

Knowledge based information systems engineering

Keywords: Enterprise Modelling, User Requirements Engineering, UML, BPMN, Knowledge Base, Enterprise Model, Enterprise Meta-model, Ontologies, MODAF



Research group activities

The main scope of the research is to analyze User Requirements Specification documentation and design stage models generation process from enterprise model in IS development process by using knowledge-based subsystem. There is proposed usage of knowledge-based subsystem, as an additional computer aided software engineering (CASE) tool component for the purpose of avoiding empirically based IS development process.



Proposal

We are looking for the possible cooperation with other researchers as well as the business people oriented to the development of applications and adaptation of the technologies. In the research area we are interested in partners ready to take part in the international projects like Horizon 2020, Eureka, COST and similar collaborative projects. In application development and technology application area we are interested in cooperation with both business partners (big companies and SMEs) and public and state institutions. We are looking for to provide our consulting abilities, development skills and research experience including:

- Business Process Management Services (Problem Domain Analysis and Design Solutions, Business Process Analysis Solutions, Process Documentation Solutions, Process Improvement Solutions, Unstructured Process Solutions).
- Enterprise Information Architecture Design and Development Services (Organizational design solutions, Organizational processes and process standards implementation solutions, Project portfolio management services, Project management services, Requirements Engineering solutions, System development solutions, IT management and decision, IT value, IT complexity, IT openness, IT risk management solutions).



Meet our team

Lead researcher

- **Prof. Dr. Audrius Lopata** has more than 20 year experience in educational, IT project management and R&D fields (including practical experience implementing Payment Card Industry Data Security Standard (PCI DSS) in Lithuanian business field companies). His research interests include Business Process Modelling, Problem Domain Analysis and User Requirements Specification Techniques. He is an author and co-author of more than 50 scientific publications and 4 books. Professor participated as the project manager (or partner) in various scientific and business related projects.

Team members:

Prof. Dr. Rimantas Butleris

Dr. Martas Ambraziūnas

Neringa Žemaitytė

Auksė Stravinskienė

Ilona Veitaitė



Research outcomes

The members of the scientific group together with co- authors published more than 100 articles, some of them published in prestigious international journals indexed by ISI WoS. Members of this group participated as the project managers (or partner) in various scientific and business related projects, were invited to participate as the members of the board in international and local doctoral dissertation defending committees (Informatics and Informatics Engineering Scientific Fields). They actively participates in local (chair of master and PhD students conference

„Information Technologies“) and international (as members of program committee of AKTB workshop in Business Information Systems 2011- 2017 conferences) as well as the members of program committee and chairs of „Intelligent Methods for Data Analysis and Computer Aided Software Engineering“ workshop in international ICIST 2016 conference. Prof. A. Lopata is the Member of Management Committee (COST Association COST Action CA15123. The European research network on types for programming and verification (EUTYPES)).

Most important publications

- **Veitaitė, I. ; Lopata, A..** Knowledge-based UML models generation from enterprise model technique. Cham : Springer Nature. ISSN 1865-0929. eISSN 1865-0937. 2017, p. 314-325.
- **Veitaitė, I.; Lopata, A..** Transformation algorithms of knowledge based UML dynamic models generation // Business information systems workshops BIS 2017, Poznan, Poland, 28-30 June / editor Witold Abramowicz . - Series : Lecture notes in business information processing. Vol 303. Cham : Springer International Publishing, 2017. ISBN 9783319690223. eISBN 9783319690230. p. 59-68. DOI: 10.1007/978-3-319-69023-0.
- **Gudas, S.; Lopata, A.** (2016). Towards Internal Modelling of the Information Systems Application Domain. INFORMATICA, Vol. 27, No. 1, 1-29 ISSN 0868-4952, © Institute of Mathematics and Informatics, DOI: 10.15388/Informatica.2016.74.
- **Veitaitė, I.; Lopata, A.; Žemaitytė, N.** (2016). Enterprise Model Based UML Interaction Overview Model Generation Process. Business Information Systems Workshop Leipzig, Germany, June/Witold Abramowicz (ed.). Berlin: Springer, ISSN: 1865-1348. p. 189-198.



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