GUEST EDITOR's INTRODUCTION

This issue of the JIOS journal, "Journal of Information and Organizational Sciences", presents a selection of the papers presented at the 14th International Conference on Information and Intelligent Systems held in Varaždin, September 2003.

The papers were selected after thorough review of at least two international referees.

The papers are arranged in alphabetic order, according the surname of the first author as referential.

In the paper *Assessment of Computer Mediated Communication Competence: Theory and Application in an Online Environment,* Bubaš G., Radošević D. and Hutinski Ž. analyse theoretically based factors of computer mediated communication (CMC) competence in the context of education for effective use of internet technology in online interpersonal communication and group interaction. An empirical analysis of two versions of a newly developed CMC competence self-assessment measure was performed. The first version was applied in a paper-and-pencil form and the second version was administered online. A critique and suggestions for the improvement of the CMC competence self - assessment measure are provided.

In the paper *Metadata Interchange in Service Based Architecture,* Butković Tomac A. and Tomac D. discuss current state of metamodel standards and show new possibilities for metadata interchange based on XML as *de facto* standard for data interchange in the Web environment.

In the paper *Data Access Architecture in Object-oriented Applications Using Design Patterns,* Matić D., Kegalj H. and Butorac D., describe the data access architecture in a modern object-oriented application. Complex application solutions have multiple, parallel data sources. Each data source has specific properties and ways to access data. This architecture, by using solutions that already have been tried, ensures a simple and flexible way to access different data sources. They also describe singleton, data access object and abstract factory patterns and their interaction in achieving flexible and scalable data access architecture.

In the paper *Ontology-based Information Retrieval,* Paralič J. and Kostial I. Present a new, ontology-based approach to information retrieval (IR). The system is based on a domain knowledge representation scheme in form of ontology. New resources registered within the system are linked to concepts from this ontology. In such way resources may be retrieved based on the associations and not only based on partial or exact term matching. In order to evaluate the quality of this retrieval mechanism, experiments to measure retrieval efficiency have been performed with well-known Cystic Fibrosis collection of medical scientific papers. The ontology-based retrieval mechanism has been compared with traditional full text search based on vector IR model as well as with the Latent Semantic Indexing method.

Paralič M. and Krokavec M. present the paper *Multi-agent Applications for Flexible Distributed Programming***,** discussing distributed applications which nowadays have to fulfil challenging criterions in respect of flexible utilization. Availability of different network services should be spread through a number of mobile devices, like PDAs and mobile phones. For such a context, the design and implementation of distributed applications grew over classical client-server architecture. The paper describes the utilization of the mobile agent paradigm for solving this kind of problems. The authors start with a brief description of the ESMA system for support of mobile agent based applications designed and implemented at the Department of Computers and Informatics, TU of Košice. They continue with the methodology for designing and implementation of mobile agent based applications based on this system. Finally, the multi-agent dimension of new solution is emphasized and illustrated on a simple example of on-line registration system.

In the introduction of the paper *Motivation Issues in the Framework for Information Systems Architecture* Varga M. describes the Zachman's Framework for information systems architecture as a scheme for classifying and organizing the designed artefacts created in the process of designing and producing information systems, which classifies

artefacts on two views or dimensions: perspectives or roles and characteristics or abstractions. Although motivation abstractions are often neglected, the motivation should be the most influential driver in designing information system. The author suggests business rules approach, which breaks away business rules from information system's data and processes and places business rules in the centre of users' interests. The responsibility for defining and maintaining business rules must be taken over by people from business sector.