

2013 24th Tyrrhenian International Workshop on Digital Communications – Green ICT

(TIWDC 2013)

**Genoa, Italy
23-25 September 2013**



**IEEE Catalog Number: CFP1345E-POD
ISBN: 978-1-4799-0755-7**

Technical Program

DAY 1 – MONDAY, SEPTEMBER 23TH, 2013

Keynote 1: Paul J. Kühn, “The Use of Performance Modeling Methods for Energy-Efficiency and QoS Management of ICT Systems and in Smart Grid Control” [9:00 – 10:00]

Session 1: GreenNet “FIRB” Project – Organizer and Chair: Roberto Bruschi, CNIT, Italy [10:30 – 12:30]

A Heuristic Approach to Solve the Table Lookup Bypass Problem ..

Antonio Cianfrani (University of Roma “La Sapienza”, Italy); Angelo Coiro (University of Rome “La Sapienza”, Italy); Marco Listanti (University of Rome “La Sapienza”, Italy); Marco Polverini (University “La Sapienza” Roma, Italy)

The Energy Footprint of Content-Centric Residential Community Networks ..

Rosario G. Garroppo (University of Pisa, Italy); Gianfranco Nencioni (University of Pisa, Italy); Gregorio Procissi (University of Pisa, Italy); Luca Tavanti (University of Pisa, Italy)

Enabling the TCP Segmentation Offload to Save Energy ..

Raffaele Bolla (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Olga Maria Jaramillo Ortiz (University of Genoa, Italy); Riccardo Rapuzzi (University of Genoa, Italy)

Optimizing Power Delay Product in Energy-Aware Packet Forwarding Engines ..

Raffaele Bolla (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Franco R. Davoli (University of Genoa, Italy); Paolo Lago (University of Genoa, Italy)

Session 2: Energy Efficient Operations and Optimization in Communications – Organizer and Chair: Paul Kuehn, University of Stuttgart, Germany [13:30 – 15:00]

Evaluation of a Centralized Method for One-Step Multi-Layer Network Reconfiguration ..

Frank Feller (University of Stuttgart, Germany)

Greening Cellular Radio Access Networks: A Numerical Method for the Selection of Detachable Base Stations in Low Traffic Scenarios ..

Andreas Baumgartner (Chemnitz University of Technology, Germany); Thomas Bauschert (Chemnitz University of Technology, Germany)

Session 3: GreenTouch 1 – Organizer and Chair: Antonio Capone, Politecnico di Milano, Italy [15:00 – 16:00]

Context Management in Energy-efficient Radio Access Networks ”

Alessandro E. C. Redondi (Politecnico di Milano, Italy); Ilario Filippini (Politecnico di Milano, Italy); Antonio Capone (Politecnico di Milano, Italy)

Session 4: GreenTouch 2 – Organizer and Chair: Antonio Capone, Politecnico di Milano, Italy [16:30 – 18:00]

Power Consumption Evaluation for Next-Generation Passive Optical Networks ”

Sofie Lambert (Ghent University - iMinds, Belgium); Bart Lannoo (Ghent University - iMinds, Belgium); Julio Montalvo (Telefónica I+D, Spain); Jose Alfonso Torrijos (Telefonica I+D, Spain); Peter Vetter (Alcatel-Lucent, USA); Didier Colle (iMinds - Ghent University, Belgium); Mario Pickavet (Ghent University - iMinds, Belgium)

Towards a Flexible and Future-Proof Power Model for Cellular Base Stations ”

Claude Desset (IMEC, Belgium); Björn Debaillie (IMEC, Belgium); Filip Louagie (IMEC, Belgium)

Panel: Standard Development in Green ICT within ETSI and ITU-T [18:00 – 19:00]

Claudio Bianco (Chairman of ETSI WGEE1, Telecom Italia), Paolo Gemma (Chairman of WP3/ITU-T study Group 5, ETSI TC EE Secretary & WG EEPS chairman, Huawei)

DAY 2 – TUESDAY, SEPTEMBER 24TH, 2013

Keynote 2: Chip Elliott, “How Low Can We Go? The Frontiers of Green Computing” [9:00 – 10:00]

Session 5: E-CROPS Project – Organizer and Chair: Erol Gelenbe, Imperial College, London, UK [10:30 – 12:30]

Energy Harvesting Communication Networks: Optimization and Demonstration - The E-CROPS Project ”

Erol Gelenbe (Imperial College London, United Kingdom); David Gesbert (Eurecom Institute, France); Deniz Gündüz (Imperial College London, United Kingdom); Haluk Kulah (METU, Turkey); Elif Uysal-Biyikoglu (METU, Turkey)

Towards a Vibration Energy Harvesting WSN Demonstration Testbed ”

Sajjad Baghaee (Middle East Technical University, Turkey); Hasan Uluşan (Middle East Technical University, Turkey); Salar Chamanian (Middle East Technical University, Turkey); Ozge Zorlu (METU-MEMS Research and Applications Centre, Turkey); Haluk Kulah (METU, Turkey); Elif Uysal-Biyikoglu (METU, Turkey)

Optimum Power Level for Communications with Interference ..

