

CMMI For Development: Guidelines For Process Integration And Product Improvement (SEI Series In Software Engineering (Hardcover))

Leaders of software-development projects face many challenges. First, you must produce a quality product on schedule and on budget. Second, you must foster and encourage a cohesive, motivated, and smoothly operating team. And third, you must maintain a clear and consistent focus on short- and long-term goals, while exemplifying quality standards and showing confidence and enthusiasm for your team and its efforts. Most importantly, as a leader, you need to feel and act responsible for your team and everything that it does. Accomplishing all these goals in a way that is rewarding for the leader and the team--while producing the results that management wants--is the motivation behind the Team Software Process (TSP). Developed by renowned quality expert Watts S. Humphrey, TSP is a set of new practices and team concepts that helps developers take the CMM and CMMI Capability Maturity Models to the next level. Not only does TSP help make software more secure, it results in an average production gain of 68 percent per project. Because of their quality, timeliness, and security, TSP-produced products can be ten to hundreds of times better than other hardware or software. In this essential guide to TSP, Humphrey uses his vast industry experience to show leaders precisely how to lead teams of software engineers trained in the Personal Software Process (PSP). He explores all aspects of effective leadership and teamwork, including building the right team for the job, the TSP launch process, following the process to produce a quality product, project reviews, and capitalizing on both the leader's and team's capabilities. Humphrey also illuminates the differences between an ineffective leader and a superb one with the objective of helping you understand, anticipate, and correct the most common leadership failings before they undermine the team. An extensive set of appendices provides additional detail on TSP team roles and shows you how to use an organization's communication and command networks to achieve team objectives. Whether you are a new or an experienced team leader, TSPSM: Leading a Development Team provides invaluable examples, guidelines, and suggestions on how to handle the many issues you and your team face together.

Many organizations that have improved process maturity through Capability Maturity Model Integration (CMMI®) now also want greater agility. Conversely, many organizations that are succeeding with Agile methods now want the benefits of more mature processes. The solution is to integrate CMMI and Agile. Integrating CMMI® and Agile Development offers broad guidance for melding these process improvement methodologies. It presents six detailed case studies, along with essential real-world lessons, big-picture insights, and mistakes to avoid. Drawing on decades of process improvement experience, author Paul McMahon explains how combining an Agile approach with the CMMI process improvement framework is the fastest, most effective way to achieve your business objectives. He offers practical, proven techniques for CMMI and Agile integration, including new ways to extend Agile into system engineering and project management and to optimize performance by focusing on your organization's unique, culture-related weaknesses.

Why does poor software quality continue to plague enterprises of all sizes in all industries? Part of the problem lies with the process, rather than individual developers. This practical guide provides ten best practices to help team leaders create an effective working environment through key adjustments to their process. As a follow-up to their popular book, Building Maintainable Software, consultants with the Software Improvement Group (SIG) offer critical lessons based on their assessment of development processes used by hundreds of software teams. Each practice includes examples of goalsetting to help you choose the right metrics for your team. Achieve development goals by determining meaningful metrics with the Goal-Question-Metric approach Translate those goals to a verifiable Definition of Done Manage code versions for consistent and predictable modification Control separate environments for each stage in the development pipeline Automate tests as much as possible and steer their guidelines and expectations Let the Continuous Integration server do much of the hard work for you Automate the process of pushing code through the pipeline Define development process standards to improve consistency and simplicity Manage dependencies on third party code to keep your software consistent and up to date Document only the most necessary and current knowledge This single volume comprises the full, official book version of the CMMI, themuch-anticipated follow-up to the Capability Maturity Model.

