new dimension in the way endpoints can interact with the network. This opens new possibilities for failure recovery, congestion control, traffic engineering, ...

NI 2018 Keynote Speaker



Kung-Kiu Lau

University of Manchester, UK

"Software Component Models: A Survey of Software Componentisation"

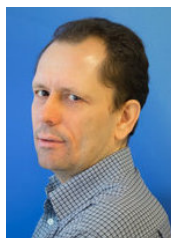
Kung-Kiu Lau holds a PhD from the University of Leeds, UK, and is currently a senior lecturer, leading the Component-based Software Development research group, in the School of Computer Science, the University of Manchester, UK.

He is the author of a textbook, the editor of a research monograph and a book series on Component-based Software Development, all published by World Scientific. He is a member of the editorial boards of the Journal of Universal Computer Science and the Journal of Applied Logic (area editor: Logic and Software Engineering).

He was a principal investigator on the European projects CESAR (2009-2012) and EMC2 (2014-2016). He was programme (co-)chair for the Second European Conference on Service-oriented and Cloud Computing (ESSOC), 2013, and general chair of the Third ESSOC, 2014. He has presented tutorials on Software Component Models at the International Conference on Software Engineering, the International Conference on Automated Software Engineering and the International Symposium on Component-based Software Engineering.

Abstract : Componentisation has always been seen as the key to tackling scale and complexity, nowhere more so than the looming Internet of Things. In Software Development, componentisation is defined by component models. In this talk I will survey the landscape of software componentisation, past and present, with an analysis and a taxonomy that may provide useful pointers to componentisation in future large-scale and ultra-complex systems such as the IoT.

ICIN 2018 Tutorial Speakers


Olivier Bonaventure

 Universite catholique de Louvain, Belgium
"Multipath TCP : more than yet another TCP extension"

Abstract: Multipath TCP is one of the latest TCP extensions that has been specified within the IETF. Multipath TCP was initially proposed by researchers to enable TCP to use different paths for a single TCP connection. When the work started, these researchers thought that the most complex problem was to define a congestion control scheme that could operate over different paths while being fair with regular TCP. It turned out that most of the complexity of Multipath TCP was in the mechanisms that allow to cope with all the middleboxes that are used in today's Internet. Thanks to these mechanisms, Multipath TCP works correctly in today's Internet. Convinced by the benefits of Multipath TCP, Apple has been using it since 2013 for the Siri application on all iPhones. Since 2017, any iOS application can benefit from the unique capabilities of Multipath TCP. In this tutorial, we'll first explain the main design principles of Multipath TCP and how it copes with today's Internet. Then we'll analyse the different use cases where Multipath TCP has already been deployed and discuss other environments where Multipath TCP could provide huge benefits.


Roberto Minerva

 EIT Digital, Italy
"Federation, programmability and security in future NFV/SDN infrastructures"

Roberto Minerva holds a Ph.D in Computer Science and Telecommunications from Telecom Sud Paris, France, and a Master Degree in Computer Science from Bari University, Italy. He was the Chairman of the IEEE IoT Initiative, an effort to nurture a technical community and to foster research in IoT. Roberto has been for several years in TIMLab, involved in activities on SDN/NFV, 5G, Big Data, architectures for IoT. Now he is a research engineer in Paris Sud Telecom and the Chief Technologist in Bitify.it, a startup aiming to drive the digitalization of businesses in several industries. He is authors of several papers published in international conferences, books and magazines. He has been an adjunct professor for three years at the Turin's Polytechnic teaching a course on Mobile Services. He has given several invited speeches in Conferences and he held several classes at universities and Conferences.

Abstract: The tutorial will give a practical view of how NFV/SDN technologies can be used in order to build a programmable platform and how this platform can be used in order to support the programmability of networked services. During the tutorial an in-depth description of the platform software and how to use the middleware will be provided. This topic is important because these technologies will be fundamental for the evolution towards programmable networking platform with particular reference to 5G and cloud computing. Participants will learn:

- a) how to create a viable platform using open source software;
- b) how to program it, manage and run experiments on it.

