Preface

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Biographical notes: Mimoun Malki received the PhD degree in Computer Science from the University of Sidi Bel-Abbes, Algeria, in 2002. He was an Associate professor in the Computer Science Department at the University of Sidi Bel-Abbes from 2003 to 2010. Currently, he is a full Professor at University of Sidi Bel-Abbes. He is the head of the Evolutionary Engineering and Distributed Information Systems Laboratory. He serves as an editorial board member for the *International Journal of Web Science*. His research interests include databases, information systems interoperability, ontology engineering, linked data, web-based information systems, semantic web services, web reengineering, enterprise mashup and cloud computing.

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This special issue on Ontology Engineering and Web Semantics of the *International Journal of Metadata, Semantics and Ontologies* (*IJMSO*) contains extended papers selected from the Fourth Edition of the International Conference on Web and Information Technologies (ICWIT'2012) held in Sidi Bel-Abbes, Algeria, from 29 to 30 April 2012. The conference attracted papers from academics and researchers from all over the world. The event was a great success and attracted the highest number of participants. From amongst the accepted papers, we have invited a few authors to submit their extended versions for this special issue. Submitted papers were reviewed by at least two reviewers and, based on the reviews, four papers were accepted in the special issue.

In the first paper 'Lightweight domain ontology learning from texts: graph theory based approach using Wikipedia', Bensidi et al. present a novel approach that essentially uses plain text Wikipedia instead of its categorical system and works with a simplified algorithm to infer a domain taxonomy from a graph. This approach answers the challenge of creating concepts' hierarchies from textual data taking advantage of the Wikipedia encyclopaedia to achieve some good quality results.

Next, the second paper 'Towards a representation for multi-viewpoints ontology alignments', by Djakhdjakha et al., focuses on the proposition of a new format allowing the presentation of semantic mapping between multi-viewpoints ontology elements. The extended multi-viewpoints alignment format has the possibility to take into account the different viewpoints aspects in formal way. The formal representation of correspondences is introduced and, to infer new ones, a set of reasoning rules using bridge rules is proposed. Thus, the proposed format has the benefit to be more adapted to the specific needs of multi-viewpoints ontologies alignment, and the viewpoints aspect.

Bensaber in the third paper, 'Facilitating the specification of WSMO ontology using model-driven development', presents a model-driven architecture approach for facilitating the specification of WSMO ontology through the use of meta-model and UML profile for modelling semantic web services. The author develops a transformation approach based on model-driven architecture (MDA) to automate the generation of code by translating XMI specifications (e.g., XML encodings of UML) into equivalent WSMO specifications using ATL (Atlas Transformation Language) transformations.

The fourth paper further discusses the topic of security ontologies. In this case, Nabil et al. propose a global security solution for embedded industrial systems such as SCADA (Supervisory Control and Data Acquisition) and modern (IT-SCADA) platform. This solution is based on the implementation of a distributed semantic block codified (I/F/AV). Security ontology is used and that is implemented in a semantic firewall and semantic IDS software (Intrusion Detection System). Authors implemented WS-Security protocols framework combined with (SSL/TLS) protocol for SCADA, which is optimised with ECC (Elliptic Curve Cryptography).