# Table of Contents

**SPI and Very Small Entities**

Towards Measuring the Impact of the ISO/IEC 29110 Standard: A Systematic Review .......................................................... 1
   *Euclides Moreno-Campos, Mary-Luz Sanchez-Gordón, Ricardo Colomo-Palacios, and Antonio de Amescua Seco*

A Systems Process Lifecycle Standard for Very Small Entities:
Development and Pilot Trials .................................................... 13
   *Claude Y. Laporte and Rory V. O'Connor*

An Integrated Environment to Support Project Management in VSEs ................................................................. 25
   *Antoni-Lluís Mesquida, Antonia Mas, and Adelaida Delgado*

**Process Improvement Frameworks**

A Critical Evaluation of a Methodology for the Generation of Software Process Improvement Roadmaps ............................................. 36
   *Derek Flood, Fergal Mc Caffery, Gilbert Regan, and Val Casey*

How to Design an Innovative Framework for Process Improvement?
The TIPA for ITIL Case .................................................................. 48
   *Béatrix Barafort, Anne Rousseau, and Eric Dubois*

A Framework for Systematic Change Management .......................... 60
   *Hannu Jaakkola and Bernhard Thalheim*

**Testing and Improvement Issues**

Engineering Process Improvement in Heterogeneous Multi-disciplinary Environments with Defect Causal Analysis ............................ 73
   *Olga Kovalenko, Dietmar Winkler, Marcos Kalinowski, Estefania Serral, and Stefan Biffl*

Information Sources and Their Importance to Prioritize Test Cases in the Heterogeneous Systems Context .................................. 86
   *Ahmad Nauman Ghazi, Jesper Andersson, Richard Torkar, Kai Petersen, and Jürgen Börstler*

Software Process Assessment Validation and Improvement Prioritization ............................................................................. 99
   *Sven Richter and David Escorial Rico*
SPI and People Issues

An Exploration of Individual Personality Types in Software Development ........................................... 111
  Murat Yilmaz, Rory V. O'Connor, and Paul Clarke

Covering the Human Perspective in Software Process Improvement ................................................. 123
  Mirna Muñoz, Jezreel Mejia, Gloria Piedad Gasca-Hurtado, Claudia Valtierra, and Brenda Duron

Assessing the Value of an Agile Coach in Agile Method Adoption ...................................................... 135
  Rory V. O'Connor and Natalia Duchonova

SPI and Quality Issues

The Influence of Management on Software Product Quality: An Empirical Study in Software Developing Companies .............................................................. 147
  Frank Philip Seth, Erja Mustonen-Ollila, and Ossi Taipale

Software Development Methods and Quality Assurance: Special Focus on South Korea ....................... 159
  Jesse Yli-Huumo, Ossi Taipale, and Kari Smolander

A Proposal for the Improvement of Project’s Cost Predictability Using Earned Value Management and Quality Data – An Empirical Study .............................................................. 170
  Adler Diniz de Souza, Ana Regina Cavalcanti Rocha, Djenane Cristina, and Bruno Augusto Constantino

Software Processes in Various Contexts

Software Development Processes for Games: A Systematic Literature Review ........................................ 182
  Ann Osborne O’Hagan, Gerry Coleman, and Rory V. O’Connor

Software Requirements Development: A Path for Improving Software Quality .................................... 194
  Gloria Piedad Gasca-Hurtado, Mirna Muñoz, Jezreel Mejia, and Jose A. Calvo-Manzano

A Traceability Process Assessment Model for the Medical Device Domain ............................................ 206
  Gilbert Regan, Miklos Biro, Fergal Mc Caffery, Kevin Mc Daid, and Derek Flood
## Table of Contents

### Selected Key Notes and Workshop Papers

#### Creating Environments Supporting Innovation and Improvement

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Valorisation through Agility and Catering for Stakeholder Expectations</td>
<td>217</td>
</tr>
<tr>
<td>Elli Georgiadou, Kerstin Siakas, and Richard Messnarz</td>
<td></td>
</tr>
<tr>
<td>Leadership in Sustainability</td>
<td>231</td>
</tr>
<tr>
<td>Gabriela Fistis, Tomislav Rozman, Andreas Riel, and Richard Messnarz</td>
<td></td>
</tr>
<tr>
<td>Game Changing Beliefs for the Product Developing Organization</td>
<td>246</td>
</tr>
<tr>
<td>Morten Elvang</td>
<td></td>
</tr>
<tr>
<td>The Need for a Structured Approach towards Production Technology Roadmaps in Innovation-Driven Industries</td>
<td>251</td>
</tr>
<tr>
<td>Martina Flatscher, Andreas Riel, and Tobias Kösler</td>
<td></td>
</tr>
<tr>
<td>Empowering Entrepreneurship in Europe: Going from the Idea to Enterprise in 4 EU Countries</td>
<td>262</td>
</tr>
<tr>
<td>Eva Homolová, Andreas Riel, Marek Gavenda, Ana Azevedo, Marisa Pais, Jiří Balcar, Alessandra Antinori, Giuseppe Metitiero, Giorgos Giorgakis, Photis Photiades, Damjan Ekert, Richard Messnarz, and Serge Tichkiewitch</td>
<td></td>
</tr>
<tr>
<td>Linguistic Analogy for Software Process Innovation</td>
<td>271</td>
</tr>
<tr>
<td>Kouichi Kishida</td>
<td></td>
</tr>
</tbody>
</table>

#### Risk Management and Functional Safety Management

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding Threats with Hazards in the Concept Phase of Product Development</td>
<td>277</td>
</tr>
<tr>
<td>Masao Ito</td>
<td></td>
</tr>
<tr>
<td>Integrating Functional Safety, Automotive SPICE and Six Sigma – The AQUA Knowledge Base and Integration Examples</td>
<td>285</td>
</tr>
<tr>
<td>Richard Messnarz, Christian Kreiner, Andreas Riel, Serge Tichkiewitch, Damjan Ekert, Michael Langgner, and Dick Theisens</td>
<td></td>
</tr>
<tr>
<td>Compliance and Rigour in Process Assessment for Safety-Critical Domain</td>
<td>296</td>
</tr>
<tr>
<td>Timo Varkoi and Risto Nevalainen</td>
<td></td>
</tr>
</tbody>
</table>
SPI and Assessments and Improvement

The Feature Set of TestSPICE 3.0 ...................................................... 309
  Tomas Schweigert, Andreas Nehfort, and Mohsen Ekssir-Monfared

  Jan Pries-Heje and Jørn Johansen

Author Index ................................................................. 331