Some parts of the tutorial will be presented by :


Giuseppe Carella
 TUB, Germany

Giuseppe Carella is a senior researcher at the computer sciences and electrical engineering faculty of Technical University of Berlin, Institute for Telecommunication Systems. He received his M.Sc. in Engineering of Computer Science from the Alma Mater Studiorum University of Bologna in 2011. During his research work he focused on finding mechanisms and solutions for adopting Cloud Computing technologies in Next Generation Networks. In 2012, he realized one of the first proof of concepts for elastically scaling virtualized network functions. Since 2015 he leads the Open Baton open source initiative, and he is responsible for several European and Industrial project collaborations.


Simone Pizzimenti

Reply Communication Valley, Italy

Simone Pizzimenti is an IT Security Consultant within Communication Valley Reply. He holds a Computer Science Master degree from the Milan University (summa cum Laude). He is currently working on the SoftFIRE project on the Security as a Service concept, aiming at integrating security virtualized features within a ETSI MANO architecture.

ICIN 2018 Program - Tuesday, February 20

9:15 - 9:30 Opening Session

9:30 - 10:30 Keynote : Dynamic Service Parameter Negotiation in the 5G Era

 Christian Jacquenet, Orange Labs, France
 Session Chair : Alex Galis, UCL, UK

11:00 - 12:30 TS1: 5G Network Architecture and Modelling

Session Chair : Dimitri Papadimitriou, Nokia – Bell Labs, Belgium

Optimal Design of 5G Superfluid Networks: Problem Formulation and Solutions

Luca Chiaraviglio (BNIT & University of Rome Tor Vergata, Italy), Fabio D'Andreagiovanni (CNRS & Sorbonne Université, France), Giulio Sidoretti (University of Rome Tor Vergata, Italy) Nicola Blefari-Melazzi CNIT & University of Rome Tor Vergata, Italy), Stefano Salsano CNIT & University of Rome Tor Vergata, Italy)

Multi-Level SDN with Vehicles as Fog Computing Infrastructures: A New Integrated Architecture for 5G-VANETS

Ahmed Soua, Samir Tohme (Institute VEDECOM, France)

A DNS-Based Information-Centric Network Architecture Open to Multiple Protocols for Transfer of Data Objects

Anders Eriksson, Adeel Mohammad Malik (Ericsson Research, Sweden)

An Extension of Radio Network Information Interfaces for Connectivity Management

Evelina Pencheva (University of Sofia, Bulgaria)

14:00 - 15:30 TS2: Cloud and Content Services

Session Chair : Anders Lundqvist, Oracle, Sweden

Scalable Request Routing for VR-ready CDNs

Pierre-Louis Poirion and Jérémie Leguay (Huawei Technologies Co. Ltd, France), Liu Ruosi (Huawei Technologies Co. Ltd., China)

Cloud Based Content Classification with Global-Connected Net (GC-Net)

Zhi Chen and Pin-Han Ho (University of Waterloo, Canada)

On Providing Deadline-Aware Cloud Storage Services

Ghada Tlili, Mohamed Faten Zhani (Ecole de Technologie Supérieure Montreal, Canada), Halima Elbiaze (Université du Québec, Canada)

Pricing and quantization of memory for cloud services with uniform request distribution

Anwar Alyatama (Kuwait University, Kuwait)

16:00-17:45 SS1: Network Design

Session Chair : Jérémie Leguay, Huawei, France

ITU-T Network Model Extension for Virtualized Network Architectures

Benoît Lemoine (Orange Labs, France)

Towards multi-SDN services: Dangers of concurrent resource allocation from multiple providers

Guillaume Fraysse (Orange Labs, and Sorbonne Universites, France), Imen Grida Ben Yahia (Orange Labs, France), Jonathan Lejeune, Pierre Sens, Julien Sopena (Sorbonne Universites, France)

A Big Switch Abstraction to Support Service Function Chaining in Cloud Infrastructure

