The Unified Process Explained

The Only Official RUP® Certification Prep Guide and Compact RUP Reference The IBM® Rational Unified Process® has become the de facto industry-standard process for large-scale enterprise software development. The IBM Certified Solution Designer - IBM Rational Unified Process V7.0 certification provides a powerful way for solutions developers to demonstrate their proficiency with RUP. The first and only official RUP certification guide, this book fully reflects the latest versions of the Rational Unified Process and of the IBM RUP exam. Authored by two leading RUP implementers, it draws on extensive contributions and careful reviews by the IBM RUP process leader and RUP certification manager. This book covers every facet of RUP usage. It has been carefully organized to help you prepare for your exam quickly and efficiently--and to provide a handy, compact reference you can rely on for years to come. Coverage includes A full section on RUP exam preparation and a 52-question practice exam Core RUP concepts, the new RUP process architecture, and key principles of business-driven development RUP's architecture-centric approach to iterative development: practical issues and scenarios Patterns for successful RUP project implementation–and "anti-patterns" to avoid The Unified Method Architecture (UMA): basic content and process elements RUP content disciplines, in depth: Business Modeling, Requirements, Analysis and Design, Implementation, Test, Deployment, Project Management, Change and Configuration Management, and Environment Essential RUP work products, roles, and tasks RUP phases, activities, and milestones RUP tailoring and tools for your organization--including introductions to IBM Rational Method Composer (RMC) and MyRUP

bull; Reflects all of the changes that were integrated into RUP v2003-the latest version of the very popular produc t bull; Learn the key concepts, fundamentals of structure, integral content, and motivation behind the RUP bull; Covers all phases of the software development lifecycle -from concept, to delivery, to revision

For any organization to be successful, it must operate in such a manner that knowledge and information, human resources, and technology are continually taken into consideration and managed effectively. Business concepts are always present regardless of the field or industry – in education, government, healthcare, not-for-profit, engineering, hospitality/tourism, among others. Maintaining organizational awareness and a strategic frame of mind is critical to meeting goals, gaining competitive advantage, and ultimately ensuring sustainability. The Encyclopedia of Organizational Knowledge, Administration, and Technology is an inaugural five-volume publication that offers 193 completely new and previously unpublished articles authored by leading experts on the latest concepts, issues, challenges, innovations, and opportunities covering all aspects of modern organizations. Moreover, it is comprised of content that highlights major breakthroughs, discoveries, and authoritative research results as they pertain to all aspects of organizational growth and development including methodologies that can help companies thrive and analytical tools that assess an organization's internal health and performance. Insights are offered in key topics such as organizational structure, strategic leadership, information technology management, and business analytics, among others. The knowledge compiled in this

publication is designed for entrepreneurs, managers, executives, investors, economic analysts, computer engineers, software programmers, human resource departments, and other industry professionals seeking to understand the latest tools to emerge from this field and who are looking to incorporate them in their practice. Additionally, academicians, researchers, and students in fields that include but are not limited to business, management science, organizational development, entrepreneurship, sociology, corporate psychology, computer science, and information technology will benefit from the research compiled within this publication.

A breakthrough approach to managing agile software development, Agile methods might just be the alternative to outsourcing. However, agile development must scale in scope and discipline to be acceptable in the boardrooms of the Fortune 1000. In Agile Management for Software Engineering, David J. Anderson shows managers how to apply management science to gain the full business benefits of agility through application of the focused approach taught by Eli Goldratt in his Theory of Constraints. Whether you're using XP, Scrum, FDD, or another agile approach, you'll learn how to develop management discipline for all phases of the engineering process, implement realistic financial and production metrics, and focus on building software that delivers maximum customer value and outstanding business results.Coverage includes: Making the business case for agile methods: practical tools and disciplines How to choose an agile method for your next project Breakthrough application of Critical Chain Project Management and constraint-driven control of the flow of value Defines the four new roles for the agile manager in software projects—and competitive IT organizations Whether you're a development manager, project manager, team leader, or senior IT executive, this book will help you achieve all four of your most urgent challenges: lower cost, faster delivery, improved quality, and focused alignment with the business.

