

2017 20th Conference on Innovations in Clouds, Internet and Networks (ICIN 2017)

**Paris, France
7-9 March 2017**



**IEEE Catalog Number: CFP1750H-POD
ISBN: 978-1-5090-3673-8**

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1750H-POD
ISBN (Print-On-Demand):	978-1-5090-3673-8
ISBN (Online):	978-1-5090-3672-1
ISSN:	2162-3414

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ON THE INTERPLAY BETWEEN SCHEDULING INTERVAL AND BEAMWIDTH SELECTION FOR LOW-LATENCY AND RELIABLE V2V MMWAVE COMMUNICATIONS	1
<i>Cristina Perfecto ; Javier Del Ser ; Mehdi Bennis</i>	
TECHNO-ECONOMIC ANALYSIS AND PREDICTION FOR THE DEPLOYMENT OF 5G MOBILE NETWORK	9
<i>Ghoul Smail ; Jia Weijia</i>	
SUB-CHANNEL ASSIGNMENT AND RESOURCE SCHEDULING FOR NON-ORTHOGONAL MULTIPLE ACCESS (NOMA) IN DOWNLINK COORDINATED MULTI-POINT SYSTEMS	17
<i>Rupesh Singh</i>	
FEASIBILITY, ARCHITECTURE AND COST CONSIDERATIONS OF USING TVWS FOR RURAL INTERNET ACCESS IN 5G	23
<i>Mohsin Khalil ; Junaid Qadir ; Oluwakayode Onireti ; Muhammad Ali Imran ; Shahzad Younis</i>	
DYNAMIC OVERLAY MULTICASTING FOR DEADLINE-DRIVEN REQUESTS PROVISIONING IN ELASTIC OPTICAL NETWORKS	31
<i>Wojciech Kmiecik ; Krzysztof Walkowiak</i>	
BARE-METAL, VIRTUAL MACHINES AND CONTAINERS IN OPENSTACK	36
<i>Charalampos Gavriil Kominos ; Nicolas Seyvet ; Konstantinos Vandikas</i>	
BEEKUP: A DISTRIBUTED AND SAFE P2P STORAGE FRAMEWORK FOR IOE APPLICATIONS	44
<i>Federico Rizzo ; Giovanni Luca Spoto ; Paolo Brizzi ; Dario Bonino ; Giuseppe Di Bella ; Pino Castrogiovanni</i>	
ACHIEVING THE AUTONOMIC ADAPTATION OF RESOURCES IN VIRTUALIZED NETWORK ENVIRONMENTS	52
<i>Pedro Martinez-Julia ; Ved P. Kafle ; Hiroaki Harai</i>	
ANALYSIS OF VIRTUAL RESOURCE ALLOCATION FOR CLOUD-RAN BASED SYSTEMS	60
<i>Valentin Rakovic ; Aleksandar Ichkov ; Nina Grosheva ; Vladimir Atanasovski ; Liljana Gavrilovska</i>	
PERFORMANCE MODELING OF CLOUD APPS USING MESSAGE QUEUEING AS A SERVICE (MAAS)	65
<i>Khaled Salah ; Tarek Rahil Sheltami</i>	
A SCALABLE ROUTING MECHANISM FOR STATEFUL MICROSERVICES	72
<i>Nam H. Do ; Tien Van Do ; Xuan Thi Tran ; Lóránt Farkas ; Csaba Rotter</i>	
PROVIDING FOR PRIVACY IN A NETWORK INFRASTRUCTURE PROTECTION CONTEXT	79
<i>Ian Oliver ; Silke Holtmanns</i>	
INCORPORATING TRUST IN NFV: ADDRESSING THE CHALLENGES	87
<i>Sowmya Ravidas ; Shankar Lal ; Ian Oliver ; Leo Hippelainen</i>	
SCALABLE AND COST-EFFICIENT ALGORITHMS FOR VNF CHAINING AND PLACEMENT PROBLEM	92
<i>Selma Khebbache ; Makhlof Hadji ; Djamel Zeghlache</i>	
CLOUD-BASED MOVING OBJECT DETECTION FOR MOBILE DEVICES	100
<i>Ruoqiao Li ; Xi Xie ; Pu Wang ; Cong Jin</i>	
TOWARDS AUTOMATED IOT SERVICE RECOMMENDATION	103
<i>Ludovic Noirie ; Michel Le Pallec ; Nesrine Ammar</i>	
SDN & NFV IN 5G: ADVANCEMENTS AND CHALLENGES	107
<i>Christos Bouras ; Anastasia Kollia ; Andreas Papazois</i>	
COMMENTS AND IMPROVEMENTS OF “HOTA: HANDOVER OPTIMIZED TICKET-BASED AUTHENTICATION IN NETWORK-BASED MOBILITY MANAGEMENT”	112
<i>Mojtaba Alizadeh ; Mohammad Hessam Tadayon ; Kouichi Sakurai ; Sabariah Baharun ; Hiroaki Anada ; Mazdak Zamani ; Akram Zeki ; Shehzad Ashraf Chaudhry ; Muhammad Khurram Khan</i>	
USABLE AUTHENTICATION SYSTEMS FOR REAL TIME WEB-BASED AUDIO/VIDEO COMMUNICATIONS	117
<i>Hassan Bostani ; Jean-Charles Grégoire</i>	
STOCHASTIC MODELLING AND ANALYSIS OF CLOUD COMPUTING DATA CENTER	122
<i>Said El Kafhali ; Khaled Salah</i>	
FORECASTING AND ANTICIPATING SLO BREACHES IN PROGRAMMABLE NETWORKS	127
<i>Jaafar Bendriss ; Imen Grida Ben Yahia ; Djamel Zeghlache</i>	