Tien Van Do, Nam H. Do (University of Technology and Economics, Hungary), Isvan Kispal, Nandor Galambosi, Csaba Rotter, Lorant Nemeth (Nokia Bell Labs, Hungary)

A Data Flow Architecture for Smart City Applications

Jean-Charles Gregoire (INRS-EMT, Montreal, Canada)

Design of C-RAN Fronthaul for LTE Networks

Hugo da Silva, Luis M Correia (University of Lisbon, Portugal)

A Trust Model Based on Evidence-Based Subjective Logic for Securing Wireless Mesh Networks

Freshta Popalyar (Universitat Berlin, Germany), Akmal Yaqini (Universitat Berlin, Germany)

18:00-20:00 Welcome Reception



ICIN 2018 Program - Wednesday, February 21

9:30 - 10:30 Keynote : Challenges in Validating 5G

Pierre Lynch, Ixia Solutions Group, Keysight Technologies, USA
 Session Chair : Bruno Chatras, Orange Labs, France

11:00-12:30 TS3: Routing and Resource Allocation

Session Chair : Rogier Noldus, Ericsson, The Netherlands

A Scalable Resource Allocation Scheme for NFV: Balancing Utilization and Path Stretch

Y.T. Woldeyohannes (Norwegian University of Science and Technology, Norway), Ali Mohammadkhan and K.K. Ramakrishnan (University of California Riverside, USA), Yuming Jiang (Norwegian University of Science and Technology, Norway)

Energy-efficient Path Allocation Heuristic for Service Function Chaining

Mohammad M. Tajiki (University of Tarbiat Modares, Iran), Stefano Salsano (CNIT & University of Rome Tor Vergata, Italy), Mohammad Shojafar (CNIT, Italy), Luca Chiaraviglio (CNIT & University of Rome Tor Vergata, Italy), Behzad Akbari (University of Tarbiat Modares, Iran)

A Globally Optimised Multipath Routing Algorithm Using SDN

Noel Farrugia, Victor Buttigieg and Johann A. Briffa (University of Malta, Malta)

Internet Acceleration with LISP Traffic Engineering and Multipath TCP

Chi-Dung Phung (Sorbonne Universities, France), Matthieu Coudron (Internet Initiative Japan, Japan), Stefano Secci (Sorbonne Universités, France)

14:00-15:30 TS4: Security, Authentication and Privacy

Session Chair : Ning Wang, University of Surrey, UK

Securing Authentication for Mobile Networks, A Survey on 4G issues and 5G answers

Shanay Behrad, Emmanuel Bertin (Orange Labs, France), Noel Crespi (Telecom SudParis, France)

Modelling NFV Concepts with Ontologies

Ian Oliver, Sakshyam Panda, Ke Wang, Aapo Kalliola (Nokia Bell Labs, Finland)

Privacy-preserving user identity in Identity-as-a-Service

Tri Hoang Vo (Deutsche Telekom Berlin, Germany), Woldemar Fuhrmann (University of Applied Sciences Darmstadt, Germany), Klaus-Peter Fischer-Hellmann (Digamma GmbH Darmstadt, Germany)

A Trust-based Game Theoretical Model for Cooperative Intrusion Detection in Multi-cloud Environments

Adel Abusitta, Martine Bellaiche, and Michel Dagenais (Ecole Polytechnique de Montreal, Canada)

16:00-18:00 SS2: QoS Management

Session Chair : Bruce Maggs, Duke University and Akamai, USA

5G & SLAs: Automated proposition and management of agreements towards QoS enforcement

Evgenia Kapassa, Marios Touloupou, Argyro Mavrogiorgou, Dimosthenis Kyriazis (University of Piraeus, Greece)

Intent-based Cloud Service Management

Wu Chao Shingo Horiuchi (Nippon Telegraph and Telephone Corporation, Japan)

Experimenting with cache peering in multi-tenant 5G networks

Konstantinos V. Katsaros, Vasilis Glykantzis (Intracom SA Telecom Solutions, Greece)

