

2015 International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2015)

**Barcelona, Spain
29-30 April 2015**



**IEEE Catalog Number: CFP1546X-POD
ISBN: 978-1-4673-8411-7**

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Money-over-IP - From Bitcoin to Smart Contracts and M2M Money <i>George Giaglis</i>	IS-5
Empowering the Knowledge Worker - End-User Software Engineering in Knowledge Management <i>Witold Staniszkis</i>	IS-7
Complexity in the Digital Age - How can IT Help, not Hurt <i>Martin Mocker</i>	IS-9

SERVICE SCIENCE AND BUSINESS INFORMATION SYSTEMS

FULL PAPER

Software Engineering Standards and Guides for Very Small Entities - Implementation in Two Start-ups <i>Claude Y. Laporte, Rory V. O'Connor and Luis Hernán García Paucar</i>	5
---	---

SHORT PAPERS

A Simple Erlang API for Handling DDS Data Types and Quality of Service Parameters <i>Wafa Helali, Khaled Barbaria and Belhassen Zouari</i>	19
A Survey of Cloud Computing Variable Pricing Models <i>Sahar Arshad, Saeed Ullah, Shoab Ahmed Khan, M. Daud Awan and M. Sikandar Hayat Khayal</i>	27
Workflow Optimization through Business Reengineering for Tele-cardiac System <i>Farkhanda Rasheed and Shoab Ahmad Khan</i>	33
Intelligent Broker - A Knowledge based Approach for Semantic Web Services Discovery <i>Mohamed El Kholy and Ahmed Elfatry</i>	39
Toward a Model of Computation for Time-constrained Applications on Manycores <i>Stephane Louise</i>	45

SOFTWARE ENGINEERING

FULL PAPERS

Computing Attributes of Software Architectures - A Static Method and Its Validation <i>Imen Derbel, Lamia Labed Jilani and Ali Mili</i>	55
Cost-effective Functional Testing of Reactive Software <i>R. Venkatesh, Ulka Shrotri, Amey Zare and Supriya Agrawal</i>	67
Identifying Quality Characteristic Interactions during Software Development <i>Gabriel Alberto García-Mireles, Ma Ángeles Moraga de la Rubia, Félix García and Mario Piattini</i>	78

Using Personality Traits and a Spatial Ability Test to Identify Talented Aspiring Designers in User-Centred Design Methodologies <i>Farshid Anvari and Deborah Richards</i>	90
Consistency and Availability of Data in Replicated NoSQL Databases <i>Tadeusz Pankowski</i>	102
A Defect Dependency based Approach to Improve Software Quality in Integrated Software Products <i>Sai Anirudh Karre and Y. Raghu Reddy</i>	110
Automatic Matching of Software Component Requirements using Semi-formal Specifications and a CBSE Ontology <i>Andreas S. Andreou and Efi Papatheocharous</i>	118
Finding the Right Needles in Hay - Helping Program Comprehension of Large Software Systems <i>Ioana Șora</i>	129
A Case Study for Evaluating Bidirectional Transformations in QVT Relations <i>Bernhard Westfechtel</i>	141
SHORT PAPERS	
Effects of Geographical, Socio-cultural and Temporal Distances on Communication in Global Software Development during Requirements Change Management - A Pilot Study <i>Arif Ali Khan, Jacky Keung, Shahid Hussain and Kwabena Ebo Bennin</i>	159
A Real-time Scheduling of Reconfigurable OS Tasks with a Bottom-up SPL Design Approach <i>Hamza Gharsellaoui, Jihen Maazoun, Nadia Bouassida, Samir Ben Ahmed and Hanene Ben-Abdallah</i>	169
Constrained Agglomerative Hierarchical Software Clustering with Hard and Soft Constraints <i>Chun Yong Chong and Sai Peck Lee</i>	177
Simple, Not Simplistic - The Middleware of Behaviour Models <i>Vladimir Estivill-Castro and René Hexel</i>	189
Software Cost Estimation for Global Software Development - A Systematic Map and Review Study <i>Manal El Bajta, Ali Idri, José Luis Fernández-Alemán, Joaquín Nicolas Ros and Ambrosio Toval</i>	197
JETracer - A Framework for Java GUI Event Tracing <i>Arthur-Jozsef Molnar</i>	207
A Systematic Method for Architecture Recovery <i>Fritz Solms</i>	215
Architectural Challenges in Migrating Plan-driven Projects to Agile <i>Vinod Menon, Roopak Sinha and Stephen MacDonell</i>	223
FDMD: Feature-Driven Methodology Development <i>Rezvan Mahdavi-Hezave and Raman Ramsin</i>	229
Stochastic Analogues of Invariants - Martingales in Stochastic Event-B <i>Richard Banach</i>	238
Certification of IPavement Applications for Smart Cities - A Case Study <i>Jesús Ramon Oviedo, Moisés Rodríguez and Mario Piattini</i>	244
M2K - An Approach for an Object-oriented Model of C Applications <i>Ignacio Cassol and Gabriela Arévalo</i>	250

