# Table of Contents

## Generative Reuse and Formal Domain Languages

A New Control Structure for Transformation-Based Generators .......... 1  
*Ted J. Biggerstaff*

Palette: A Reuse-Oriented Specification Language for Real-Time Systems . 20  
*Binoy Ravindran and Stephen Edwards*

From Application Domains to Executable Domains:  
Achieving Reuse with a Domain Network ........................................ 41  
*Ulf Bergmann and Julio Cesar Sampaio do Prado Leite*

Reuse of Knowledge at an Appropriate Level of Abstraction -  
Case Studies Using Specware .................................................. 58  
*Keith E. Williams, Michael J. Healy and Richard A. Barker*

## Object Oriented Methods 1

Building Customizable Frameworks for the Telecommunications Domain:  
A Comparison of Approaches ..................................................... 74  
*Giovanni Cortese, Marco Braga and Sandro Borioni*

Object Oriented Analysis and Modeling for Families of Systems  
with UML ............................................................................... 89  
*Hassan Gomaa*

Framework-Based Applications: From Incremental Development  
to Incremental Reasoning ......................................................... 100  
*Neelam Soundarajan and Stephen Fridella*

## Product Line Architectures

Achieving Extensibility Through Product-Lines and  
Domain-Specific Languages: A Case Study ............................... 117  
*Don Batory, Clay Johnson, Bob MacDonald and Dale von Heeder*

Implementing Product-Line Features with Component Reuse .......... 137  
*Martin L. Griss*

Representing Requirements on Generic Software in  
an Application Family Model ................................................... 153  
*Mike Mannion, Oliver Lewis, Hermann Kaindl, Gianluca Montroni  
and Joe Wheadon*
Implementation Issues in Product Line Scoping ............................. 170
*Klaus Schmid and Cristina Gacek*

**Requirements Reuse and Business Modeling**

Requirements Classification and Reuse: Crossing Domain Boundaries .... 190
*Jacob L. Cybulski and Karl Reed*

Reuse Measurement in the ERP Requirements Engineering Process ....... 211
*Maya Daneva*

Business Modeling and Component Mining Based on Rough Set Theory . 231
*Yoshiyuki Shinkawa and Masao J. Matsumoto*

**Components and Libraries**

Visualization of Reusable Software Assets ................................. 251
*Omar Alonso and William B. Frakes*

Reasoning about Software-Component Behavior ............................. 266
*Murali Sitaraman, Steven Atkinson, Gregory Kulczycki, Bruce W. Weide, Timothy J. Long, Paolo Bucci, Wayne Heym and Scott Pike*
*and Joseph E. Hollingsworth*

Use and Identification of Components in Component-Based
Software Development Methods ............................................. 284
*Marko Forsell, Veikko Halttunen and Jarmo Ahonen*

Promoting Reuse with Active Reuse Repository Systems ................. 302
*Yunwen Ye and Gerhard Fischer*

**Design Patterns**

A Method to Recover Design Patterns Using Software Product Metrics ... 318
*Hyoseob Kim and Cornelia Boldyreff*

Object Oriented Design Expertise Reuse:
An Approach Based on Heuristics, Design Patterns and Anti-Patterns .... 336
*Alexandre L. Correa, Cláudia M. L. Werner and Gerson Zaverucha*

Patterns Leveraging Analysis Reuse of Business Processes ............... 353
*Marco Paludo, Robert Burnett and Edgard Jamhour*

Constructional Design Patterns as Reusable Components ............... 369
*Sherif Yacoub, Hany H. Ammar and Ali Mili*
Object Oriented Methods 2

A Two-Dimensional Composition Framework to Support Software Adaptability and Reuse ............................................. 388
Constantinos A. Constantinides, Atef Bader and Tzilla Elrad

Structuring Mechanisms for an Object-Oriented Formal Specification Language ................................................... 402
Márcio Cornélio and Paulo Borba

Software Reuse in an Object Oriented Framework: Distinguishing Types from Implementations and Objects from Attributes ............... 420
J. Leslie Keedy, K. Espenlaub, G. Menger, A. Schmolitzky and M. Evered

Compatibility Elements in System Composition ...................... 436
Giancarlo Succi, Paolo Predonzani and Tullio Vernazza

Author Index ........................................................... 449