2019 15th International Conference on the Design of Reliable Communication Networks (DRCN 2019)

Coimbra, Portugal 19-21 March 2019



IEEE Catalog Number: ISBN: CFP19818-POD 978-1-5386-8462-7

Copyright © 2019 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:	CFP19818-POD
ISBN (Print-On-Demand):	978-1-5386-8462-7
ISBN (Online):	978-1-5386-8461-0

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



2019 15th International Conference on the Design of Reliable Communication Networks (DRCN)

TECHNICAL PROGRAM

Technical Session I - Availability and Survivability

TS-I.1

Modeling and Evaluating NFV-Enabled Network Services under Different Availability Modes

Besmir Tola, Gianfranco Nencioni, Bjarne E. Helvik and Yuming Jiang pp. 1-5

TS-I.2

A Combinatorial Optimization Framework for the Design of Resilient iBGP Overlays

Cristina Mayr, Claudio Risso and Eduardo Grampín pp. 6-10

TS-I.3

Design of and Resiliency Enhancement in Coarse/Fine Hybrid Granular Routing Optical Networks Based on Iterative Path-Pair-Loop Inflation Keisuke Itakura, Yojiro Mori, Hiroshi Hasegawa and Ken-Ichi Sato pp. 11-15

۲S-I.4

Recovery and Optimization of Post-Disaster Cellular Networks Ayman AbdelHamid, David Tipper and Prashant Krishnamurthy pp. 16-20

Technical Session II - Reliable Network Design and Routing

TS-II.1

The Minimum Cost D-Geodiverse Anycast Routing with Optimal Selection of Anycast Nodes

Amaro F. de Sousa and Dorabella Santos pp. 21-28

TS-II.2

Heuristic Approach for the Design of a High Availability Structure Rita Girao-Silva, Lúcia Martins, Teresa Gomes, David Tipper and Abdulaziz S Alashaikh pp. 29-36

TS-II.3

Backup Resource Allocation Model for Virtual Networks with Probabilistic Protection against Multiple Facility Node Failures Fujun He, Takehiro Sato and Eiji Oki pp. 37-42

Technical Session III - Resilience in Wireless Networks

TS-III.1

Sensor Networks for Structural Health Monitoring of Critical Infrastructures

Using Identifying Codes

Kaustav Basu, Sanjana Dey, Subhas Chandra Nandy and Arunabha Sen pp. 43-50

TS-III.2

eNodeB Failure Detection From Aggregated Performance KPIs in Smart-city LTE Infrastructures

Orestes G Manzanilla-Salazar, Filippo Malandra and Brunilde Sansò pp. 51-58

TS-III.3

Evaluation of a wireless physical security method for flying objects based on the frequency selectivity of the propagation channel

Adrian Exposito Garcia, Hector Esteban, Lorenzo Rubio, Martin Kubisch and Dominic A. Schupke pp. 59-66

TS-III.4

Creating and Handling Ever-changing Communication Scenarios in Tactical Networks

Roberto Rigolin F. Lopes, Pooja Hanavadi Balaraju and Peter Sevenich pp. 67-74

Technical Session IV - Virtual Network Resilience

TS-IV.1

Distance-Based Virtual Network Embedding to Achieve Resilient Cooperative IoT Services

Nagao Ogino and Takeshi Kitahara pp. 75-82

TS-IV.2

On Coding for Reliable VNF Chaining in DCNs

Anna Engelmann, Admela Jukan and Rastin Pries pp. 83-90

TS-IV.3

Building Highly Reliable Networks with GRASP/VND Heuristics

Mathias Bourel, Eduardo A Canale, Franco Robledo, Pablo Gabriel Romero and Luis Stábile pp. 91-98

TS-IV.4

A Performance Comparison of Containers and Unikernels for Reliable 5G Environments

João Barraca Filipe, Flávio Meneses, Asad Ur Rehman, Daniel Corujo and Rui L Aguiar pp. 99-106

Technical Session V - Reliability Analysis

TS-V.1

Building Reliability-Improving Network Transformations

Eduardo A Canale, Franco Robledo, Pablo Gabriel Romero and Julián Viera pp. 107-113

TS-V.2

Reconsidering Network Availability and Time David Tipper pp. 114-121

TS-V.3

On the Robustness of Distributed Computing Networks Jianan Zhang, Hyang-Won Lee and Eytan Modiano pp. 122-129

TS-V.4

Towards Carrier-Grade Service Provisioning in NFV Yordanos Tibebu Woldeyohannes, Besmir Tola and Yuming Jiang pp. 130-137

Special Session - Disaster Resilience of Communication

Networks

supported by COST CA15127-RECODIS Project

RECODIS.1

Weighted Euclidean Steiner Trees for Disaster-Aware Network Design Luis Garrote, Lúcia Martins, Urbano Nunes and Martin Zachariasen pp. 138-145

RECODIS.2

Efficient Online Virtual Machines Migration for Alert-Based Disaster Resilience Omran Ayoub, Obed Huamani, Francesco Musumeci and Massimo Tornatore pp. 146-153

RECODIS.3

Evaluation and Design of Elastic Optical Networks Resilient to Multiple Node Failures

Fábio Barbosa, Amaro F. de Sousa and Agostinho Agra pp. 154-161