Detecting Feature Duplication in Natural Language Specifications when Evolving Software Product Lines <i>Amal Khtira, Anissa Benlarabi and Bouchra El Asri</i>	257
Co-evolution Analysis for Software Product Lines <i>Anissa Benlarabi, Amal Khtira and Bouchra El Asri</i>	263
Building Multi-Robot System based on Five Capabilities Model <i>Atef Gharbi, Dhouha Ben Noureddine and Nadhir Ben Halima</i>	270
Requirements Engineering Aspects of a Geographically Distributed Architecture <i>Maria Spichkova and Heinz Schmidt</i>	276
Understanding Legacy Architecture Patterns <i>Ricardo Pérez-Castillo, Benedikt Mas and Markus Pizka</i>	282
Dynamic and Scalable Real-time Analytics in Logistics - Combining Apache Storm with Complex Event Processing for Enabling New Business Models in Logistics <i>Benjamin Gaunitz, Martin Roth and Bogdan Franczyk</i>	289
Insights into Transforming a Linux Wireless Device Driver to Run on a Bare Machine <i>William Agosto-Padilla, Ramesh Karne and Alexander Wijesinha</i>	295
Functional Requirements Categorization - Grounded Theory Approach <i>Richa Sharma and K. K. Biswas</i>	301

MOBILE SOFTWARE AND SYSTEMS

FULL PAPER

Mobile App Usability Index (MAUI) for Improving Mobile Banking Adoption <i>Lalit Mohan, Neeraj Mathur and Y. Raghu Reddy</i>	313
---	-----

SHORT PAPERS

Real-time Cargo Volume Recognition using Internet-connected 3D Scanners <i>Felix Föcker, Adrian Neubauer, Andreas Metzger, Gerd Gröner and Klaus Pohl</i>	323
Towards a Model-based Toolchain for Remote Configuration and Maintenance of Space-aware Systems <i>Jan Olaf Blech, Peter Herrmann, Ian Peake and Heinz Schmidt</i>	331

SPECIAL SESSION ON MODEL-DRIVEN INNOVATIONS FOR SOFTWARE ENGINEERING

FULL PAPERS

The Algorithm for Getting a UML Class Diagram from Topological Functioning Model <i>Arturs Solomencevs and Janis Osis</i>	341
Lessons Learned by using the Integrated Domain Modeling Toolset <i>Kelly Verónica Fernández Céspedes, Janis Osis and Gundars Alksnis</i>	352
Specification of Decision-making and Control Flow Branching in Topological Functioning Models of Systems <i>Erika Asnina and Viktoria Ovchinnikova</i>	364

SHORT PAPER

The Algorithm of Transformation from UML Sequence Diagrams to the Topological Functioning Model	377
<i>Viktoria Ovchinnikova and Erika Asnina</i>	

AUTHOR INDEX	385
--------------	-----