The first book to cover Agile Modeling, a new modeling techniquecreated specifically for XP projects eXtreme Programming (XP) hascreated a buzz in the software development community-much likeDesign Patterns did several years ago. Although XP presents amethodology for faster software development, many developers findthat XP does not allow for modeling time, which is critical toensure that a project meets its proposed requirements. They havealso found that standard modeling techniques that use the UnifiedModeling Language (UML) often do not work with this methodology. Inthis innovative book, Software Development columnist Scott Amblerpresents Agile Modeling (AM)-a technique that he created formodeling XP projects using pieces of the UML and Rational's UnifiedProcess (RUP). Ambler clearly explains AM, and shows readers how toincorporate AM, UML, and RUP into their development projects withthe help of numerous case studies integrated throughout the book. AM was created by the author for modeling XP projects-anelement lacking in the original XP design The XP community and its creator have embraced AM, which shouldgive this book strong market acceptance Companion Web site at www.agilemodeling.com features updates,links to XP and AM resources, and ongoing case studies about agilemodeling.

Features the best practices in the art and science of constructing software--topics include design, applying good techniques to construction, eliminating errors, planning, managing construction activities, and relating personal character to superior software.

Original. (Intermediate)

As human life increasingly relates to and relies upon interactions with computer systems, researchers, designers, managers and users continuously develop desires to understand the current situations and future development of human computer interactions. Human Computer Interactions: Issues and Challenges focuses on the multidisciplinary subject of HCI which impacts areas such as information technology, computer science, psychology, library science, education, business and management. This book, geared toward researchers, designers, analysts and managers, reflects the most current primary issues regarding human-computer interactive systems, by emphasizing effective design, use and evaluation of such systems.

This book constitutes the refereed proceedings of the 8th European Workshop on Software Process Technology, EWSPT 2001, held in Witten, Germany, in June 2001. The 18 revised full papers presented were carefully reviewed and selected from 31 submissions. Among the areas addressed are process evolution, experiences, mobility and distribution, UML process patterns, and process improvement.

This book features original research and recent advances in ICT fields related to sustainable development. Based the International Conference on Networks, Intelligent systems, Computing & Environmental Informatics for Sustainable Development, held in Marrakech in April 2020, it features peer-reviewed chapters authored by prominent researchers from around the globe. As such it is an invaluable resource for courses in computer science, electrical engineering and urban sciences for sustainable development. This book covered topics including • Green Networks • Artificial Intelligence for Sustainability• Environment Informatics• Computing Technologies

Everything the ColdFusion pro needs to understand Java technology, install and run a Java Web server, write Java apps, and build and deploy JavaServer Pages is in this workbook. Includes practical coverage with loads of code and tips especially for the ColdFusion developer.

The acclaimed beginner's book on object technology now presents UML 2.0, Agile Modeling, and the latest in object development techniques.

Topological UML Modeling: An Improved Approach for Domain Modeling and Software Development presents a specification for Topological UML® that combines the formalism of the Topological Functioning Model (TFM) mathematical topology with a specified software analysis and design method. The analysis of problem domain and design of desired solutions within software development processes has a major impact on the achieved result – developed software. While there are many tools and different techniques to create detailed specifications of the solution, the proper analysis of problem domain functioning is ignored or covered insufficiently. The design of object-oriented software has been led for many years by the Unified Modeling Language (UML®), an approved industry standard modeling notation for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system, and this comprehensive book shines new light on the many advances in the field. Presents an approach to formally define, analyze, and verify functionality of existing processes and desired processes to track incomplete or incorrect functional requirements Describes the path from functional and nonfunctional requirements specification to software design with step-by-step creation and transformation of diagrams and models with very early capturing of security requirements for software systems. Defines all modeling constructs as extensions to UML®, thus creating a new UML® profile which can be implemented in existing UML® modeling tools and toolsets