DESIGNING AND DEPLOYING A BIOINFORMATICS SOFTWARE-DEFINED NETWORK EXCHANGE (SDX): ARCHITECTURE, SERVICES, CAPABILITIES, AND FOUNDATION TECHNOLOGIES	135
<i>Joe Mambretti ; Jim Chen ; Fei Yeh ; Robert Grossman ; Piers Nash ; Alison Heath ; Renuka Arya ; Stuti Agrawal ; Zhenyu Zhang</i>	
DEMONSTRATION OF SEGMENT ROUTING WITH SDN BASED LABEL STACK OPTIMIZATION	143
<i>Olivier Dugeon ; Rabah Guedrez ; Samer Lahoud ; Géraldine Texier</i>	
INTERNET OF THINGS: AN END-TO-END SECURITY LAYER	146
<i>Reinhard Behrens ; Ali Ahmed</i>	
ON PREDICTION OF RESOURCE CONSUMPTION OF SERVICE REQUESTS IN CLOUD ENVIRONMENTS	169
<i>Fariborz Derakhshan ; Horst Roessler ; Peter Schefczik ; Sabine Randriamasy</i>	
SENSOR OBSERVATION STREAMS WITHIN CLOUD-BASED IOT PLATFORMS: CHALLENGES AND DIRECTIONS	177
<i>Antoine Auger ; Ernesto Exposito ; Emmanuel Lochin</i>	
PERFORMANCE COMPARISON BETWEEN CONTAINER-BASED AND VM-BASED SERVICES	185
<i>Tasneem Salah ; M. Jamal Zemerly ; Chan Yeob Yeun ; Mahmoud Al-Qutayri ; Yousof Al-Hammadi</i>	
A SECURITY CONTROLLER-BASED SOFTWARE DEFINED SECURITY ARCHITECTURE	191
<i>Xiaofeng Qiu ; Fangyuan Cheng ; Weijia Wang ; Gang Zhang ; Yangjun Qiu</i>	
INDEPENDENTLY VERIFIABLE IDENTITY SCHEME (IVIS)	196
<i>Rebecca Copeland ; Michael Copeland</i>	
SDN ENABLED RESILIENCY IN LTE ASSISTED SMALL CELL MMWAVE BACKHAUL NETWORKS	199
<i>Jonathan Vestin ; Andreas Kassler</i>	
A VNF-AS-A-SERVICE DESIGN THROUGH MICRO-SERVICES DISASSEMBLING THE IMS	203
<i>Amina Boubendir ; Emmanuel Bertin ; Noémie Simoni</i>	
AN EXTENDED SNMP BASED IOT CONTEXT-AWARE MODEL FOR DYNAMIC ADAPTABILITY OF EMBEDDED SYSTEMS SOFTWARE	211
<i>Camille Jaggernauth ; Douglas Gubbe</i>	
TELECOM STRATEGIES FOR SERVICE DISCOVERY IN MICROSERVICE ENVIRONMENTS	214
<i>Csaba Rotter ; János Illés ; Gábor Nyíri ; Lóránt Farkas ; Gergely Csatári ; Gergo Huszty</i>	
NFV ENABLING NETWORK SLICING FOR 5G	219
<i>Bruno Chatras ; U Steve Tsang Kwong ; Nicolas Bihannic</i>	
COMMUNICATION PORTALS: IMMERSIVE COMMUNICATION FOR EVERYDAY LIFE	226
<i>Sirisilp Kongsilp ; Matthew N. Dailey</i>	
MININAM: A NETWORK ANIMATOR FOR VISUALIZING REAL-TIME PACKET FLOWS IN MININET	229
<i>Ahmed Khalid ; Jason J. Quinlan ; Cormac J. Sreenan</i>	
A SIOT-AWARE APPROACH TO THE RESOURCE MANAGEMENT ISSUE IN MOBILE CROWDSENSING	232
<i>Luigi Atzori ; Roberto Girau ; Salvatore Martis ; Virginia Pilloni ; Marco Uras</i>	
STIMULUS-BASED SANDBOX FOR LEARNING RESOURCE DEPENDENCIES IN VIRTUALIZED DISTRIBUTED APPLICATIONS	238
<i>Armen Aghasaryan ; Makram Bouzid ; Dimitre Kostadinov</i>	
COGNITIVE 5G NETWORKS: COMPREHENSIVE OPERATOR USE CASES WITH MACHINE LEARNING FOR MANAGEMENT OPERATIONS	252
<i>Imen Grida Ben Yahia ; Jaafar Bendriss ; Alassane Samba ; Philippe Dooze</i>	
CONCEALED REGRESSION FOR AGGREGATION IN LOW POWER WIRELESS NETWORKS	260
<i>Andrey Tolstikhin ; Zeljko Zilic</i>	
TRAFFIC MANAGEMENT IN LTE-WIFI SLICING NETWORKS	268
<i>Ali Saed Dayem Alfoudi ; Mohammed Dighriri ; Gyu Myoung Lee ; Rubem Pereira ; Fung Po Tso</i>	
MEDIATION-BASED COMMUNICATIONS	274
<i>Jean-Charles Grégoire</i>	
GAVEL: SOFTWARE-DEFINED NETWORK CONTROL WITH GRAPH DATABASES	279
<i>Osamah L. Barakat ; David Koll ; Xiaoming Fu</i>	
DESCRIBING THE INTERNET OF THINGS WITH AN ONTOLOGY: THE SUSCITY PROJECT CASE STUDY	294
<i>David Perez Abreu ; Karima Velasquez ; Alexandre Miguel Pinto ; Marilia Curado ; Edmundo Monteiro</i>	

