Table of Contents

Process Modelling and Assessment

Using Composition Trees to Model and Compare Software Process .......................... 1
  Lian Wen, David Tuffley, and Terry Rout

A Modeling View of Process Improvement .......................................................... 16
  Clênio F. Salviano

An Approach to Evaluating Software Process Adaptation ..................................... 28
  Paul Clarke and Rory V. O'Connor

Evaluation of Software Process Assessment Methods – Case Study .................. 42
  Mohammad Zarour, Alain Abran, and Jean-Marc Desharnais

Safety and Security

Functional Safety Extensions to Automotive SPICE According to ISO
26262 .................................................................................................................. 52
  Per Johannessen, Öjvind Halonen, and Ola Örsmark

An ISO/IEC 15504 Security Extension ................................................................. 64
  Antoni Lluís Mesquida, Antònia Mas, and Esperança Amengual

Medi SPICE

Verification & Validation in Medi SPICE ............................................................. 73
  M.S. Sivakumar, Valentine Casey, Fergal McCaffery, and Gerry Coleman

Medical Device Software Development - A Perspective from a Lean Manufacturing Plant ................................................................. 84
  Oisín Cawley, Ita Richardson, and Xiaofeng Wang

Standalone Software as an Active Medical Device ............................................ 97
  Martin McHugh, Fergal McCaffery, and Valentine Casey

High Maturity

Assessment of Software Process and Metrics to Support Quantitative Understanding: Experience from an Undefined Task Management Process ........................................................................... 108
  Ayça Tarhan and Onur Demirors
Methodical Enhancement of Maturity Level: “SPICE” and “SixSigma” Intertwine......................... 121
   Timo Karasch and Jens Peter Benthaus

Implementation and Improvement

Organizational Support for Process Improvement – Results of an International Survey................................. 133
   Marion Lepmets, Eric Ras, and Alain Renault

Towards a Systemic Maturity Model for Public Software Ecosystems ........................................ 145
   Angela M. Alves, Marcelo Pessoa, and Clênio F. Salviano

   Fritz Stallinger, Robert Neumann, Robert Schossleitner, and Rene Zeilinger

Applying ISO/IEC 12207:2008 with SCRUM and Agile Methods .............. 169
   Emanuel Irrazabal, Felipe Vásquez, Rafael Díaz, and Javier Garzás

Short Papers

Agile and SPICE Capability Levels.................................................. 181
   Celestina Bianco

Application of Lean Principles in Automotive Software Projects............. 186
   Smitha Bhandary and Shah Quadri

Experiences Developing TMMi® as a Public Model .......................... 190
   Matthias Rasking

Experiences from Informal Test Process Assessments in Ireland – Top 10 Findings .................................................. 194
   Fran O’Hara

High Levels of Process Capability in CMMI and ISO/IEC 15504 ............ 197
   Terry Rout

Process Innovation Reaping Customer Satisfaction ............................. 200
   B. Sridhar and G. Rajesh

Process Improvement in an R&D&I Center Using Enterprise SPICE and SPICE for Research Models .............. 204
   Clênio F. Salviano

Med-Trace ........................................ 208
   Fergal McCaffery and Valentine Casey
Functional Safety – SPICE for Professionals? ................................. 212
  Bernhard Sechser

Challenges for Requirements Development: An Industry Perspective .... 217
  Sandra Kelly, Frank Keenan, and Fergal McCaffery

Software Engineering Strategies: Aligning Software Process
Improvement with Strategic Goals ................................................. 221
  Reinhold Plösch, Gustav Pomberger, and Fritz Stallinger

Deploying Lifecycle Profiles for Very Small Entities: An Early Stage
Industry View ........................................................................... 227
  Rory V. O'Connor and Claude Y. Laporte

Past, Present and Future of Process Improvement in Ireland –
An Industry View ..................................................................... 231
  Fran O'Hara

Neural Network Based Effort Prediction Model for Maintenance
Projects .................................................................................... 236
  V. Bharathi and Udaya Shastry

A Framework of Organizational E-Readiness Impact on E-Procurement
Implementation .......................................................................... 240
  Naseebullah, Shuib Bin Basri, P.D.D. Dominic, and
  Muhammad Jehangir Khan

Author Index ............................................................................... 247