Monitoring 5G Radio Access Networks with Cloud-Based Stream Processing Platforms

Drissa Houatra (Orange Labs, France), Yuchia Tseng (IRT SystemX, France)

Reducing the Latency of OpenFlow Rule Changes in Data Centre Networks

Jonathan Sherwin (Cork Institute of Technology, Ireland), Cormac J. Sreenan (University College Cork, Ireland)

Performance evaluation of CQIC and TCP BBR in mobile network

Zhenzhe Zhong, Isabelle Hamchaoui (Orange Labs, France), Rida Khatoun and Ahmed Serhrouchni (Télécom ParisTech, Paris, France)

Real-Time Performance Modeling of Link Layer Protocols for Multi-Layer Protocol Aggregation

Paul.J. Kuehn (University of Stuttgart, Germany)

20:00-23:00 Conference Dinner at "Les Editeurs"


ICIN 2018 Program - Thursday, February 22

09:00-10:30 Invited Session: 5G, are we on the right track?

Session Chair : Amina Boubendir, Orange Labs, France

How to take benefit of edge resources in 5G

Fabrice Guillemin, Orange Labs, France

Next Generation PaaS: putting 5G on the track

Bessem Sayadi, Nokia Bell Labs, France

Standardizing service platforms for 5G: view from the Web

Dominique Hazael-Massieux, W3C, France

ETSI ISG ENI: toward creating a 5G network and service management solution

Ray Forbes, ETSI ENI (Experiential Networked Intelligence), UK

11:00 - 12:30 TS5: Reliability and Energy Efficiency

Session Chair : Stefano Secci, Université Pierre et Marie Curie, France

Technology Assessment for Mission-Critical Services on Automotive Virtual Edge Communicator (AVEC)

Rebecca Copeland, Shohreh Ahvar, Noel Crespi (Telecom SudParis, France), Michael Copeland (Core Viewpoint Ltd, UK), Romain Durand (Transatel, France), Jean-Michel Duquerrois (Airbus DS SLC, France)

Anticipating Minimum Resources Needed to Avoid Service Disruption of Emergency Support Systems

Pedro Martinez-Julia, Ved P. Kafle and Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

GreenPOD: Leveraging Queuing Networks for Reducing Energy Consumption in Data Centers

Fatoumata Balde (Université du Québec a Montreal, Canada and Université Cheikh Anta Diop de Dakar, Senegal), Halima Elbiaze (Université du Québec a Montreal, Canada), Bamba Gueye (Université Cheikh Anta Diop de Dakar, Senegal)

A Systematic Fault-tolerant Computational Model for Both Crash Failures and Silent Data Corruption

Xiaolong Cui, Zaem Hussain, Taieb Znati, Rami Melhem (University of Pittsburgh, USA)

13:30 – 15:00 TS6: Performance and Service Assurance

Session Chair : Noël Crespi, IMT-Telecom SudParis, France

Dynamic Reallocation of SLA Parameters in Passive Optical Network Based on Clustering Analysis

Nejm Eddine Frigui (Orange Labs, France), Tayeb Lemlouma (University of Rennes 1 IRISA, France), Stéphane Gosselin, Benoit Radier and Renaud Le Meur (Orange Labs, France), Jean-Marie Bonnin (IMT Atlantique, France)

Traffic Modeling for Aggregated Periodic IoT Data

Tobias Hofsfeld, Florian Metzger (University of Duisburg-Essen, Germany), Poul E. Heegaard (Norwegian University of Science and Technology, Norway)

Forecast scheduling and its extensions to account for random events

Hind Zaaraoui, Zwi Altman (Orange Labs, France), Eitan Altman (INRIA Sophia Antipolis and LINCOS, France) and Tania Jimenez (Avignon University, France)

Density-aware Cell Zooming

Okan Yaman, Alperen Eroglu, Ertan Onur (Middle East Technical University, Turkey)

15:30 – 17:00 Panel Session: Success factors for 5G networks, today and tomorrow

Moderator : Rogier Noldus, Ericsson, The Netherlands

Rationale :

The new 5G mobile communication network has great promises for the way in which we will communicate. 5G will facilitate communication over a plethora of (mobile) devices and access networks, combining various forms of communication into a meta-communication service.