A PERSUASIVE REAL-TIME CARPOOLING SERVICE IN A SMART CITY: A CASE-STUDY TO MEASURE THE ADVANTAGES IN URBAN AREA	300
<i>Matteo Mallus ; Giuseppe Colistra ; Luigi Atzori ; Maurizio Murrone ; Virginia Pilloni</i>	
NEO-NSH: TOWARDS SCALABLE AND EFFICIENT DYNAMIC SERVICE FUNCTION CHAINING OF ELASTIC NETWORK FUNCTIONS	308
<i>Sameer Kulkarni ; Mayutan Arumaithurai ; K. K. Ramakrishnan ; Xiaoming Fu</i>	
ONTOLOGY-BASED MODEL FOR TRUSTED CRITICAL SITE SUPERVISION IN FUSE-IT	313
<i>Shohreh Ahvar ; Gabriel Santos ; Nouredine Tamani ; Bernard Istasse ; Isabel Praça ; Paul-Emmanuel Brun ; Yacine Ghamri ; Noël Crespi</i>	
TELL ME AGAIN, WHY SHOULD I TALK TO STRANGERS?	316
<i>Jean-Charles Grégoire ; Song Nhi Nguyen</i>	
PRIVACY, CONSENT AND AUTHORIZATION IN IOT	319
<i>Cigdem Sengul</i>	
A MODEL TO ENABLE APPLICATION-SCOPED ACCESS CONTROL AS A SERVICE FOR IOT USING OAUTH 2.0	322
<i>Federico Fernández ; Álvaro Alonso ; Lourdes Marco ; Joaquín Salvachúa</i>	
TRUSTWORTHINESS MANAGEMENT IN THE IOT: THE IMPORTANCE OF THE FEEDBACK	325
<i>Michele Nitti ; Roberto Girau ; Luigi Atzori ; Virginia Pilloni</i>	
ACCESS CONTROL IN IOT: FROM REQUIREMENTS TO A CANDIDATE VISION	328
<i>Dina Hussein ; Emmanuel Bertin ; Vincent Frey</i>	
A COMPARISON OF IOT APPLICATION LAYER PROTOCOLS THROUGH A SMART PARKING IMPLEMENTATION	331
<i>Paridhika Kayal ; Harry Perros</i>	
CALIBRATION-FREE WIRELESS INDOOR LOCALIZATION (CAFLOC)	337
<i>Lei Miao</i>	
EFFECTIVE DATA COLLECTION SCHEME FOR REAL-SPATIAL GROUP COMMUNICATION AMONG MOBILE NODES	343
<i>Hitomi Fuji ; Kazuya Tsukamoto ; Akira Nagata ; Katsuichi Nakamura</i>	
AN INFRASTRUCTURE-BASED INTERPOLATION AND PROPAGATION APPROACH FOR IOT DATA ANALYTICS	349
<i>Daniel Kuemper ; Ralf Toenjes ; Elke Pulvermueller</i>	
A PUBLIC TRANSPORTATION JOURNEY PLANNER ENABLED BY IOT DATA ANALYTICS	355
<i>Dan Puiu ; Stefan Bischof ; Bogdan Serbanescu ; Septimiu Nechifor ; Josiane Parreira ; Herwig Schreiner</i>	
AUTOMATIC CONFIGURATION OF SMART CITY APPLICATIONS FOR USER-CENTRIC DECISION SUPPORT	360
<i>Thu-Le Pham ; Stefano Germano ; Alessandra Mileo ; Daniel Küemper ; Muhammad Intizar Ali</i>	
Author Index	