Preface. Adaptive and Reconfigurable Systems and Architectures (AROSA 2020): Summary Report

Khalil Drira, Mohamed Jmaiel, Ismael Bouassida Rodriguez, Nesrine Khabou

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Khalil Drira
LAAS-CNRS, Université de Toulouse
CNRS
Toulouse, France
drira@laas.fr

Mohamed Jmaiel
ReDCAD, University of Sfax
Digital Research Center of Sfax
Sfax, Tunisia
mohamed.jmaiel@redcad.org

Ismael Bouassida Rodriguez
ReDCAD, University of Sfax
Sfax, Tunisia
bouassida@redcad.org

Nesrine Khabou
ReDCAD, University of Sfax
Sfax, Tunisia
nesrine.khabou@redcad.org

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I. Introduction

The goal of this track is to bring together researchers and practitioners both from the Academia and from the Industry working in the areas of the adaptation and reconfiguration of distributed systems. Different investigation topics are involved, such as: CBSE, Web service, cloud applications, mobile applications, Functional and Non-Functional requirements (QoS, performance, resilience), monitoring, diagnosis, decision and execution of adaptation and reconfiguration. Different research areas are covered: concepts, methods, techniques, and tools to design, develop, deploy and manage adaptive and reconfigurable software systems.

The concept of adaptive and reconfigurable software systems has been introduced in order to describe architectures, which exhibit such properties which can evolve dynamically. An adaptive and reconfigurable software system can repair itself if any execution problems occur, in order to successfully complete its own execution, while respecting functional and Non-Functional agreements. In the design of an adaptive and reconfigurable software system, several aspects have to be considered. For instance, the system should be able to predict or to detect degradations and failures as soon as possible and to enact suitable recovery actions.

II. Topics

For this track, contributions are devoted to functional and non functional adaptability and reconfiguration management in service-oriented and component-based software systems. Specifically, the relevant topics include, but are not limited to:

- Distributed and centralized collaborative solutions for the diagnosis and repair of software systems
- Design for the diagnosability and repairability
- Collaborative Management of Non-Functional requirements (quality, security, robustness, availability)
- Monitoring simple and composite architectures, components and services
- Semantic (or analytic) architectural and behavioral models for monitoring of software systems
- Dynamic reconfiguration of cloud and mobile applications
- Collaborative planning and decision making

- Collaborative technologies for ensuring autonomic properties
- Predictive management of adaptability
- Collaborative Management of autonomic properties
- Experiences in practical adaptive and reconfigurable applications
- Tools and prototypes for managing adaptability of applications

III. Accepted papers

From the 12 submissions received, the program committee selected 5 papers (4 as long papers and 1 as a short paper) for presentation and publication in the WETICE proceedings on the basis of the originality, quality, and relevance to the topics of the track. Each submission was reviewed, at least, by three reviewers. The list of accepted papers is:

- *Autonomic Coordination of IoT Device Management Platforms* by Emna Mezghani, Samuel Berlemont and Marc Douet.
- *Towards an Automatic Identification of Microservices from Business Processes* by Mohamed Daoud, Asmae El Mezouari, Noura Faci, Djamal Benslimane, Zakaria Maamar and Aziz El Fazziki.
- *An Unsupervised Feature Selection Method for Data-Driven Anomaly Detection Systems* by Naif Almusallam.
- *iPaaS in Agriculture 4.0: An Industrial Case* by Rafael Huang Cestari, Sebastien Ducos and Ernesto Exposito.
- *Secure Data Analytic for IoT Cloud-enabled framework using Intel SGX* by Abdulatif Alabdulatif.

Acknowledgment