CMMI for Acquisition

CMMI for Development

Managing Information Security Risks

CMMI Distilled

Just Enough Process Improvement

CMMI for Outsourcing

CMMI-ACQ® (Capability Maturity Model® Integration for Acquisition) describes best practices for the successful acquisition of products and services. Providing a practical framework for improving acquisition processes, CMMI-ACQ addresses the growing trend in business and government for organizations to purchase or outsource required products and services as an alternative to in-house development or resource allocation. Modeled after CMMI®, Second Edition, which documented CMMI for Development, this book is the definitive reference for the current release of CMMI for Acquisition (version 1.2). In addition to the entire CMMI-ACQ model, the book includes tips, hints, cross-references, and other author notes to help you understand, apply, and find more information about the content of the acquisition process areas. The authors also have added two chapters to illustrate the application of CMMI-ACQ in industry (a case study from General Motors) and government. Whether you are new to CMMI models or are already familiar with one or more of them, you will find this book an essential resource for managing your acquisition processes and improving your overall performance. The book is divided into three parts. Part One introduces CMMI-ACQ in the broad context of CMMI models, including essential concepts and useful background. It then describes and shows the relationships among all the components of the CMMI-ACQ process areas, and explains paths to the adoption and use of the model for process improvement and benchmarking. Finally, two separate chapters describe special acquisition needs in a government environment and real experiences with CMMI-ACQ from industry. Part Two first describes generic goals and generic practices, and then, in twenty-two sections, details each of the CMMI-ACQ process areas, including specific goals, specific practices, and examples. These process areas are organized alphabetically by process area acronym to facilitate quick reference. Part Three provides several useful references, including sources for further information about CMMI and CMMI-ACQ, acronym definitions, a glossary of terms, and an index.

This book will help you to manage and control the quality of your organization's software products. Continually dealing with the problems caused by software defects can be both time-consuming and demanding but Sami Zahran's pragmatic approach will take you from reactive fire-fighting to a preventative culture of disciplined and continuous process improvement. This book will help you: establish a process-focused software development organization design and implement procedures for developing quality software in time and within budge benchmark your organization against the industry standards for the software process, including the Capability Maturity Model (CMM), ISO 9001, the new standard ISO/IEC 15504 (originally known as SPICE) and Bootstrap. Real Process Improvement Using the CMMI presents readers with non-academic, real-world approaches to process improvement via CMMI. The author provides concepts and techniques for CMMI-based process improvement which are as effective as they are innovative. Professionals at all levels from system engineers to CEOs will find a weal

Part of The SEI Series in Software Engineering, this book offers a concise andpractical guide to the standard CMMI appraisal method. This method is veryimportant, as it is used to determine an organization's capability and maturitylevels (which are often used as criteria in awarding government and defenseorientedbids). SCAMPI specifically stands for: The Standard CMMI AppraisalMethod for Process Improvement. These authors have considerable experiencein helping their organizations appraise their respective levels of maturity inrelation to the CMMI. In this handy new book, they impart their advice on notonly achieving an accurate assessment, but also what next steps need to betaken for further process improvement.

A Process Improvement Approach

Guidelines for Superior Service

Guidelines for Process Integration and Product Improvement

The Capability Maturity Model

CMM in Practice

CERT Resilience Management Model (CERT-RMM)

An easily-digestible and fully updated view of CMMI for practitioners as well as executives, managers and the simply curious.

Project initiation: Project planning: Project execution and termination.

Configuration management (CM) is frequently misunderstood. This discipline is growing in popularity because it allows project participants to better identify potential problems, manage change, and efficiently track the progress of a software project. This book gives the reader a complexity and comprehensiveness of the discipline.

Principal Contributors and Editors: Mark C. Pauk, Charles V. Weber, Bill Curtis, Mary Beth Chrissis "In every sense, the CMM represents the best thinking in the field today... this book is targeted at anyone involved in improving the software process, including members of assess members of software engineering process groups, software managers, and software practitioners..." From the Foreword by Watts Humphrey The Capability Maturity Model for Software (CMM) is a framework that demonstrates the key elements of an effective software process evolutionary improvement path for software development from an ad hoc, immature process to a mature, disciplined process, in a path laid out in five levels. When using the CMM, software professionals in government and industry can develop and improve their ability to identify management and technical practices for delivering quality software on schedule and at a reasonable cost. This book provides a description and technical overview of the CMM, along with guidelines for improving software process management overall. It is a sequel to Watts Hum Managing the Software Process, in that it structures the maturity framework presented in that book more formally. Features: Compares the CMM with ISO 9001 Provides an overview of ISO's SPICE project, which is developing international standards for software process improvement determination Presents a case study of IBM Houston's Space Shuttle project, which is frequently referred to as being at Level 5 0201546647B04062001

