Editorial

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Biographical notes: Khalil Drira is Directeur de Recherche, a full-time research position at the French National Center for Scientific Research (CNRS). His research interests include formal design, implementation, testing and provisioning of distributed communicating systems and cooperative networked services, model-based analysis and design of correctness properties including testability, robustness, adaptability and reconfiguration. He is author of more than 150 regular and invited papers in international conferences and

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Miriam A.M. Capretz is an Associate Professor and the Associate Chair-Graduate in the Department of Electrical and Computer Engineering at the Western University, Canada. She has been working in the software engineering area for 30 years and has over 140 publications in software engineering. Her current research interests include software evolution, service oriented architecture, ontology and semantic integration, business process management, software security and cloud computing. She has been involved with the organisation of several workshops and symposia, has been serving on program committees in several international conferences as well as has been member of editorial boards of international journals in software engineering. She was a Program Co-Chair of the IEEE Workshop Web2Touch living experience through web (W2T) in 2008 and 2009 and was the Program Chair of the IEEE Symposium on Human and Socio-Cultural Service Oriented Computing 2009.

Ismael Bouassida Rodriguez received the BSc and MSc Degrees in Computer Science from the National School of Computer Sciences of Manouba and his PhD Degree from the University of Toulouse and the University of Sfax in 2011. He joined the National School of Engineers in Sfax as an Assistant Professor of Computer Science in 2010. He joined the Higher Institute of Computer Science and Multimedia of Sfax as an Associate Professor in Computer Science in 2012. His current research areas include software engineering of distributed systems, graphs grammars, self-adaptive and pervasive systems, and autonomic middleware.

1   Introduction

This special issue presents an extended version of seven papers selected from *WETICE 2012*. The extended papers report on research about various topics to support collaborative activities including business process, coordination, information sharing, orchestration, ontologies, decision making and dynamic deployment. The first paper, from Pankaj Goyal and Rao Mikkilineni, presents a new approach to implement π-calculus mobility using DIME network architecture; it is shown how process mobility is an inherent capability of DIMEs. The issue of inter-organisational process management in distributed collaborative activities is addressed by the second paper from Jörn Franke and François Charoy. In the third paper, Rodrigo Bonacin et al. propose a modelling solution for pragmatic aspects of communication acts using SemWeb technologies. The problem of service composition and particularly the automatic transformation from choreography to orchestration is addressed by the fourth paper from Sirine Rebai et al. The fifth paper from Ghada Gharbi et al. tackles self-configuring and self-adapting information networks using an autonomic architecture based on ontological decision models. A web-based data exploration in spatial decisional processes supported by Spatial Decision Support System (SDSS) is described in the sixth paper from

Michele Argiolas et al. The last paper, from Mohamed Nadhmi Miladi et al., addresses the problem of pervasive systems adaptation of their deployed architecture regarding to continuous changes in everyday user's requirements.

2   Content of the issue

In the first paper, *Implementing managed loosely-coupled distributed business processes: a new approach using DIME networks*, Pankaj Goyal and Rao Mikkilineni show a DIME architecture that enables the implementation of mobility; a key capability of the π-calculus. The authors propose the use of DIME FCAPS (fault, configuration, accounting, performance and security) capabilities to support business services management, including fault tolerance, performance and security. The application of this technology to loosely-coupled business process management is an approach to address the dynamicity of relationships between various tasks involved in a process execution.

In the second paper, *Coordination of distributed collaborative activities for disaster management*, Jörn Franke and François Charoy introduce an approach for distributed collaboration, vertical and horizontal inter-organisational process management and improved situation awareness in disaster management. The paper addresses the problem of inter-organisational process management without prior knowledge of the network structure applied to disaster management. The authors introduce an approach for inter-organisational process management which allows the exchange of information about past, progressing and planned actions. They take into account the detection and handling of conflicts which can occur through sharing of actions. The evaluation of the approach by the help of LEGO® serious play™ experiments proves the usefulness of the collaboration tool.

The third paper, *An ontological model for supporting intention-based information sharing on collaborative problem solving*, Rodrigo Bonacin et al. present an ontology model based on the Pragmatics Communication Analysis. Communication acts are classified in the model according to the 'illocution' classification according to three dimensions (time, invention and mode). Instances of the model from two real case studies are presented: education professionals share issues arising in daily activities to find solutions. For the case studies, the CactO model specification is given. An experimental evaluation is then presented, by exploring retrieval scenarios to observe producers and consumers of the model in order to provide richer and more precise message classifications. The results show the feasibility of the proposed approach along with new information sharing possibilities brought by the model.

The paper written by Sirine Rebai et al., *Towards error-handling-aware choreography to orchestration transformation approach*, presents an approach for transformation from choreography to orchestration that can be automatically done by taking into account the capture of errors and exceptions. The authors classify the possible errors in the automatic generation of orchestrations. Based on this classification, they propose an approach to generate correct transformations.

The paper entitled *AODA: an Autonomic and Ontology-Driven Architecture for service-oriented and event-driven systems*, written by Ghada Gharbi et al. describes an autonomic architecture based on decision models built using ontology. The goal is self-configuring and self-adapting service oriented and event-driven distributed systems. The smart metering scenario is used as a case study. As a validation, the authors present

SWRL rules (Monitor, Analyzer, and Planner and Executor rules). The paper describes how semantics is useful to decouple the components of the system to allow interoperability of sensors and actuators with the autonomic engine.

The paper *Web 2.0 services for collaborative spatial decision making* written by Michele Argiolas et al. presents a spatial decision support system, which provides support to Web data exploration in spatial decisional processes. The approach exploits GIS available services through the Internet. The paper describes the application of the solution through a case study in the real estate domain.

The paper written by Mohamed Nadhmi Miladi et al., entitled *Towards an approach for managing dynamic deployment in distributed service oriented architectures* describes the deployment modelling of pervasive services upon a service oriented architecture and their dynamic evolving management through a model driven approach and over the OSGi framework. The paper presents the deployment management aspect, i.e., changing the architecture deployment within nodes. The architecture deployment description provides a suitable distributed version of the architecture structure than a traditional configuration description. The modelling ensures more reliable adaptation to non-functional requirements. The service oriented approach has been considered for building and managing applications.

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