A new, quantitative architecture simulation approach to software design that circumvents costly testing cycles by modeling quality of service in early design states. Too often, software designers lack an understanding of the effect of design decisions on such quality attributes as performance and reliability. This necessitates costly trial-and-error testing cycles, delaying or complicating rollout. This book presents a new, quantitative architecture simulation approach to software design, which allows software engineers to model quality of service in early design stages. It presents the first simulator for software architectures, Palladio, and shows students and professionals how to model reusable, parametrized components and configured, deployed systems in order to analyze service attributes. The text details the key concepts of Palladio's domain-specific modeling language for software architecture quality and presents the corresponding development stage. It describes how quality information can be used to calibrate architecture models from which detailed simulation models are automatically derived for quality predictions. Readers will learn how to approach systematically questions about scalability, hardware resources, and efficiency. The text features a running example to illustrate tasks and methods as well as three case studies from industry. Each chapter ends with exercises, suggestions for further reading, and "takeaways" that summarize the key points of the chapter. The simulator can be downloaded from a companion website, which offers additional material. The book can be used in graduate courses on software architecture, quality engineering, or performance engineering. It will also be an essential resource for software architects and software engineers and for practitioners who want to apply Palladio in industrial settings.

This book focuses on the design, development, management, governance and application of evolving software processes that are aligned with changing business objectives, such as expansion to new domains or shifting to global production. In the context of an evolving business world, it examines the complete software process lifecycle, from the initial definition of a product to its systematic improvement. In doing so, it addresses difficult problems, such as how to implement processes in highly regulated domains or where to find a suitable notation system for documenting processes, and provides essential insights and tips to help readers manage process evolutions. And last but not least, it provides a wealth of examples and cases on how to deal with software evolution in practice. Reflecting these topics, the book is divided into three parts. Part 1 focuses on software business transformation and addresses the questions of which process(es) to use and adapt, and how to organize process improvement programs. Subsequently, Part 2 mainly addresses process modeling. Lastly, Part 3 collects concrete approaches, experiences, and recommendations that can help to improve software processes, with a particular focus on specific lifecycle phases. This book is aimed at anyone interested in understanding and optimizing software development tasks at their organization. While the experiences and ideas presented will be useful for both those readers who are unfamiliar with software process improvement and want to get an overview of the different aspects of the topic, and for those who are experts with many years of experience, it particularly targets the needs of researchers and Ph.D. students in the area of software and systems engineering or information systems who study advanced topics concerning the organization and management of (software development) projects and process improvements projects.

This book constitutes the proceedings of two events held in conjunction with the CAiSE conferences and related to the areas of enterprise, business-process and information systems modeling: the 18th International Conference on Business Process Modeling, Development and Support, BPMDS 2017, and the 22nd International Conference on Evaluation and Modeling Methods for Systems Analysis and Development, EMMSAD, 2017. They took place in Essen, Germany, in June 2017. The focus theme for BPMDS 2017 papers was "Enabling Business Transformation by Business Process Modeling, Development and Support". From 24 submitted papers, 11 were finally accepted and organized by: Non-functional considerations in business processes; new challenges in business process modeling and support; testing

business processes; business process model comprehension; an experience report on teaching business process modeling. The EMMSAD conference focuses on evaluating, exploring and enhancing modeling methods and techniques for the development of information and software systems, enterprises, and business processes. It received 25 submissions, from which 9 full and 2 short papers were selected and organized: evaluation and comparison of modeling languages and methods; modeling approaches to support decision making; behavioral specification and business process modeling; and modeling languages and methods in evolving context.