Managing the Software Process

CMMI, Six Sigma, and ISO 9001

Software Quality Assurance

The Requirements Engineering Handbook

CMMI for Services Version 1.3

Processes for Executing Software Projects at Infosys

CMMI® for Acquisition (CMMI-ACQ) describes best practices for the successful acquisition of products and services. Providing a practical framework for improving acquisition processes, CMMI-ACQ addresses the growing trend in business and government for organizations to purchase or outsource required products and services as an alternative to in-house development or resource allocation. Changes in CMMI-ACQ Version 1.3 include improvements to high maturity process areas, improvements to the model architecture to simplify use of multiple models, and added guidance about using preferred suppliers. CMMI® for Acquisition, Second Edition, is the definitive reference for CMMI-ACQ Version 1.3. In addition to the entire revised CMMI-ACQ model, the book includes updated tips, hints, cross-references, and other author notes to help you understand, apply, and quickly find information about the content of the acquisition process areas. The book now includes more than a dozen contributed essays to help guide the adoption and use of CMMI-ACQ in industry and government. Whether you are new to CMMI models or are already familiar with one or more of them, you will find this book an essential resource for managing your acquisition processes and improving your overall performance. The book is divided into three parts. Part One introduces CMMI-ACQ in the broad context of CMMI models, including essential concepts and useful background. It then describes and shows the relationships among all the components of the CMMI-ACQ process areas, and explains paths to the adoption and use of the model for process improvement and benchmarking. Several original essays share insights and real experiences with CMMI-ACQ in both industry and government environments. Part Two first describes generic goals and generic practices, and then details the twenty-two CMMI-ACQ process areas, including specific goals, specific practices, and examples. These process areas are organized alphabetically and are tabbed by process area acronym to facilitate quick reference. Part Three provides several useful resources, including sources of further information about CMMI and CMMI-ACQ, acronym definitions, a glossary of terms, and an index.

Accelerating Process Improvement Using Agile Techniques explains how agile programming is applied to standard process improvement. By applying agile techniques, IT organizations can speed up process improvement initiatives, minimize the resources these initiatives require, and maximize the benefits of process improvement. The book details step-by-step how to implement the Accelerating Process Improvement Methodology (APIM) and how to integrate APIM with various standard process improvement models and methodologies, including the ISO 9000 series, SPICE, TQM, SPIRE, PMBOK, and CMM/CMMI. Agile process improvement enables organizations to rapidly set strategic goals, meet a greater percentage of user requirements, and realize a quicker return on investment. About the Author Deb Jacobs is a Professional Consultant with Focal Point Associates specializing in process improvement and project management. She currently provides support to organizations in training, process improvement consulting, project management consulting, software engineering consulting, and proposal development. Ms. Jacobs has over 25 year's in project management, process improvement management, system/software engineering, and proposal development with a BS in Computer Science.

The Software Engineering Institute's Capability Maturity Model(Integration (CMMI) provides best practices that span a product's life cycle, from conception through delivery and maintenance. Employing real-life examples and practical advice, authors Garcia and Turner tap their extensive experience working with diverse organizations to help readers survey the CMMI territory.

Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirement's analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work. The book enables professionals to identify the real customer requirements for their projects and control changes and additions to these requirements. This unique resource helps practitioners understand the importance of requirements, leverage effective requirements practices, and better utilize resources. The book also explains how to strengthen interpersonal relationships and communications which are major contributors to project effectiveness. Moreover, analysts find clear examples and checklists to help them implement best practices.

Guidelines for Improving the Acquisition of Products and Services

Integrating CMMI and Agile Development

CMMI(Registered) for Development, Version 1.3

CMMI for Services

Implementing the Capability Maturity Model

CMMI Assessments

SEI's authoritative, official introduction to Version 1.3 of CMMI-SVC, the powerful process improvement framework for all service providers * *Shows how to use CMMI-SVC V. 1.3 to optimize any service-related process, avoid problems, and seize opportunities. *Covers the whole CMMI-SVC model, with practical notes and real-world case studies. *Now in two colors for greater clarity. *An official SEI publication: will be used in a growing number of CMMI-SVC courses. The CMMI framework has long provided powerful process improvement tools for organizations that build software and other products. But 80% of the global economy is now based on services, not products. To address these processes, SEI has extended its CMMI framework to reflect the unique challenges of process improvement in service industries. Three members of the CMMI-SVC development team walk through the newest version of CMMI's services model from start to finish, showing how each element can be applied in real-world services organizations. This official SEI publication is both a comprehensive reference and a hands-on tutorial. Fully updated for CMMI Version 1.3, this edition adds a second color for greater clarity and usefulness. Using it, organizations can establish, manage, and improve services that more successfully serve both customers and users. They will learn how to make better decisions, avoid problems, and seize new opportunities. First, the authors thoroughly explain CMMI-SVC Version 1.3, its concepts, and its use. Next, they present a complete reference of best practices, organized for fast access. Practical notes, tips, hints, and case studies clarify the model and show its application in diverse environments. The authors also present glossaries, acronyms, and other essential reference information available nowhere else

