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Metrics and Models in Software Quality Engineering
Digital Libraries for Open Knowledge
Business Process Maturity
ROI of Software Process Improvement
Information Modelling and Knowledge Bases XXXI
Service Management For Dummies
Defining Software Processes Compliant with the Capability Maturity Model, ISO 9000-3 and IEEE STD-1074-1991
Process Improvement with CMMI v1.2 and ISO Standards
Systems, Software and Services Process Improvement
On the Move to Meaningful Internet Systems: OTM 2009 Workshops

Metrics and Models in Software Quality Engineering

The O-ISIM3 standard focuses on the common processes of information security. It is technology-neutral, very practical and considers the business aspect in depth. This means that practitioners can use the O-ISIM3 with a wide variety of protection techniques used in the marketplace. In addition it supports common frameworks such as ISO 9000, ISO 27000, COBIT and ITIL. Covers: risk management, security controls, security management and how to translate business drivers into security objectives and targets.

Digital Libraries for Open Knowledge

CMII is a well-known and standardized model for assessing improving software and systems development processes. It can be used to guide process improvement across a project, a division, or an entire organization. CMII was developed at the Carnegie Mellon Software Engineering Institute (SEI). The current version, 1.2, was published in 2006 and is being adopted worldwide. This book provides hands-on experience and will help the reader to gain an understanding of CMII. It is an introduction to the model and its fundamental ideas. Through numerous examples, it helps the reader to use CMII and to understand the interrelationship among model components (practices, goals, and process areas). The book covers the following topics: Model-based process improvement Overview of CMII components History of CMII and comparison to CMM Process areas, specific goals, and common practices. These process areas are organized alphabetically and are tabbed by process area acronym to facilitate quick reference. Part Three adds guidance about using preferred suppliers. 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 concepts of the model, emphasizing the acquisition process areas, and explaining. Several original essays highlight real-world 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, acronyms definitions, a glossary of terms, and an index.

Information Modelling and Knowledge Bases XXXI

The O-ISIM3 standard focuses on the common processes of information security. It is technology-neutral, very practical and considers the business aspect in depth. This means that practitioners can use the O-ISIM3 with a wide variety of protection techniques used in the marketplace. In addition it supports common frameworks such as ISO 9000, ISO 27000, COBIT and ITIL. Covers: risk management, security controls, security management and how to translate business drivers into security objectives and targets.

Service Management For Dummies

This book constitutes the proceedings of the 21st International Conference on Business Information Systems, BIS 2018, held in Berlin, Germany, in July 2018. The BIS conference follows popular research trends, both in the academic and the business domain. Thus the theme of BIS 2018 was "Digital Transformation - An Imperative in Today's Business Markets". The 30 papers presented in this volume were carefully reviewed and selected from 96 submissions. They were organized in topical sections named: big and smart data and artificial intelligence; business and enterprise modeling; ICT project management; process management; smart infrastructures; social media and Web-based business information systems; applications, evaluations, and experiences.

Defining Software Processes Compliant with the Capability Maturity Model, ISO 9000-3 and IEEE STD-1074-1991

An indispensable addition to any project manager, software engineering or computer science bookshelf, this book presents the only broad-ranging economic analysis of major international SPI methods and the first large-scale economic analysis of mandatory U.S. government standards.

Process Improvement with CMMI v1.2 and ISO Standards

This book explores the domain of software maintenance management and provides road maps for improving software maintenance organizations. It describes full maintenance maturity models organized by levels 1, 2, and 3, which allow for benchmarking and continuous improvement paths. Goals for each key practice area are also provided, and the model presented is fully aligned with the architecture and framework of software development maturity models of CMMI and ISO 15504. It is complete with case studies, figures, tables, and graphs.

Systems, Software and Services Process Improvement

In recent years, building information modeling has become a very active research area of construction informatics with investigation of ICT use within construction industry processes and organizations. The Handbook of Research on Building Modelling and Construction Informatics: Concepts and Technologies addresses the problems related to information integration and interoperability throughout the lifecycle of a building, from feasibility and conceptual design through to demolition and recycling stages. Containing research from leading international experts, this Handbook of Research provides comprehensive coverage and definitions of the most important issues, concepts, trends, and technologies within the field.

