Preface

These are the proceedings of the 8th International Workshop on Verification and Evaluation of Computer and Communication Systems (VECoS 2014) held in Bejaia, Algeria, September 29–30, 2014.


The aim of the VECoS workshop is to bring together researchers and practitioners, in the areas of verification, control, performance, quality of service, dependability evaluation and assessment, in order to discuss the state-of-the-art and the challenges in modern computer and communication systems in which functional and non-functional properties are strongly interrelated. Thus, the main motivation for VECoS is to encourage the cross-fertilization between the various formal verification and evaluation approaches, methods and techniques, and especially those developed for concurrent and distributed hardware/software systems.

Beyond its technical and scientific goals, another main purpose of VECoS is to promote collaboration between participants in research and education in the area of computer science and engineering. We welcome contributions describing original research, practical experience reports and tool descriptions/demonstrations in the areas of verification, control, performance, quality of service and dependability evaluation.

The program committee consists of:

Djamal Aissani, LAMOS Bejaia University, Algeria
Amar Aïssani, USTHB, Algiers, Algeria
Yamine Ait Ameur, IRIT/ENSEEIHT Toulouse, France
Ottame Ait Mohamed, Concordia University, Canada
Hassane Allal, Univ Grenoble, France (co-chair)
Kamel Barkaoui, CEDRIC Cnam Paris, France
Faiza Belala, LIRE, UMC, Algeria
Abdellatif Belghith, ENSI, University of Manouba, Tunisia
Belgacem Ben Hedia, LIST-CEA, France
Saddek Bensalem, VERIMAG Grenoble, France
Abdelmadjid Bouabdallah,Heudiasyc Lab, UTC, France
Hanifa Bouchnine, École Polytechnique de Montréal, Canada
Carla Ceatzu, University of Cagliari, Italy
Tijani Chahed, Telecom SudParis, France
Yufeng Chen, Xidian University, China
Jean-Michel Couvreur, LIFO, Univ. Orleáns, France
Isabel Demongodin, LSIS Marseille, France
Karim Djouani, LISSI, UPEC, France
Mohamed Escheikh, SysCom, ENIT, Tunisia
Alessandro Fantecchi, Unifi, Italy
Jean-Marc Faure, LURPA ENS Cachan, France
Francesco Flammini, Ansaldo STS, Italy
Mohamed Ghazel, INRETS, Villeneuve d'Ascq, France
Latéfa Ghoumi, Tlemcen University, Algeria.
Bernd Heidergott, VU Amsterdam University, the Netherlands
Serge Haddad, LSV ENS Cachan, Paris, France
Malika Ioulalen, USTHB Alger, Algeria
Mohamed Jmaiel, ENSI, Sfax, Tunisia
Jorge Julvez, University of Zaragoza, Spain
Mohamed Kaaniche, LAAS, Toulouse, France
Nikolaï Kartashov, Université de Kiev, Ukraine
Fabrice Kordon, LIP6 UPMC, France
Matthieu Lemerre, LIST-CEA, France
Rahim Kacimi, IRIT, Toulouse, France
The invited speakers for VECos 2014 are: Saddek Bensalem from Verimag Lab, France, Bernd Heidergott from VU Amsterdam, the Netherlands and Carla Seatzu from University of Cagliari, Italy.

We received 35 high-quality contributions. For each paper three to four reviews were made. The program committee has accepted 11 papers for full presentation. Furthermore the committee accepted 5 papers as posters.

Without support of our academic and corporate sponsors, the enormous efforts of authors, reviewers, steering committee and the local organizational team this workshop wouldn’t provide such an interesting booklet.

We do hope you enjoy this program and that you make the most of your stay in Bejaïa.

Hassane Alla and Louiza Bouallouche-Medjkoune
Bejaïa, September 2014
Contents

VECoS’14 Proceedings

Part I: Invited Talks

- Saddek Bensalem: Compositional Verification of Timed Systems............................................5
- Carla Seatzu: Fault diagnosis of discrete event systems using Petri nets.................................12
- Bernd Heidergott: Towards a Statistical System Analysis.......................................................16

Part II: Regular Papers

- Hamza Sahli, Faïza Belala and chafia bouanaka: Model-Checking Cloud Systems Using BigMC ......25
- Hichem Debbi: Diagnosis of Probabilistic Models using Causality and Regression ..................34
- Mohamed Ghazel and Florent Peres: A µ-Calculus Framework for the Diagnosability of Discrete Event Systems........................................................................................................45
- Souilah Hocine, Baadache Abderrahmane and Bouallouche-Medjkoune Louiza: Coping with Spoofed PS-Poll Based DoS Attack in IEEE..............................................................57
- Rebouh Nadjette: Failure Detector-Ring Paxos Based Atomic Broadcast Algorithm ..................63
- Yazid Mohand, Sahki Nassim, Bouallouche-Medjkoune Louiza Louiza and Aïssani Djamil: Analytical Modeling of the IEEE 802.11e EDCA Network..............................................69
- Zouweyna Mordji, Mourad Amad and Djamil Aïssani: A Derived Queueing Network Model for Structured P2P Architectures................................................................................76
- Mouloud Atmani, Djamil Aïssani and Yassine Hadjadj-Aoul: Applying data fragmentation in IEEE 802.15.4: modeling and analysis under ........................................................................85
- Outman El Hichami, Mohammed Al Achhab, Ismail Berrada and Badr Eddine El Mohajir: Visual specification language and automatic checking of business process ..........................................93
- Miloud Bennama and Thouraya Bouabana-Tebib: Mapping OCL constraints into CTL-like logic and SML for UML validation............................................................102

Part III: Posters Abstracts

- El Hassen Ait Mokhtar, Radouane Kara and Alaa Chateauneuf: Bayesian networks for the evaluation of complex systems’ availability................................................................................113
- Aldjia Nait Abdesselam, Radouane Kara and Jean Jacques Loiseau: Observer design and feedback controller synthesis with observer in idempotent semiring..............................................120
- Kahlessanene Fares, Bouallouche-Medjkoune Louiza and Aïssani Djamil: Cross-layer energy-aware protocol for wireless sensor networks.................................................................128
- Kamal Mehaoued, Larbi Sekhri and Malika Bourenane: Fairness Improvement of MAC in Wireless Ad Hoc Networks.................................................................143