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Proceedings of the 5th Special session on green networking and computing

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MESSAGE FROM THE SPECIAL SESSION ORGANIZERS

Foreword

To reduce the energy consumption and improve the environmental sustainability, novel paradigms, methods, techniques, and systems are needed to develop green netwroking and computing technologies, with focus on high-energy efficiency, lowering the dependence on energy sources that lead to greenhouse gas emissions, better re-use of resources and materials, and the use of renewable energy resources. This proceedings solicits works on all aspects of enabling technologies for green networking and computing presented during the fifth Special session dedicated to this topic.

The 5th Special session on green networking and computing was organized in the frame of the 22nd International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2014). The SoftCOM 2014 conference was held in attractive ambience of the Hotel Radisson Blu Resort, Split, Croatia, September 17 to 19, 2014. The Conference is organized by the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB) under the patronage of the Croatian Ministry of Science, Education and Sports. The Conference has been technically co-sponsored by the IEEE Communications Society (ComSoc). Organizers of the 5th Special session on green networking and computing are University of Split, FESB and Politecnico di Milano university, Department of electronics, informatics and bioengineering (DEIB). The Special session is organized in cooperation with the IEEE ComSoc Technical Committee on Green Communications and Computing (TCGCC).

In the frame of 5th Special session on green networking and computing, four accepted papers have been presented in the technical program of the Special session on green networking (SS1). Also, one accepted paper was presented in the session on Signal processing and coding II (S8). Additionally, one presentation held by expert from company Nokia Solutions and Networks, Croatia on the topic considering vendor vision related to satisfying increasing demand for cellular connectivity in a more energy efficient ways, was organized in the frame of conference business forum.

We hope that readers of these proceedings will find the articles and presentations informative and that they will enjoy reading this feature topic devoted to exciting fast-evolving field of green networking and computing. We would like to thank all the authors who submitted articles to this Special session and to all presenters who give their presentations which significantly contribute to international affirmation of this Special session. Finally, we express our gratitude to all reviewers for their comments and valuable feedback on the submitted articles.

Special session Co-chairs

Atonio Capone

Josip Lorincz

PROCEEDINGS INFORMATION

Proceedings of the 5th Special session on green networking and computing
2014 International Conference on Software, Telecommunications and Computer Networks

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SPECIAL SESSION PROGRAM

SS1 - Special session on green networking
Session chair: Josip Lorincz, Ph. D., University of Split, Croatia
September 17, 2014, 09:00 – 10:30, Conference room Brač, (Hotel Radisson Blu Resort Split, Croatia)

Papers on green networking presented in:
S8 – Signal porcessing and coding II
Session Chair: Francesca Vatta, University of Trieste, Italy
September 19, 2014, 09:00 – 10:30, Conference room Hvar, (Hotel Radisson Blu Resort Split, Croatia)

Business forum:
Technology Vision 2020 ... and beyond
***Presenters:** Mr. Darko Giljević, Nokia Solutions and Networks d.o.o., Croatia*
September 17, 2014, 15:30 – 17:00, Conference room Korčula, (Hotel Radisson Blu Resort, Split, Croatia)

Tracks

- ❑ *SS1 - Special Session on Green Networking*
- ❑ *S2 – Signal processing and coding II*
- ❑ *Business forum*

SS1- Special Session on Green Networking

Special Session Organizers: *Antonio Capone, Politecnico di Milano, Italy; Josip Lorincz, University of Split, Croatia*
Chair: *Josip Lorincz, University of Split, Croatia*

❑ **Web Page Download Scheduling Policies for Green Web Crawling**
Vassiliki Hatzi (CERTH and University of Thessaly, Greece), Berkant Barla Cambazoglu (Yahoo! Research, Spain) and Iordanis Koutsopoulos (Athens University of Economics and Business and CERTH & CERTH, Greece)

❑ **An SDN-based Energy-Aware Routing Model for Intra-Domain Networks**
Mahmud Rasih Celenlioglu (Gebze Institute of Technology, Turkey), Haci Ali Mantar (Gebze Institute of Technology, Turkey) and Süleyman Burak Göger (Gebze Institute of Technology - Naval Science and Engineering Institute & Gebze Institute of Technology, Turkey)

❑ **An Energy Consumption Model for 802.11ac Access Points**
Mehmet Demir (Istanbul Technical Universty, Turkey), Gunes Karabulut Kurt (Istanbul Technical University, Turkey) and Mehmet Karaca (AirTies Wireless Networks, Turkey)

❑ **The Impact of Sleep Modes on the Lifetime of Cellular Networks**
Luca Chiaraviglio (University of Rome Sapienza, Italy) and Josip Lorincz (University of Split, Croatia)

S8 – Signal processing and coding II

Session Chair: Francesca Vatta, University of Trieste, Italy

❑ **Energy-Efficient Clock Synchronization using Wake-up Receivers**
Johannes Blanckenstein (Airbus Group Innovations, Germany) and Holger Karl (University of Paderborn, Germany)

Business forum

Darko Giljević, *Nokia Solutions and Networks, Croatia*
Wednesday, September 17, 2014, 15:30-17:00 (Conference room Korčula)

Nokia Siemens Networks and energy efficiency

Abstract: The world's thirst for connectivity and content in mobile telecom area is growing every day. It wants connectivity and content that is more and more universal, and expects more for free. Telecom operators need to serve this insatiable demand for connectivity, in more and more effective and efficient ways.
We believe that by 2020. - "Mobile networks will be required to deliver one Gigabyte of personalized data per user per day profitably."
Support 1000x capacity - To prepare for a 60 fold increase in average traffic per user and ten times more endpoints attached to networks than today, we need to find ways to radically push the capacity and data rates of mobile network into new dimensions to handle this amount of data traffic. This all has particular impact on energy efficiency of the new solutions and how vendor approaches these challenges.

Authors

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