Erol Gelenbe (Imperial College London, United Kingdom); Deniz Gündüz (Imperial College London, United Kingdom)

Routing with Mutual Information Accumulation in Energy-Limited Wireless Networks .

Mahdi Shakiba-Herfeh (Middle East Technical University, Turkey); Tolga Girici (TOBB University of Economics and Technology, Turkey); Elif Uysal-Biyikoglu (METU, Turkey)

Session 6: Green Wireless Networks – Chair: Stefano Buzzi, University of Cassino, Italy [13:30 – 15:30]

Human Time-Scale Duty Cycle for Opportunistic WiFi Based Mobile Networks ..

Lorenzo Bracciale (University of Roma “Tor Vergata”, Italy); Pierpaolo Loreti (University of Rome “Tor Vergata”, Italy); Giuseppe Bianchi (University of Rome “Tor Vergata”, Italy)

Smart-Phone Energy Consumption Vs. 3G Signaling Load: The Influence of Application Traffic Patterns ..

Christian Schwartz (University of Wuerzburg, Germany); Frank Lehrieder (University of Wuerzburg, Germany); Florian Wamser (University of Wuerzburg, Germany); Tobias Hoßfeld (University of Wuerzburg, Germany); Phuoc Tran-Gia (University of Wuerzburg, Germany)

Improving Cellular Network Energy Efficiency by Joint Management of Sleep Mode and Transmission Power ..

Simone Morosi (University of Florence - CNIT, Italy); Pierpaolo Piunti (University of Florence - CNIT, Italy); Enrico Del Re (University of Florence, Italy)

Energy Efficient Planning of Cellular Radio Networks ..

Romeo Giuliano (Università di Roma Tor Vergata, Italy); Franco Mazzenga (Università di Roma Tor Vergata, Italy); Marco Petracca (University of Rome “Tor Vergata”, Italy)

Session 7: TREND Project – Organizer and Chair: Marco Ajmone Marsan, Politecnico di Torino, Italy [16:00 – 18:00]

TREND Big Picture on Energy-Efficient Backbone Networks .

Esther Le Rouzic (Orange Labs, France); Raluca Indre (Orange Labs, France); Luca Chiaraviglio (University of Rome Sapienza, Italy); Francesco Musumeci (Politecnico di Milano, Italy); Achille Pattavina (Politecnico di Milano, Italy); Jorge López Vizcaíno (Huawei Technologies Duesseldorf GmbH, Germany); Yabin Ye (Huawei Technologies Duesseldorf GmbH, Germany); Ward Van Heddeghem (Ghent University - iMinds, Belgium); Andrea Bianco (Politecnico di Torino, Italy); Edoardo Bonetto (Politecnico di Torino, Italy); Michela Meo (Politecnico di Torino, Italy); Felipe Jiménez (Telefónica I+D, Spain); Filip Idzikowski (Technical University of Berlin, Germany); Rubén Cuevas (Universidad Carlos III de Madrid, Spain)

An Overview of Energy-efficient Base Station Management Techniques

Yi Zhang (Politecnico di Torino, Italy); Łukasz Budzisz (Technical University of Berlin, Germany); Michela Meo (Politecnico di Torino, Italy); Alberto Conte (Alcatel-Lucent, France); Ivaylo Haratcherev (Alcatel-Lucent Bell Labs France, France); George Koutitas (University of Thessaly, Greece); Leandros Tassioulas (University of Thessaly, Greece); Marco G Ajmone Marsan (Politecnico di Torino, Italy); Sofie Lambert (Ghent University - iMinds, Belgium)