Practical guidelines for an effective implementation of software development processes Designed to ensure effective software development processes, the Capability Maturity Model (CMM)--North America's leading standard for software development--requires companies to complete five steps, or levels, in the development process. But while it is widely adopted by Fortune 500 companies, many others get stuck at the initial planning stage. Focusing on Levels 2 and 3 of the CMM, this book helps readers to get over the hurdle of the two most problematic areas in this process--the project management and software development steps. It offers clear, step-by-step guidance on how to establish basic project management processes to track costs, schedules, and functionality; how to document, standardize, and integrate software processes; and how to improve software quality.

A new edition of this title is available, ISBN-10: 0321461088 ISBN-13: 9780321461087

Written for people who manage information security risks for their organizations, this book details a security risk evaluation approach called "OCTAVE." The book provides a framework for systematically evaluating and managing security risks, illustrates the implementation of self-directed evaluations, and shows how to tailor evaluation methods to the needs of specific organizations. A running example illustrates key concepts and techniques. Evaluation worksheets and a catalog of best practices are included. The authors are on the technical staff of the Software Engineering Institute. Annotation copyrighted by Book News, Inc., Portland, OR

Real Process Improvement Using the CMMI

Software Process Improvement

Handbook of Software Quality Assurance

Ask the Right Questions

The OCTAVE Approach

CMMI-ACQ

SQA (software quality assurance) is a critical factor that all software engineers and developers need to master, and this thoroughly revised fourth edition of the popular book, Handbook of Software Quality Assurance, serves as a one-stop resource for companies and individuals alike. The book covers the importance of CMMI registered] and key ISO requirements, this unique book discusses a wide spectrum of real-world experiences and key issues presented in papers from leading experts in the field. The fourth edition is a significant update to past editions, providing best practices and explaining how SQA can be implemented in organizations large and small. Practitioners find an updated discussion on the American Society for Quality (ASQ) SQA certification program, covering the benefits of becoming an ASQ certified software engineer. The book also helps readers better understand the requirements of the ASQ's CSQE examination.

This definitive introduction to CMMI-ACQ and its use in all phases of technology acquisition explains how CMMI-ACQ combines the SEI's unparalleled knowledge of software process improvement with new techniques developed for GM's \$16 billion technology program. Drawing on the unique insights of four SEI and GM experts who helped create CMMI-ACQ and implemented it for the first time.

What company doesn't want energized workers, delighted customers, genuine efficiency, and breakthrough innovation? The Lean Mindset shows how lean companies really work--and how a lean mindset is the key to creating stunning products and delivering exceptional customer service. Drawing on research and case studies from leading organizations, including Spotify, Ericsson, Intuit, GE Healthcare, Pixar, CareerBuilder, and Intel, you'll discover proven patterns for developing that mindset. You'll see how to cultivate product teams that act like successful startups, that attracts customers, and leverage the talents of bright, creative people. The Poppendiecks weave lean principles throughout this book, just as those principles must be woven throughout the fabric of your truly lean organization. Learn How To Start with short-term thinking Energize teams by providing well-framed challenges, larger purposes, and a direct line of sight between their work and the achievement of those purposes Delight customers by gaining unprecedented insight into their real needs, and build a culture that those needs Achieve authentic, sustainable efficiency without layoffs, rock-bottom cost focus, or totalitarian work systems Develop breakthrough innovations by moving beyond predictability to experimentation, beyond globalization to decentralization, beyond bureaucracy to transparency software development have moved from novelty to widespread use, in large part due to the principles taught by Mary and Tom Poppendieck in their pioneering books. Now, in The Lean Mindset, the Poppendiecks take the next step, looking at a company you can learn from. They ask the right questions, solve the right problems, and deliver solutions that customers love.