Advances in Computers, Volume 113, the latest volume in this innovative series published since 1960, presents detailed coverage of new advancements in computer hardware, software, theory, design and applications. Chapters in this updated release include A Survey on Regression Test-case Prioritization, Symbolic Execution and Recent Applications to Worst-Case Execution, Load Testing and Security Analysis, Model Based Test Cases Reuse and Optimization, Advances in Using Agile and Lean Processes for Software Development, Three Open Problems in the Context of E2E Web Testing and a Vision: NEONATE, Experiences with replicable experiments and replication kits for software engineering research, and Advances in Symbolic Execution. Provides in-depth surveys and tutorials on new computer technology Covers well-known authors and researchers in the field Presents extensive bibliographies with most chapters Includes volumes that are devoted to single themes or subfields of computer science

The Authoritative, Best-Practice Guide to Improving Development Processes with IBM® Rational Unified Process® (RUP®) This book delivers all the knowledge and insight you need to succeed with the IBM Rational Unified Process and Solutions. Joshua Barnes presents a start-to-finish, best-practice roadmap to the complete implementation cycle of IBM RUP–from projecting ROI and making the business case through piloting, implementation, mentoring, and beyond. Drawing on his extensive experience leading large-scale IBM RUP implementations and working with some of the industry's most recognized thought leaders in the Software Engineering Process world, Barnes brings together comprehensive "lessons learned" from both successful and failed projects. You'll learn from real-world case studies, including actual project artifacts. Whether you're an executive, software professional, or consultant, this book will help you continuously improve the maturity of your development processes–and reap the benefits: better quality, faster delivery, and more business value. After reading this book you will be able to · Get past the myths of software process improvement to focus on what's truly practical · Identify and evaluate your best candidate process solutions · Objectively project the ROI achievable with IBM R UP and IBM Rational solutions · Develop funding models, business cases, and executive support · Recruit, staff, organize, and motivate your implementation team · Plan for effective integration, process alignment, and change management · Choose the right pilots, learn the right lessons, and develop effective adoption models · Move quickly to successful program-level implementation · Set maturity level goals for process and tool utilization · Map "End States" for both quantity and quality · Plan for training and mentoring–and understand the distinct role of each · Keep the momentum going after your implementation is complete Link to www.upmentors.com, where you can download actual sample implementation documents–not just templates! www.ibmpressbooks.com

Object-Oriented Analysis and Design for Information Systems clearly explains real object-oriented programming in practice. Expert author Raul Sidnei Wazlawick explains concepts such as object responsibility, visibility and the real need for delegation in detail. The object-oriented code generated by using these concepts in a systematic way is concise, organized and reusable. The patterns and solutions presented in this book are based in research and industrial applications. You will come away with clarity regarding processes and use cases and a clear understand of how to expand a use case. Wazlawick clearly explains clearly how to build meaningful sequence diagrams. Object-Oriented Analysis and Design for Information Systems illustrates how and why building a class model is not just placing classes into a diagram. You will learn the necessary organizational patterns so that your software architecture will be maintainable. Learn how to build better class models, which are more maintainable and understandable. Write use cases in a more efficient and standardized way, using more effective and less complex diagrams. Build true object-oriented code with division of responsibility and delegation.

2010 was the first time that the International Conference on Software Process was held autonomously and not co-located with a larger conference. This was a special challenge and we are glad that the conference gained a lot of attention, a significant number of contributions and many highly interested participants from industry and academia. This volume contains the papers presented at ICSP 2010 held in Paderborn, G- many, during July 8-9, 2010. ICSP 2010 was the fourth conference of the ICSP series. The conference provided a forum for researchers and industrial practitioners to - change new research results, experiences, and findings in the area of software and system process modeling and management. The increasing distribution of development activities, new development paradigms such as cloud computing, new classes of systems such as cyber-physical systems, and short technology cycles are currently driving forces for the software domain. They require appropriate answers with respect to process models and management, suitable modeling concepts, and an understanding of the effects of the processes in specific environments and domains. Many papers in the proceedings address these issues.

The Unified Process ExplainedAddison-Wesley Professional

Provides information on planning and managing a software project.

"This book consists of a series of high-level discussions on technical and managerial issues related to object-oriented development"--Provided by publisher.

