Editorial

Ricardo Jardim-Gonçalves* and
Adolfo Steiger-Garção

Faculty of Sciences and Technology
New University of Lisbon, UNINOVA – Quinta da Torre
P2825 Monte Caparica, Portugal
Fax: +351–212957786
E-mail: rg@uninova.pt
E-mail: asg@uninova.pt
*Corresponding author

Biographical notes: Ricardo Jardim-Gonçalves holds a PhD degree in Industrial Information Systems from the New University of Lisbon. He is Auxiliar Professor at the Faculty of Sciences and Technology, New University of Lisbon, and Senior Researcher at UNINOVA Institute. He holds a bachelor's degree in Computer Science, and MSc in Operational Research and Systems Engineering. His research activities focus on standard-based intelligent integration frameworks for interoperability, covering architectures, methodologies and toolkits to support improved development, harmonisation and implementation of standards for data exchange in industry, from design to e-business. He has been Technical International Project Leader for more than 15 years, with more than 40 papers published in conferences, journals and books. He is Project Leader in ISO TC184/SC4.

Adolfo Steiger-Garção is a full Professor at the Department of Electrical and Electronic Engineering of the Faculty of Science and Technology of the New University of Lisbon. Head of the DEE/FCT/UNL. Director of the Intelligent Robotics Centre CRI UNINOVA Institute. Responsible for the areas of digital systems and microelectronics. More than 150 scientific publications in international journals, book chapters and international conferences, many of them in the area of computer science and interoperable systems. Responsible during the last ten years for more than 50 international R&D projects. Scientific evaluator of national and international projects and programs.

ISPE Concurrent Engineering: Research and Applications is a series of conferences, which has been a major forum for the international scientific exchange of multidisciplinary and interorganisational aspects of Concurrent Engineering (CE), focused on the research and applications issues of CE.

This conference was held in Madeira Island (Portugal) in July 2003, and prepared a special track of sessions on Intelligent Applications and Business Intelligence, focused on the following topics: data integration in engineering, ontology for engineering, and e-commerce and data integrity in concurrent engineering.

The authors of selected papers participating in this track were invited to contribute in the preparation of this special issue of the *International Journal of Internet and Enterprise Management*. Seven research papers were chosen to be published in the journal, presenting to the scientific and industrial communities ideas and results contributing for the advance in the knowledge and research aspects of internet and enterprise management.

Axel Hahn, in his paper 'Web services for semantic model integration in concurrent engineering', proposes a tool-integration approach based on Semantic web technology to enhance the interoperability between product model entities stored in a semantic network. This semantic network represents very valuable and useful product knowledge that can be used to understand the design work done by other co-workers. Due to the usage of Semantic web technologies, expert and knowledge management systems can easily be integrated to access and use through the internet the product knowledge represented by the semantic network.

'Transforming *ad hoc* product data into canonical product representation' is presented by Jingzhi Guo and Chengzheng Sun, proposing a novel concept-centric definition transformation approach, which includes a 'local product map' and a 'picker object' to be used to transform irregular local product definitions to canonical local product representations based on the product representation model. A major contribution of this paper is the novel definition transformation approach for the semantic integration of heterogeneous *ad hoc* product data distributed in different data repositories, which allows to form a set of canonical local product representations able to communicate with publicly understandable common product representations.

Based on identified industrial challenges, and the current state of the art and state of practice within enterprise modelling, submodels can be combined and reused in model structures with control of metadata and content, enabling high-quality enterprise knowledge management. Frank Lillehagen, John Krogstie and Helge Grenager Solheim in their paper 'From enterprise modelling to enterprise visual scenes' extends the definition and role of Enterprise Modelling (EM), and describes recent research results that have led to the definition of the next generation of enterprise modelling – the Enterprise Visual Scenes (EVS). The paper focuses on the transition from EM to EVS and what the implications will be for industry, developers of solutions, system providers, future users, and user communities.

Hervé Panetto and Jean-François Pétin, in their paper 'Metamodelling of production systems process models using UML stereotypes', describes a methodology based on the use of UML stereotypes to facilitate a common and consensual understanding of an automated system at the early stage of a systems engineering process. Thus, based on a systemic approach it proposes a set of UML stereotypes and its constraints that formalise a framework for the automation of the production systems.

'Taboo search as an intelligent agent for bid evaluation' is presented by Dalila Boughaci and Habiba Drias, proposing a taboo-search-based approach to contribute to solving the bid evaluation problem in e-commerce, taking into account the cost, risk, and temporal constraints to undertake the evaluation of complex bids of suppliers. It uses an intelligent agent executing taboo-search concepts to select the optimal set of bids for coordinated tasks, adopting a random strategy to create a combination of bids, together with context-dependant moves to create neighbourhood combinations.

A major difficulty construction companies are currently facing is the lack of interoperability of business processes and software applications to manage and progress in the market. This problem arises not only during the project phase but also across the whole life cycle that includes operation and maintenance stages. António Grilo and Ricardo Jardim-Gonçalves in their paper 'Analysis on the development of e-platforms in the AEC sector' demonstrates that case studies show evidence that the use of electronic collaborative and commerce platforms by the different players in the AEC sector can be as sophisticated as the best practices found in Automotive, Aeronautics, or Retailing sectors, and presents a methodology based on business factors to assess the readiness and likeliness of the development of e-business and e-commerce between disparate players in AEC projects.

Xiaohui Zhao and Chengfei Liu in their paper 'Process integration based on multiple workflow domains' proposes a business process integration framework by decomposing and distributing the business processes to different workflow domains according to the coupling relationship. Based on the multiple workflow domains design, this framework includes two main operations on business processes to minimise the business relationship across workflow domains and therefore enable each workflow domain to conduct a specific management strategy rather than a common one. With the proposed framework, the authors concluded that an organisation can optimise the configuration of the related resources and staff according to the decomposed processes, and adopt specific management strategies or policies for each domain.

Acknowledgements

The guest editors of this special issue of the *International Journal of Internet and Enterprise Management* would like to thank the Editor-in-Chief, Professor Eldon Li, and all the authors that submitted to this special issue. To the authors with their papers selected to be published in this issue after international referee, we would like to show appreciation for their enthusiasm, commitment, and their endless cooperation. To the anonymous reviewers, thank you for your collaboration.