In addition, the 5G mobile communication network provides effective infrastructure for Machine-to-Machine (M2M) communication, Internet-of-Things (IoT).

5G will, furthermore, continue to articulate the functional separation between access network, core network and service layer and media transmission. This functional separation may reflect itself in the advent of new business models, whereby the different parts of the network are operated by different operators

To foster a good discussion on success factors, the panel will address the following items:

- New multimedia services. A quest for ground breaking new concepts and architecture for innovative communication services that comprise all possible modes of communications, over any (set of) device(s), access network, combined with Virtual reality (VR), Augmented reality (AR), Artificial intelligence (AI), Social media, Over-the-top (OTT) services, to mention a few. The concept of cloud computing will find its way in most parts of the 5G network architecture.
- European 5G Pilot Cities. 5G is here and now. 5G pilots are being staged in many European cities, both small and large. The cities are trying to showcase 5G for services that were not feasible thus far. Successful 5G pilots will pave the way for 5G uptake once 5G standards are complete (late 2018, early 2019). It is hereby observed that 5G pilots are currently putting focus on New Radio (NR) in combination with service that benefit from the reduced latency of NR. From 2020 onwards, 5G deployment will comprise also the 5G communication core network.
- New business model for operator communication networks. Business models will change. The market at large will have to re-define business models. This may not be centered around maximizing profit, but rather on “what can operators contribute to making the world a better place for the next centuries”. And for that matter, the term “operator” may need re-adjustment.

The panel will feature international experts representing different players and having tremendous experience in the domains addressed in this session.

Panel Members :

Raouf Boutaba, University of Waterloo, Canada
 Brigitte Cardinaël, Orange Labs, France
 Roberto Minerva, EIT Digital, Italy
 Jean-Christophe Schiel, Airbus Defence and Space, France

17:00-17:30 Best Paper Award & Closing Session

Demos Sessions

February 20-21-22 : 12:30-14:00

Demo Sessions 1,2 & 3

Information Retention for Disaster-Affected Networks using Content-Centric Networking

Adeel Mohammad Malik, Elias Andersson and Borje Ohlman (Ericsson Research, Sweden)

Demo: A Deep learning based SLA management for NFV-based services

Jaafar Bendriss, Imen Grida Ben Yahia (Orange Labs, France), Roberto Riggio (CreateNet Pisa, Italy), Djamel Zeghlache (Telecom SudParis, France)

Self Provisioning Framework for Virtualized Network Functions

Marouane Mechteri and Imen Grida Ben Yahia (Orange Labs, France)

Cognitive Policy Based SON Management Demonstrator

Tony Daher, Sana Ben Jemaa (Orange Labs, France), Laurent Decreusefond (Telecom ParisTech, France)

An Advanced Telco Cloud Simulator and its usage on modelling multi-cloud and 5G multi-access environments

Peter Hegyi (Nokia Bell Labs, Hungary), Norbert Varga (Budapest University of Technology and Economics, Hungary)

An Open-Source Extendable, Highly-Accurate and Security Aware Simulator for Cloud Applications

Andreas Brokalakis (Synelixis Solutions Ltd, Greece), Nikolaos Tampouratzis (Technical University of Crete, Greece), Antonios Nikitakis (Synelixis Solutions Ltd, Greece), Ioannis Papaefstathiou (Synelixis Solutions Ltd, Greece), Stamatis Andrianakis (Technical University of Crete, Greece), Apostolos Dollas (Technical University of Crete, Greece), Marco Paracchini (Politecnico di Milano, Italy), Marco Marcon (Politecnico di Milano, Italy), Danilo Pietro Pau (Advanced System Technology, STMicroelectronics, Italy), Emanuele Plebani (Advanced System Technology, STMicroelectronics, Italy)