The Practical, Start-to-Finish Guide to Planning and Leading Iterative Software Projects Iterative processes have gained widespread acceptance because they help software developers reduce risk and cost, manage change, improve productivity, and deliver more effective, timely solutions. But conventional project management techniques don't work well in iterative projects, and newer iterative management techniques have been poorly documented. Managing Iterative Software Development Projects is the solution: a relentlessly practical guide to planning, organizing, estimating, staffing, and managing any iterative project, from start to finish. Leading iterative development experts Kurt Bittner and Ian Spence introduce a proven, scalable approach that improves both agility and control at the same time, satisfying the needs of developers, managers, and the business alike. Their techniques are easy to understand, and easy to use with any iterative methodology, from Rational Unified Process to Extreme Programming to the Microsoft Solutions Framework. Whatever your role–team leader, program manager, project manager, developer, sponsor, or user representative–this book will help you Understand the key drivers of success in iterative projects Leverage "time boxing" to define project lifecycles and measure results Use Unified Process phases to facilitate controlled iterative development Master core concepts of iterative project management, including layering and evolution Create project roadmaps, including release plans Discover key patterns of risk management, estimation, organization, and iteration planning Understand what must be

controlled centrally, and what you can safely delegate Transition smoothly to iterative processes Scale iterative project management from the smallest to the largest projects Align software investments with the needs of the business Whether you are interested in software development using RUP, OpenUP, or other agile processes, this book will help you reduce the anxiety and cost associated with software improvement by providing an easy, non-intrusive path toward improved results–without overwhelming you and your team.

This book constitutes thoroughly revised and selected papers from the Second International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2014, held in Lisbon, Portugal, in January 2014. The 10 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from 88 submissions. They are organized in topical sections named: invited papers; modeling languages, tools and architectures; and methodologies, processes and platforms.

What is this book about? Professional Java builds upon Ivor Horton's Beginning Java to provide the reader with an understanding of how professionals use Java to develop software solutions. Pro Java starts with an overview of best methods and tools for developing Java applications. It then examines the the more sophisticated and nuanced parts of the Java JDK. The final and most extensive part of the book shows how to implement these ideas to build real-world applications, using both Java APIs as well as related Java open source tools. In short, this book provides a comprehensive treatment of the professional Java development process, without losing focus in exhaustive coverage of isolated features and APIs.

Is the Unified Process the be all and end all standard for developing object-oriented component-based software? Scott Ambler doesn't think so. This book is one in a four-volume series that presents a critical review of the Unified Process -- designed to p

"This book covers multiple systems and developments in design for businesses and enterprises of all sizes, highlighting the advancing technology and research in this area and proposing strategic approaches to manage risks and detect errors"--Provided by publisher.

The idea that "measuring quality is the key to developing high-quality software systems" is gaining relevance. Moreover, it is widely recognised that the key to obtaining better software systems is to measure the quality characteristics of early artefacts, produced at the conceptual modelling phase. Therefore, improving the quality of conceptual models is a major step towards the improvement of software system development. Since the 1970s, software engineers had been proposing high quantities of metrics for software products, processes and resources but had not been paying any special attention to conceptual modelling. By the mid-1990s, however, the need for metrics for conceptual modelling had emerged. This book provides an overview of the most relevant existing proposals of metrics for conceptual models, covering conceptual models for both products and processes. Contents:Towards a Framework for Conceptual Modelling Quality (M Piattini et al.)A Proposal of a Measure of Completeness for Conceptual Models (O Dieste et al.)Metrics for Use Cases: A Survey of Current Proposals (B Bernárdez et al.)Defining and Validating Metrics for UML Class Diagrams (M Genero et al.)Measuring OCL Expressions: An Approach Based on Cognitive Techniques (L Reynoso et al.)Metrics for Datawarehouses Conceptual Models (M Serrano et al.)Metrics for UML Statechart Diagrams (J A Cruz-Lemus et al.)Metrics for Software Process Models (F García et al.) Readership: Senior undergraduates and graduate students in software engineering; PhD students, researchers, analysts, designers, software engineers and those responsible for quality and auditing. Key Features:Presents the most relevant existing proposals of metrics for conceptual models, covering conceptual models for both products and processesProvides the most current bibliography on this subjectThe only book to focus on the quality aspects of conceptual modelsKeywords:Conceptual Model;Quality;Metrics;UML;OCL;Empirical Research

