



SYMPOSIUMS
ET DÉBATS

Interaction between Energy Consumption, Quality of Service, Reliability and Security, Maintainability of Computer Systems and Networks (EQSEM)

20–21 octobre 2020

Centre Scientifique de l'Académie Polonaise des Sciences à Paris
(en ligne)

Large scale computer and communication systems (ICT), such as mobile networks, data centres, or the Internet of things, are major consumers of electricity with a substantial environmental impact. Indeed, ICT represents close to 10% of electricity consumption in developed countries and roughly 5-7% of electricity consumption across the world. On the other hand, the use of ICT can be used to substantially reduce the energy consumption of critical socio-economic systems such as the built environment and transportation, by exploiting dynamically acquired (as well as historical) data to affect a smart dynamic management of our energy resources. This conference will address the fundamental scientific trade-offs between, on the one hand an energy intensive usage of information technology and the benefits that may arise in the improvement of sustainability of critical socio-economic systems, and the reduction of non-renewable energy resources, on the one hand, and on the other hand the resulting increase in energy consumption by ICT itself.



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SDK4ED



Software Development ToolKit for Energy Optimization
and Technical Debt Elimination

**Interaction between Energy Consumption, Quality of Service, Reliability
and Security, Maintainability of Computer Systems and Networks
(EQSEM)**

20 – 21 October 2020

**Organized by the Paris Scientific Center and the Institute of Theoretical
and Applied Informatics (IITIS-PAN) Polish Academy of Sciences**

 PROGRAMME
20th October 2020

- 1.30 Welcoming Remarks
- 1.40 – 2.30 Michel Schmitt (TBC), High Council for the Economy, Ministry of the Economy, Finance and the Recovery, FR
“Recent trends and data concerning the energy consumption of ICT”
- 2.30 – 3.00 Charalampos Marantos, Konstantinos Salapas, Lazaros Papadopoulos and Dimitrios Soudris, ICCS National Technical University of Athens, GR
“A flexible Tool for Applications Performance and Energy consumption estimation through Static analysis”
- 3.30 – 4.00 Erol Gelenbe, Pawel Boryszko, Miltiadis Siavvas and Joanna Domanska, Institute of Theoretical and Applied Informatics, Polish Academy of Sciences (PL) and ITI, Center for Research and Technology Hellas (GR)
«Optimum Checkpointing for Time and Energy»
- 4.00 – 4.30 Tadek Czachorski, Erol Gelenbe and Dariusz Marek, Institute of Theoretical and Applied Informatics, Polish Academy of Sciences (PL),
“Optimum ICT and Mission Management for Mobile Platforms”
- 4.30 – 5.20 Fabrice Flipo, Institut Mines-Telecom Business School, Evry:, France *“The worrisome trajectory of the energy consumption by digital systems”*
 (L'inquiétante trajectoire de la consommation énergétique du numérique)

21th October 2020

- 9.30 – 10.00 Georgios Digkas, Apostolos Ampatzoglou, Alexander Chatzigeorgiou, Paris Avgeriou, Oliviu Matei, Robert Heb,
«*Calculating the Technical Debt Interest Generation Risk: A Case Study on New Code*», University of Macedonia (Greece), and Technical University of Cluj (Romania)
- 10.00 – 10.30 Darius Sas, Paris Avgeriou, Ruben Scheedler,
«*Exploring the relation between co-changes and architectural smells*», University of Groningen (The Netherlands)
- 11.00 – 11.30 Dimitrios Tsoukalas, Maria Mathioudaki, Miltiadis Siavvas, Dionysios Kehagias, Alexander Chatzigeorgiou,
«*A Clustering Approach towards Cross-project Technical Debt Forecasting*» University of Macedonia (Greece) and and ITI, Center for Research and Technology Hellas (Greece)
- 11.30 – 12.00 Katia Filus, Erol Gelenbe, Joanna Domanska, Miltiadis Siavvas,
«*Software vulnerability prediction with the Random Neural Network*», Institute of Theoretical and Applied Informatics, Polish Academy of Sciences (PL) and ITI, Center for Research and Technology Hellas (Greece)