Digital assistance for the automated discovery and deployment of IoT services

Michel Le Pallec, Ludovic Noirie, Pierre Peloso, Dinh Thai Bui, Nicolas Le Sauze (Nokia Bell Labs, France)

Set-Top Box Virtualization as a Personal Cloud Server for 5G Users

Gabriele Baldoni, Christian Grasso, Alfio Lombardo, Corrado Rametta, Andrea Scala, Silvia Sottile (DIEEI - University of Catania, Italy)

Implementation of Content Poisoning Attack Detection and Reaction in Virtualized NDN Networks

Hoang Long Mai (Montimage, France), Messaoud Aouadj, Guillaume Doyen (Troyes University of Technology, France), Daishi Kondo, Xavier Marchal, Thibault Cholez (University of Lorraine, France), Edgardo Montes de Oca, Wissam Mallouli (Montimage, France)

Demo of A Big Switch Abstraction for Service Function Chaining

Nam H. Do, Tien Van Do (Budapest University of Technology and Economics, Hungary), Isvan Kispal, Nandor Galambosi, Csaba Rotter, Lorant Nemeth (Nokia Bell Labs, Hungary)

Testing a Q-learning Approach for Derivation of Scaling Policies in Cloud-based Applications

Yue Jin, Makram Bouzid, Dimitre Kostadinov, and Armen Aghasaryan (Nokia Bell Labs, France)



DRCN 2018 Program - Monday, February 19
9:15 - 9:30 Opening Session
9:30 - 10:30 Keynote : Innovation is back in the transport and network layers

Olivier Bonaventure, Universite catholique de Louvain, Belgium.
 Session chair: Stefano Secci, UPMC, France

11:00 - 13:00 Session A: Resilient Network Design & Modelling

Session chair: Dimitri Papadimitriou, Nokia Bell Labs, Belgium

Reliability Maximization in Stochastic Binary Systems

Hector Cancela, Gustavo Guerberoff, Franco Robledo, Pablo Gabriel Romero (Univ. de la Republica, Uruguay)

Designing a High Availability Subnetwork to Support Availability Differentiation

Abdulaziz S Alashaikh and David Tipper (Univ. of Pittsburgh, USA), Teresa Gomes (Univ. of Coimbra & INESC COIMBRA, Portugal)

Coarse Granular Routing Optical Network Design that is Efficient in Spectral Utilization and Resilient Against Multiple Failures

Tomohiro Ishikawa, Yojiro Mori and Hiroshi Hasegawa (Nagoya Univ., Japan), Ken-Ichi Sato (Nagoya Univ., Japan)

A Modeling approach for Dependability analysis of Smart Distribution Grids

Tesfaye Amare Zerihun, Bjarne E. Helvik and Poul E. Heegaard (Norwegian Univ. of Science and Technology & NTNU, Norway)

14:00 - 15:30 Session B: Resilience for SDN/NFV & DC Networking

Session chair: Dominique Verchere, Nokia Bell Labs, France

LUMEN: A Global Fault Management Framework For Network Virtualization Environments

Sihem Cherrared (Univ. of Rennes 1 & Orange Labs and INRIA, France) and Sofiane Imadali (Orange Labs, France), Eric Fabre and Gregor Goessler (INRIA, France).

Robust SDN Controller Placement to Malicious Node Attacks

Dorabella Santos and Amaro F. de Sousa (Univ. of Aveiro, Portugal), Carmen Mas Machuca (Technical Univ. Munich, Germany).

OTF: Optical Torus-based Fault-tolerant DCN

Saeedeh Akbari Rokn Abadi and Somayyeh Koohi (Sharif Univ. of Technology, Iran).

16:00 - 17:30 Session C: Resilience for Internet Technology

Session chair: Michele Nogueira, Federal University of Parana, Brazil

An Experimental Evaluation of MPTCP-Tunnel- based Hybrid Access

Rolf Winter and Arthur Holzner (Univ. of Applied Sciences Augsburg, Germany).