Since its inception Research in Labor Economics has published over 350 articles encompassing a wide range of themes and spanning an

array of labor economics topics. Authors have ranged from young scholars with much potential to mature leaders in the field, including Nobel Prize and John Bates Clark award winners. Over the years Research in Labor Economics has continued to present important new research in labor economics. It covers themes such as labor supply, work effort, schooling, on-the-job training, earnings distribution, discrimination, migration, and the effects of government policies on worker well-being. It aims to apply economic theory and econometrics to analyze important policy-related questions, often with an international focus. To commemorate Research in Labor Economics¿s 35th anniversary, this retrospective edition contains 20 of the most influential Research in Labor Economics articles along with new introductory prefatory updates written by the original authors. These new prefaces emphasize recent developments that each article might have inspired and also discuss remaining unanswered questions.

Is the Unified Process the be all and end all standard for developing object-oriented component-based software? This book is the second in a four volume series that presents a critical review of the Unified Process. The authors present a survey of the alt

"This book manages to convey the practical use of UML 2 in clear and understandable terms with many examples and guidelines. Even for people not working with the Unified Process, the book is still of great use. UML 2 and the Unified Process, Second Edition is a must-read for every UML 2 beginner and a helpful guide and reference for the experienced practitioner." --Roland Leibundgut, Technical Director, Zuehlke Engineering Ltd. "This book is a good starting point for organizations and individuals who are adopting UP and need to understand how to provide visualization of the different aspects needed to satisfy it. " --Eric Naiburg, Market Manager, Desktop Products, IBM Rational Software This thoroughly revised edition provides an indispensable and practical guide to the complex process of object-oriented analysis and design using UML 2. It describes how the process of OO analysis and design fits into the software development lifecycle as defined by the Unified Process (UP). UML 2 and the Unified Process contains a wealth of practical, powerful, and useful techniques that you can apply immediately. As you progress through the text, you will learn OO analysis and design techniques, UML syntax and semantics, and the relevant aspects of the UP. The book provides you with an accurate and succinct summary of both UML and UP from the point of view of the OO analyst and designer. This book provides Chapter roadmaps, detailed diagrams, and margin notes allowing you to focus on your needs Outline summaries for each chapter, making it ideal for revision, and a comprehensive index that can be used as a reference New to this edition: Completely revised and updated for UML 2 syntax Easy to understand explanations of the new UML 2 semantics More real-world examples A new section on the Object Constraint Language (OCL) Introductory material on the OMG's Model Driven Architecture (MDA) The accompanying website provides A complete example of a simple e-commerce system Open source tools for requirements engineering and use case modeling Industrial-strength UML course materials based on the book

Comprehensive coverage of critical issues related to information science and technology.

Refined and streamlined, SYSTEMS ANALYSIS AND DESIGN IN A CHANGING WORLD, 7E helps students develop the conceptual, technical, and managerial foundations for systems analysis design and implementation as well as project management principles for systems development. Using case driven techniques, the succinct 14-chapter text focuses on content that is key for success in today's market. The authors' highly effective presentation teaches both traditional (structured) and object-oriented (OO) approaches to systems analysis and design. The book highlights use cases, use diagrams, and use case descriptions required for a modeling approach, while demonstrating their application to

traditional, web development, object-oriented, and service-oriented architecture approaches. The Seventh Edition's refined sequence of topics makes it easier to read and understand than ever. Regrouped analysis and design chapters provide more flexibility in course organization. Additionally, the text's running cases have been completely updated and now include a stronger focus on connectivity in applications. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Constructing the Infrastructure for the Knowledge Economy: Methods and Tools, Theory and Practice is the proceedings of the 12th International Conference on Information Systems Development, held in Melbourne, Australia, August 29-31, 2003. The purpose of these proceedings is to provide a forum for research and practice addressing current issues associated with Information Systems Development (ISD). ISD is undergoing dramatic transformation; every day, new technologies, applications, and methods raise the standards for the quality of systems expected by organizations as well as end users. All are becoming more dependent on the systems reliability, scalability, and performance. Thus, it is crucial to exchange ideas and experiences, and to stimulate exploration of new solutions. This proceedings provides a forum for just that, addressing both technical and organizational issues.