On the Move to Meaningful Internet Systems: OTM 2009 Workshops

Information modelling and knowledge bases have become an important area of academic and industry research in the 21st century, addressing complexities of modelling that reach beyond the traditional engineering systems and academia. This book presents 32 reviewed, selected and updated papers delivered at the 29th International Conference on Information Modelling and Knowledge Bases (IJIC2019), held in Lausanne, Switzerland, from 3 to 7 June 2019. In addition, two papers based on the keynote presentations and one paper edited from the discussion of the panel session are included in the book. The conference provided a forum to exchange scientific results and experience, and attracted academics and practitioners working with information and knowledge. The book covers a wide range of topics, ranging from knowledge discovery through conceptual and linguistic modeling, knowledge and information modeling and discovery, cross-cultural communication and social computing, environmental modeling and engineering, and multimedia data modeling and systems to complex scientific problem-solving. The conference presentation sessions: Learning and Linguistics; Systems and Processes; Data and Knowledge Representation; Models and Interface; Formalizations and Reasoning; Models and Modeling; Machine Learning; Models and Program Evaluation; Environment and Predictions; and Emotion Modeling and Social Networks reflect the main themes of the conference. The book also includes 2 extended publications of keynote addresses: 'Philosophical Foundations of Conceptual Modeling' and 'Sustainable Solid Waste Management using Life Cycle Modelling for Environmental Impact Assessment', as well as additional material covering the discussion and findings of the panel session. Providing an overview of current research in the field, the book will be of interest to all those working with information systems, information modeling and knowledge bases.
ISO 9001 is known around the world as the gold standard for quality management and process improvement, but lately quality assurance professionals are discovering the power of CMMISM 2 the latest process improvement model from the Software Engineering Institute. This book explores how your organization can use these two frameworks in tandem to improve process quality by quantum leaps.

A Comparison of ISO 9001 and the Capability Maturity Model for Software

Previously, professionals had to make judgment calls based on subjective criteria, including their own acumen, in their decision making. In order to combat this subjectivity, maturity models can be implemented to allow organizations a means of assessing everyday processes and to offer a path towards advancement using transparent objective criteria. Diverse Applications and Transformability of Maturity Models is a pivotal reference source that provides vital research on the application of maturity models for improving development in a variety of work environments. While highlighting topics such as open government, archives and records management, enterprise content management, and digital economy, this publication explores methods to help organizations effectively implement plans in all open management systems. This book is ideally designed for professionals and researchers seeking current research on a variety of social science and applied science fields including business studies, computer science, digital preservation, information governance, information science, information systems, public administration, records management, and project management.

Open Information Security Management Maturity Model O-ISM3

This volume constitutes the refereed proceedings of the 23rd EuroSPI conference, held in Graz, Austria, in September 2016. The 15 revised full papers presented together with 14 selected key notes and workshop papers were carefully reviewed and selected from 51 submissions. They are organized in topical sections on SPI and ISO/IEC 29110 standard; communication and team issues in SPI; SPI and assessment; SPI in secure and safety critical environments; SPI initiatives; GamifySPI; functional safety; supporting innovation and improvement.

Software Process Improvement and Capability Determination

This volume constitutes the refereed proceedings of the 18th EuroSPI conference, held in Roskilde, Denmark, in June 2011. The 18 revised full papers presented together with 9 key notes were carefully reviewed and selected. They are organized in topical sections on SPI and assessments; SPI and implementation methods; SPI and improvement methods; SPI organization; SPI people/teams; SPI and reuse; selected key notes for SPI implementation.

Business Information Systems

In this age of globalization, process improvement practitioners must be able to comprehend and work with the different standards and frameworks used around the world. While many systems and software engineering organizations rely on a single standard as the primary driver of process improvement efforts (CMM-based process improvement in the U.S.)

Process based unification for multi-model software process improvement

Written by one of the foremost records and information management leaders in the world, this book provides a clear explanation and analysis of the fundamental principles associated with information risk, which is broadly defined as a combination of threats, vulnerabilities, and consequences related to use of an organization's information assets.—Patricia C. Franks, Program Coordinator for the Master of Archives and Records Management, School of Information, San José State University, and author of Records and Information Management Project Management Capability Assessment

Use Capability Maturity Model to Assess the Effectiveness of ISO 9001:2000 Implementation

Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SAO, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA. The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF®) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

IOM-CMM: Information Quality Management Capability Maturity Model

This volume constitutes the refereed proceedings of the 22nd EuroSPI conference, held in Ankara, Turkey, in September/October 2015. The 18 revised papers presented together with 9 selected key notes were carefully reviewed and selected from 49 submissions. They are organized in topical sections on SPI and assessments; SPI approaches in safety-critical domains; SPI in social and organizational issues; software process improvement best practices; models and optimization approaches in SPI; SPI and process assessment; creating environments supporting innovation and improvement; social aspects of SPI: conflicts, games, gamification and other social approaches; risk management and functional safety management.