The TREND Experimental Activities on “Green” Communication Networks

Ivaylo Haratcherev (Alcatel-Lucent Bell Labs France, France); Michela Meo (Politecnico di Torino, Italy); Yi Zhang (Politecnico di Torino, Italy); Yige Hu (Politecnico di Torino, Italy); Alberto Conte (Alcatel-Lucent, France); Filip Idzikowski (Technical University of Berlin, Germany); Łukasz Budzisz (Technical University of Berlin, Germany); Fatemeh Ganji (TU Berlin, Germany); Raffaele Bolla (University of Genoa, Italy); Olga Maria Jaramillo Ortiz (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Antonio Cianfrani (University of Roma “La Sapienza”, Italy); Luca Chiaraviglio (University of Rome Sapienza, Italy); Angelo Coiro (University of Rome “La Sapienza”, Italy); Roberto Gonzalez (Universidad Carlos III de Madrid, Spain); Carmen Guerrero (University Carlos III of Madrid, Spain); Edion Tego (Fondazione Ugo Bordoni, Italy); Francesco Matera (Fondazione Ugo Bordoni, Italy); Stratos Keranidis (University of Thessaly and CERTH, Greece); Giannis Kazdaridis (University of Thessaly, Greece); Thanasis Korakis (Polytechnic Institute of New York University, USA)

A Survey on Game-Theoretic Approaches to Energy-Efficient Relay-Assisted Communications

Alessio Zappone (Technical University of Dresden, Germany); Stefano Buzzi (University of Cassino and Lazio Meridionale, Italy); Eduard Jorswieck (Dresden University of Technology, Germany); Michela Meo (Politecnico di Torino, Italy)

DAY 3 – WEDNESDAY, SEPTEMBER 25TH, 2013

Keynote 3: Pertti Jauhainen, “Energy efficiency in communication networks in Horizon 2020 perspective” [9:00 – 10:00]

Session 8: ECONET Project – Organizer and Chair: Raffaele Bolla, University of Genoa, Italy [10:30 – 13:00]

EE-DROP: An Energy-Aware Router Prototype

Raffaele Bolla (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Marco Chiappero (University of Genoa, Italy); Luca D’Agostino (Infocom S. R. L., Italy); Paolo Lago (University of Genoa, Italy); Chiara Lombardo (University of Genoa, Italy); Sergio Mangialardi (University of Genoa, Italy); Fabio Podda (University of Genoa, Italy)

Network Connectivity Proxy: An Optimal Strategy for Reducing Energy Waste in Network Edge Devices "

Raffaele Bolla (University of Genoa, Italy); Maurizio Giribaldi (Infocom s r l, Italy); Rafiullah Khan (University of Genoa, Italy); Matteo Repetto (CNIT, Italy)

Shortest Path Green Routing and the Importance of Traffic Matrix Knowledge "

Mariusz Kamola (Warsaw University of Technology, Poland); Piotr Arabas (Research and Academic Computer Network NASK, Poland)

On the Design of Energy-Efficient Service Rate Control Mechanisms "

Michal Karpowicz (Warsaw University of Technology, Poland)

An Analytical Tool to Design a Router Governor Controlling Energy Consumption and Temperature "

Alfio Lombardo (University of Catania, Italy); Vincenzo Riccobene (University of Catania, Italy); Giovanni Schembra (University of Catania, Italy)

Session 9: COST ICo8o4 – Organizer: Jean-Marc Pierson, Université Paul Sabatier, Toulouse, France; Chair: Maurizio Mongelli, IEIIT-CNR, Genoa, Italy [14:00 – 15:00]

Thermal Influence on the Energy Efficiency of Workload Consolidation in Many-Core Architecture "

Sebastien Lafond (Åbo Akademi University, Finland); Johan Lilius (TUCS and Abo Akademi, Finland); Simon Holmbacka (Åbo Akademi University, Finland); Fredric Hällis (Åbo Akademi University, Finland); Wictor Lund (Åbo Akademi University, Finland); Robert Slotte (Åbo Akademi University, Finland)

Energy Efficient Thresholds for Cached Content in Content Centric Networking "

Sebastien Lafond (Åbo Akademi University, Finland); Tuan Trinh Anh (Budapest University of Technology and Economics, Hungary)

Session 10: Green Network Services – Chair: Sébastien Lafond, Åbo Akademi University, Finland [15:00 – 16:30]

Dynamic HTTP Download Scheduling with Respect to Energy Consumption "

Andreas Blenk (Technische Universität München, Germany); Florian Wamser (University of Wuerzburg, Germany); Thomas Zinner (University of Wuerzburg, Germany); Wolfgang Kellerer (Technische Universität München, Germany); Phuoc Tran-Gia (University of Wuerzburg, Germany)

A Control Theoretic Approach for Energy-Efficient Management of Online Social Network Services "

Luca Caviglione (National Research Council (CNR), Italy); Alessandro Pisano (University of Cagliari, Italy)

© 2014 IEEE. All rights reserved. This article is intended only for the personal use of the individual user and is not to be disseminated broadly.

* This work was supported by the European Union under the FP7 project "GreenNet" (FP7-258194).