The author of Developing Applications with Visual Basic and UML (Addison-Wesley, 2000), a consultant on object-oriented distributed systems, presents a large-scale application to explain the lifecycle of building robust Java applications with the Unified Modeling Language using Rational's Software's Unified Plan. Reed also makes a short detour into his Synergy Process. Appends material on the Unified Plan and the BEA WebLogic application server. Assumes programmers' knowledge of Java and a willingness to evolve past a cavalier attitude toward project planning.

This textbook is a systematic guide to the steps in setting up a Capability Maturity Model Integration (CMMI) improvement initiative. Readers will learn the project management practices necessary to deliver high-quality software solutions to the customer on time and on budget. The text also highlights how software process improvement can achieve specific business goals to provide a tangible return on investment. Topics and features: supplies review questions, summaries and key topics for each chapter, as well as a glossary of acronyms; describes the CMMI model thoroughly, detailing the five maturity levels; provides a broad overview of software engineering; reviews the activities and teams required to set up a CMMI improvement initiative; examines in detail the implementation of CMMI in a typical organization at each of the maturity levels; investigates the various tools that support organizations in improving their software engineering maturity; discusses the SCAMPI appraisal methodology.

In areas such as military, security, aerospace, and disaster management, the need for performance optimization and interoperability among heterogeneous systems is increasingly important. Model-driven engineering, a paradigm in which

the model becomes the actual software, offers a promising approach toward systems of systems (SoS) engineering. However, model-driven engineering has largely been unachieved in complex dynamical systems and netcentric SoS, partly because modeling and simulation (M&S) frameworks are stove-piped and not designed for SoS composability. Addressing this gap, Netcentric System of Systems Engineering with DEVS Unified Process presents a methodology for realizing the model-driven engineering vision and netcentric SoS using DEVS Unified Process (DUNIP). The authors draw on their experience with Discrete Event Systems Specification (DEVS) formalism, System Entity Structure (SES) theory, and applying model-driven engineering in the context of a netcentric SoS. They describe formal model-driven engineering methods for netcentric M&S using standards-based approaches to develop and test complex dynamic models with DUNIP. The book is organized into five sections: Section I introduces undergraduate students and novices to the world of DEVS. It covers systems and SoS M&S as well as DEVS formalism, software, modeling language, and DUNIP. It also assesses DUNIP with the requirements of the Department of Defense's (DoD) Open Unified Technical Framework (OpenUTF) for netcentric Test and Evaluation (T&E). Section II delves into M&S-based systems engineering for graduate students, advanced practitioners, and industry professionals. It provides methodologies to apply M&S principles to SoS design and reviews the development of executable architectures based on a framework such as the Department of Defense Architecture Framework (DoDAF). It also describes an approach for building netcentric knowledge-based contingency-driven systems. Section III guides graduate students, advanced DEVS users, and industry professionals who are interested in building DEVS virtual machines and netcentric SoS. It discusses modeling standardization, the deployment of models and simulators in a netcentric environment, event-driven architectures, and more. Section IV explores real-world case studies that realize many of the concepts defined in the previous chapters. Section V outlines the next steps and looks at how the modeling of netcentric complex adaptive systems can be attempted using DEVS concepts. It touches on the boundaries of DEVS formalism and the future work needed to utilize advanced concepts like weak and strong emergence, self-organization, scale-free systems, run-time modularity, and event interoperability. This groundbreaking work details how DUNIP offers a well-structured, platform-independent methodology for the modeling and simulation of netcentric system of systems.

Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software

requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

This book constitutes the refereed proceedings of the First International Conference on Software Process, held in Minneapolis, MN, USA, in May 2007. The 28 revised full papers presented together with the abstracts of two keynote addresses cover process content, process tools and metrics, process management, process representation, analysis and modeling, experience report, and simulation modeling.

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