Evaluation of Algorithms for Multipath Route Selection over the Internet

Fabian Helfert, Heiko Niedermayer and Georg Carle (Technical Univ. Munich, Germany).

Destination-Specific Maximally Redundant Trees: Design, Performance Comparison, and Applications

Wolfgang Braun, Daniel Merling and Michael Menth (Univ. of Tuebingen, Germany).

NI 2018 Program - Monday, February 19
9:15 - 9:30 Opening Session
9:30 - 10:30 Keynote : Componentization Paradigms: Past, Present and Future

Kung-Kiu Lau, University of Manchester, UK

11:00 - 12:00 Session A: Network Intelligence with Componentization paradigms
TANC: Towards Autonomic Network Connectivity

Nathalie Omnes, Karine Guillouard, Meryem Ouzzif, Roland Picard and Pierrick Seïté (Orange Labs, France)

ThingNet: A Micro-Service based IoT Macro-Programming Platform over Edges and Cloud

Yuansong Qiao and Robert Nolan (Athlone Institute of Technology, Ireland), Saul Gill (Athlone Institute of Technology & Software Research Institute, Ireland), Guiming Fang (Institute of Software, Chinese Academy of Sciences, P.R. China), Brian Lee (Athlone Institute of Technology, Ireland)

Analysis of Component-Based Approaches Toward Componentized 5G

Elie El Hayek and Imen Grida Ben Yahia (Orange Labs, France), Damian Arellanes and Kung-Kiu Lau (The University of Manchester, United Kingdom)

12:00 - 12:45 Session B: Machine Learning for Networks
Model-free Resource Management of Cloud-based Applications using Reinforcement Learning

Yue Jin, Makram Bouzid, Dimitre Kostadinov, and Armen Aghasaryan (Nokia Bell Labs, France)

Classification of URL bitstreams using Bag of Bytes

Keichi Shima (IJ Innovation Institute, Japan), Daisuke Miyamoto (Nara Advanced Institute of Science and Technology, Japan) and Hiroshi Abe (IJ Innovation Institute, Japan), Tomohiro Ishihara, Kazuya Okada, Yuji Sekiya and Hirochika Asai (The University of Tokyo, Japan), Yusuke Doi (Preferred Networks Inc., Japan)





February 19 - 22, 2018
Paris, France

ICIN 2018 Venue

Welcome to Orange Gardens

44, Avenue de la République - 92320 Châtillon

Arriving by public transport

Visitor entrance: 44, Avenue de la République

From Central Paris: Métro Line 13 + Orange Gardens shuttles



Two electric shuttles serve the main Orange Gardens entrance in the morning and at the end of the day. One serves the Châtillon Centre T6 tram stop, and the other the car park at the SNCF Technicentre, 166 Avenue de la République, 200m from the Métro Line 13 terminus.

Shuttle times:

- TRAM circuit, from 8am to 9:45am, and 5:15pm to 7:15pm
- Métro circuit, from 8:30am to 9:45am, and 5:30pm to 7:30pm

Three bus routes serve Orange Gardens from the Métro Line 13 terminus: the 388, 294, and 195.

Arriving by car

Visitor car park entrance: 71, Boulevard de la Liberté

To access the visitor car park, you need to show ID, and give the name of the person you have come to see or the event you will be taking part in.

- Allocated visitor spaces are at the far end of Level -1, by the lifts.



160 allocated electric vehicle spaces.



3% of spaces are reserved for visitors with disabilities



GPS Coordinates:

Longitude: 2.292701 / Latitude: 48.801601



Getting to Orange Gardens

From Paris-CDG airport

RER Line B to Arcueil-Cachan, then Bus 162 (approx. 1h20)

By car via A1 and Périphérique to Porte de Châtillon (approx. 1hr)

From Orly airport

Orlybus or Orlyval + RER Line B to Bourg-la-Reine + Bus 388 (approx: 1hr)

By car via A106 and D906 towards Avenue de la République, Châtillon (approx. 25 mins)

From Châtelet

Métro Line 4 + Line 13 + shuttle (approx. 40 mins)