Written by experienced process improvement professionals who have developed and implemented systems in organizations around the world, Interpreting the CMMI: A Process Improvement Approach provides you with specific techniques for performing process improvement. The authors describe a family of CMM models. Kulpa and Johnson describe the fundamenta

Motivating Positive Change

A Maturity Model for Managing Operational Resilience

Ten Best Practices for Effective Software Development

Implementation Guide

TSP(SM) Leading a Development Team

CMMI Survival Guide

CERT® Resilience Management Model (CERT-RMM) is an innovative and transformative way to manage operational resilience in complex, risk-evolving environments. CERT-RMM distills years of research into best practices for managing the security and survivability of people, information, technology, and facilities. It integrates these best practices into a unified, capability-focused maturity model that encompasses security, business continuity, and IT operations. By using CERT-RMM, organizations can escape silo-driven approaches to managing operational risk and align to achieve strategic resilience management goals. This book both introduces CERT-RMM and presents the model in its entirety. It begins with essential background for all professionals, whether they have previously used process improvement models or not. Next, it explains CERT-RMM's Generic Goals and Practices and discusses various approaches for using the model. Short essays by a number of contributors illustrate how CERT-RMM can be applied for different purposes or can be used to improve an existing program. Finally, the book provides a complete baseline understanding of all 26 process areas included in CERT-RMM. Part One summarizes the value of a process improvement approach to managing resilience, explains CERT-RMM's conventions and core principles, describes the model architecturally, and shows how its supports relationships tightly linked to your objectives. Part Two focuses on using CERT-RMM to establish a foundation for sustaining operational resilience management processes in complex environments where risks rapidly emerge and change. Part Three details all 26 CERT-RMM process areas, from asset definition through vulnerability resolution. For each, complete descriptions of goals and practices are presented, with realistic examples. Part Four contains appendices, including Targeted Improvement Roadmaps, a glossary, and other reference materials. This book will be valuable to anyone seeking to improve the mission assurance of high-value services, including leaders of large enterprise or organizational units, security or business continuity specialists, managers of large IT operations, and those using methodologies such as ISO 27000, COBIT, ITIL, or CMMI.

CMMI® for Services (CMMI-SVC) is a comprehensive set of guidelines to help organizations establish and improve processes for delivering services. By adapting and extending proven standards and best practices to reflect the unique challenges faced in service industries, CMMI-SVC offers providers a practical and focused framework for achieving higher levels of service quality, controlling costs, improving schedules, and ensuring user satisfaction. A member of the newest CMMI model, CMMI-SVC Version 1.3, reflects changes to the model made for all constellations, including clarifications of high-maturity practices, alignment of the sixteen core process areas, and improvements in the SCAMPI appraisal method. The indispensable CMMI® for Services, Second Edition, is both an introduction to the CMMI-SVC model and an authoritative reference for it. The contents include the complete model itself, formatted for quick reference. In addition, the book's authors have refined the model's introductory chapters; provided marginal notes to clarify the nature of particular process areas and to show why their practices are valuable; and inserted longer sidebars to explain important concepts. Brief essays by people with experience in different application areas further illustrate how the model works in practice and what benefits it offers. The book is divided into three parts. Part One begins by thoroughly explaining CMMI-SVC, its concepts, and its use. The authors provide robust information about service concepts, including a discussion of lifecycles in service environments; outline how to start using CMMI-SVC; explore how to achieve process improvements that last; and offer insights into the relationships among process areas. Part Two describes generic goals and practices, and then details the complete set of twenty-four CMMI-SVC process areas, including specific goals, specific practices, and examples. The process areas are organized alphabetically by acronym and are tabbed for easy reference. Part Three contains several useful resources, including CMMI-SVC-related references, acronym definitions, a glossary of terms, and an index. Whether you are new to CMMI models or are already familiar with one or more of them, this book is an essential resource for service providers interested in learning about or implementing process improvement.

The author, drawing on years of experience at IBM and the SEI, provides here practical guidance for improving the software development and maintenance process. He focuses on understanding and managing the software process because this is where he feels organizations now encounter the most serious problems, and where he feels there is the best opportunity for significant improvement. Both program managers and practicing programmers, whether working on small programs or large-scale projects, will learn how good their own software process is, how they can make their process better, and where they need to begin. "This book will help you move beyond the turning point, or crisis, of feeling over-whelmed by the task of managing the software process to understanding what is essential in software management and what you can do about it." Peter Freeman, from the Foreword 0201180952B04062001

Apply best practices and proven methods to ensure a successful CMMi implementation. This practical book shows you which implementation hurdles to avoid and which CMMi best practices to apply in your work areas. You'll experience how easy the CMMi practice description is and how quickly and efficiently it can be implemented into your work processes. CMMi is a popular software process improvement model developed by the US department of Defence Software Engineering Institute (Carnegie Mellon University). This model is extensively used by software professionals and organizations worldwide. CMMI for Development: Implementation Guide is a step by step guide to change the way people interpret and implement CMMi in their organizations. What You'll Learn Use itDetect to rectify common mistakes Define your processes using CMMi Collect improvement data Prepare your work area for CMMi appraisal Who This Book Is For Program Managers, Project Managers, Development Leads, Test Leads, Quality professionals, and Training professionals.