By car via Rue Saint-Jacques to traffic circle on Avenue Jean Moulin, then D906 towards Avenue de la République, Châtillon (approx. 40 mins)



ICIN 2018 Dinner



The Conference dinner will take place on Wednesday February 21, 2018 at :

"Les Editeurs"

4, carrefour de l'Odéon
75006 PARIS

By Metro:

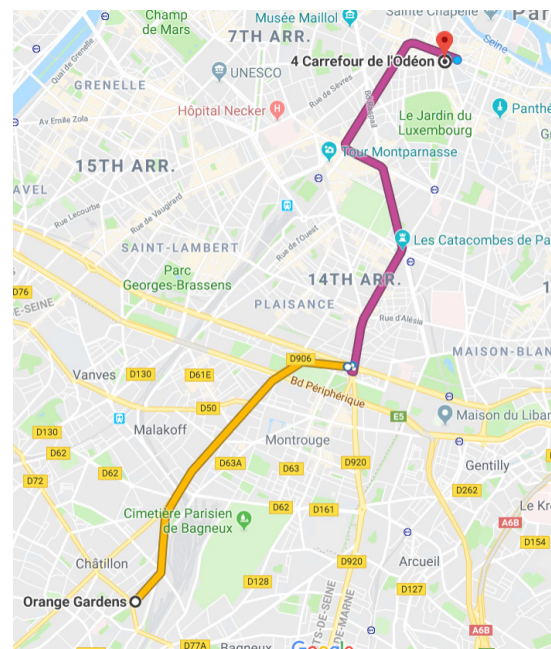
M13 to station Duroc then M10 to station Odéon (41min)

or

M13 to station Gare Montparnasse then M4 to station Odéon (41min)

By Bus/Metro:

Bus 388 to station Porte d'Orléans then M4 to station Odéon (44min)





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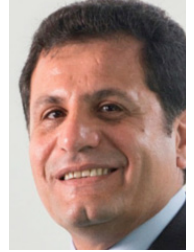


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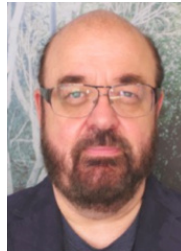


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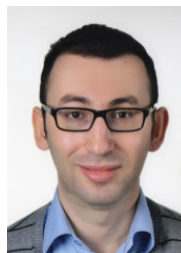


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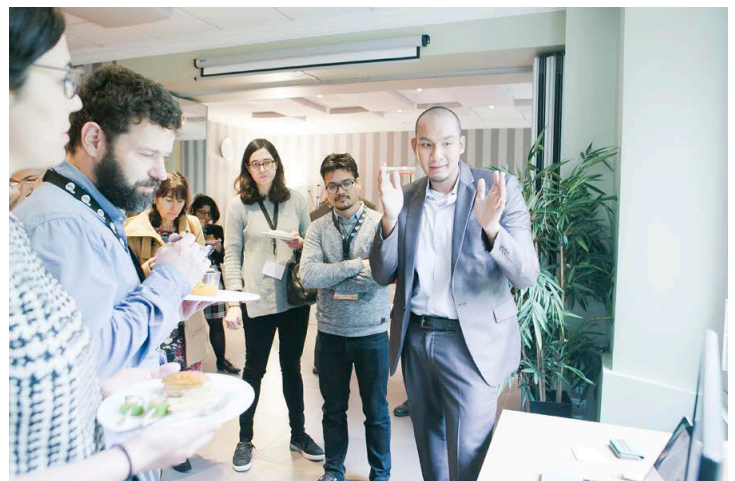
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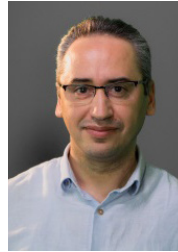


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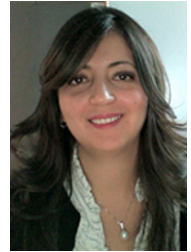
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February 19 - 22, 2018
 Paris, France

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