A Practical Introduction to Integrated Process Improvement

Interpreting the CMMI (R)

Guidelines for Improving the Software Process

Verification, Validation, and Testing of Engineered Systems

Case Studies and Proven Techniques for Faster Performance Improvement

CMMI

Systems' Verification Validation and Testing (VVT) are carried out throughout systems' lifetimes. Notably, quality-cost expended on performing VVT activities and correcting system defects consumes about half of the overall engineering cost. Verification, Validation and Testing of Engineered Systems provides a comprehensive compendium of VVT activities and corresponding VVT methods for implementation throughout the entire lifecycle of an engineered system. In addition, the book strives to alleviate the fundamental testing conundrum, namely: What should be tested? How should one test? When should one test? And, when should one stop testing? In other words, how should one select a VVT strategy and how it be optimized? The book is organized in three parts: The first part provides introductory material about systems and VVT concepts. This part presents a comprehensive explanation of the role of VVT in the process of engineered systems (Chapter-1). The second part describes 40 systems' development VVT activities (Chapter-2) and 27 systems' post-development activities (Chapter-3). Corresponding to these activities, this part also describes 17 non-testing systems' VVT methods (Chapter-4) and 33 testing systems' methods (Chapter-5). The third part of the book describes ways to model systems' quality cost, time and risk (Chapter-6), as well as ways to acquire quality data and optimize the VVT strategy in the face of funding, time and other resource limitations as well as different business objectives (Chapter-7). Finally, this part describes the methodology used to validate the quality model along with a case study describing a system's quality improvements (Chapter-8). Fundamentally, this book is written with two categories of audience in mind. The first category is composed of VVT practitioners, including Systems, Test, Production and Maintenance engineers as well as first and second line managers. The second category is composed of students and faculties of Systems, Electrical, Aerospace, Mechanical and Industrial Engineering schools. This book may be fully covered in two to three graduate level semesters; although parts of the book may be covered in one semester. University instructors will most likely use the book to provide engineering students with knowledge about VVT, as well as to give students an introduction to formal modeling and optimization of VVT strategy.

The most comprehensive General, Organic, and Biochemistry book available, Introduction to General, Organic, and Biochemistry, 11th Edition continues its tradition of a solid development of problem-solving skills, numerous examples and practice problems, along with coverage of current applications. Written by an experienced author team, they skillfully anticipate areas of difficulty and pace the book accordingly. Readers will find the right mix of general chemistry compared to the discussions on organic and biochemistry. Introduction to General, Organic, and Biochemistry, 11th Edition has clear & logical explanations of chemical concepts and great depth of coverage as well as a clear, consistent writing style which provides great readability. An emphasis on Real-World aspects of chemistry makes the reader comfortable in seeing how the chemistry will apply to their career.

Assessments remain at the cutting edge of process improvement, but very few practitioners what they are designed to do and how they work.

Software Quality Assurance in Large Scale and Complex Software-intensive Systems presents novel and high-quality research related approaches that relate the quality of software architecture to system requirements, system architecture and enterprise-architecture, or software testing. Modern software has become complex and adaptable due to the emergence of globalization and new software technologies, devices and networks. These changes challenge both traditional software quality assurance techniques and software engineers to ensure software quality when building today (and tomorrow's) adaptive, context-sensitive, and highly diverse applications. This edited volume presents state of the art techniques, methodologies, tools, best practices and guidelines for software quality assurance and offers guidance for future software engineering research and practice. Each contributed chapter considers the practical application of the topic through case studies, experiments, empirical validation, or systematic comparisons with other approaches already in practice. Topics of interest include, but are not limited, to: quality attributes of system/software architectures; aligning enterprise, system, and software architecture from the point of view of total quality; design decisions and their influence on the quality of system/software architecture; methods and processes for evaluating architecture quality; quality assessment of legacy systems and third party applications; lessons learned and empirical validation of theories and frameworks on architectural quality; empirical validation and testing for assessing architecture quality. Focused on quality assurance at all levels of software design and development Covers domain-specific software quality assurance issues e.g. for cloud, mobile, security, context-sensitive, mash-up and autonomic systems Explains likely trade-offs from design decisions in the context of complex software system engineering and quality assurance Includes practical case studies of software quality assurance for complex, adaptive and context-critical systems

CMMI Implementation Guide

CMMI Scampi Distilled

Guidelines for Software, Systems, and IT Acquisition

Configuration Management Principles and Practice

In Large Scale and Complex Software-intensive Systems

Process Improvement and CMMI for Systems and Software

CMMI(Registered) (Capability Maturity Model(Registered) Integration) models are collections of best practices that help organizations to improve their processes. These models are developed by product teams with members from industry, government, and the Carnegie Mellon(Registered)

Software Engineering Institute (SEI). This model, called CMMI for Development (CMMI-DEV), provides a comprehensive integrated set of guidelines for developing products and services.

Updated revision of the best selling book on CMMI – now covering version 1.2.

Process Improvement and CMMI for Systems and Software provides a workable approach for achieving cost-effective process improvements for systems and software. Focusing on planning, implementation, and management in system and software processes, it supplies a brief overview of basic strategic planning models and covers fundamental concepts and appr

CMMI® for Development (CMMI-DEV) describes best practices for the development and maintenance of products and services across their lifecycle. By integrating essential bodies of knowledge, CMMI-DEV provides a single, comprehensive framework for organizations to assess their development and maintenance processes and improve performance. Already widely adopted throughout the world for disciplined, high-quality engineering, CMMI-DEV Version 1.3 now accommodates other modern approaches as well, including the use of Agile methods, Lean Six Sigma, and architecture-centric development. CMMI® for Development, Third Edition, is the definitive reference for CMMI-DEV Version 1.3. The authors have revised their tips, hints, and cross-references, which appear in the margins of the book, to help you better understand, apply, and find information about the content of each process area. The book includes new and updated perspectives on CMMI-DEV in which people influential in the model ' s creation, development, and transition share brief but valuable insights. It also features four new case studies and five contributed essays with practical advice for adopting and using CMMI-DEV. This book is an essential resource—whether you are new to CMMI-DEV or are familiar with an earlier version—if you need to know about, evaluate, or put the latest version of the model into practice. The book is divided into three parts. Part One offers the broad view of CMMI-DEV, beginning with basic concepts of process improvement. It introduces the process areas, their components, and their relationships to each other. It describes effective paths to the adoption and use of CMMI-DEV for process improvement and benchmarking, all illuminated with fresh case studies and helpful essays. Part Two, the bulk of the book, details the generic goals and practices and the twenty-two process areas now comprising CMMI-DEV. The process areas are organized alphabetically by acronym for easy reference. Each process area includes goals, best practices, and examples. Part Three contains several useful resources, including CMMI-DEV-related references, acronym definitions, a glossary of terms, and an index.

Process Improvement Essentials

The Lean Mindset

Building Software Teams

CMMI for Acquisition Version 1.3

Accelerating Process Improvement Using Agile Techniques

Appraisals for Process Improvement

Today, technology has become too much a part of overall corporate success for its effectiveness to be left to chance. The stakes are too high. Fortunately, the idea of 'quality management' is being reinvigorated. In the last decade process programs have become more and more prevalent. And, out of all the available options, three have moved to the top of the chain. These three are: The 9001:2000 Quality Management Standard from the International Standards Organization; The Capability Maturity Model Integration from the Software Engineering Institute; and Six Sigma, a methodology for improvement shaped by companies such as Motorola, Honeywell, and General Electric. These recognized and proven quality programs are rising in popularity as more technology managers are looking for ways to help remove degrees of risk and uncertainty from their business equations, and to introduce methods of predictability that better ensure success. Process Improvement Essentials combines the foundation needed to understand process improvement theory with the best practices to help individuals implement process improvement initiatives in their organization. The three leading programs: ISO 9001:2000, CMMI, and Six Sigma--amidst the buzz and hype--tend to get lumped together under a common label. This book delivers a combined guide to all three programs, compares their applicability, and then sets the foundation for further exploration. It's a one-stop-shop designed to give you a working orientation to what the field is all about.

Practical Guidelines for Business Success