Handbook of Research on Building Information Modeling and Construction Informatics: Concepts and Technologies

This book constitutes the proceedings of the 22nd International Conference on Theory and Practice of Digital Libraries, TPDL 2018, held in Porto, Portugal, in September 2018. The 51 full papers, 17 short papers, and 13 poster and tutorial papers presented in this volume were carefully reviewed and selected from 81 submissions. The general theme of TPDL 2018 was Digital Libraries for Open Knowledge. The papers present a wide range of the following topics: Metadata, Entity Disambiguation, Data Management, Scholarly Communication, Digital Humanities, User Interaction, Resources, Information Extraction, Information Retrieval, Recommendation.

The Capability Maturity Model

"This is the single best book on software quality engineering and metrics that I've encountered."—Capers Jones, from the Foreword“Metrics and Models in Software Quality Engineering, Second Edition,” is the definitive book on this critical topic of software development. Comprehensive in scope with extensive industry examples, it shows how to measure software quality and use measurements to improve the software development process. Four major categories of quality metrics and models are addressed: quality management, software reliability and prediction, complexity, and customer view. In addition, the book discusses the fundamentals of measurement theory, specific quality metrics and tools, and methods for applying metrics to the software development process. New chapters bring coverage of critical topics, including: In-process metrics for software testing/Metrics for object-oriented software development/Availability metrics/Methods for conducting in-process quality assessments and software project assessments/DoS and DeniTs of Software Process Improvement, by Patrick O’TooleUsing Function Point Metrics to Measure Software Process Improvement, by Capers Jones In addition to the excellent balance of theory, techniques, and examples, this book is highly instructive and practical, covering one of the most important topics in software development—quality management. 2001723716b0082b2002

Process Improvement Essentials

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 important topics in software development—quality management. 2001723716b0082b2002

Process Improvement with CMMI v1.2 and ISO Standards

Principal Contributors and Editors: Mark C. Paulik, 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 everyone involved in improving the software process, including members of assessment or evaluation teams, 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. The CMM describes an 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, adopt, and use sound 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 Humphrey’s important work, Managing the Software Process, in that it structures the maturity framework presented in that book more fully. Features:
Systems, Software and Services Process Improvement

This book constitutes the refereed proceedings of the 16th International Conference on Software Process Improvement and Capability Determination, SPICE 2016, held in Dublin, Ireland, in June 2016. The 28 full papers presented together with 5 short papers were carefully reviewed and selected from 52 submissions. The papers are organized in the following topical sections: SPI in regulated and safety critical domains; gamification and education issues in SPI; SPI in agile and small settings; SPI and assessment; SPI and project management concerns; empirical research case studies of SPI; knowledge and human communications issues in SPI.

International Standard ISO

Organizations face many challenges, which induce them to perform better, and thus to establish mature (or excellent) business processes. As they now face globalization, higher competitiveness, demanding customers, growing IT possibilities, compliance rules etc., business process maturity models (BFMMs) have been introduced to help organisations gradually assess and improve their business processes (e.g., CMMI or DSM-BPMM). In fact, there are now so many BFMMs to choose from that organisations risk selecting one that does not fit their needs or one of substandard quality. This book presents a study that distinguishes process management from process orientation so as to arrive at a common understanding. It also includes a classification study to identify the capability areas and maturity types of 69 existing BPMMs, in order to strengthen the basis of available BPMMs. Lastly it presents a selection study to identify criteria for choosing one BPMM from the broad selection, which produces a free online selection tool, BPMM Smart-Selector.

NOA Source Book

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 reduce 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—stand to get humped 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.

Risk Maturity Models

The Definitive Book On CMMI. There has never been a CMMI Guide like this. It contains 126 answers, much more than you can imagine; comprehensive answers and extensive details and references, with insights that have never before been printed. Get the information you need—fast! This all-embracing guide offers a thorough view of key knowledge and detailed insight. This Guide introduces what you want to know about CMMI. A quick look inside of some of the subjects covered: ISO 9210 - Deployment Packages, Capability Maturity Model - CMMI, CMMI - CMMI Maturity Models, ISO 9210 - Deployment Packages, Quality assurance - QA in software development, CMMI - CMMI Security Guides, People Capability Maturity Model - Description, Process (engineering) - CPREI through examples, Independent test organization - Software, Software development process - Process Improvement models, CMMI - Maturity levels in CMMI for services, Team Software Process - Latest Developments for TSP, RPG Group - Zenser Technologies, Baseline (configuration management), Software quality assurance, Extreme programming - Severability and responses, Software Development Institute - Security, A Guide to the Project Management Body of Knowledge - Contents, CMMI - Maturity levels in CMMI for acquisition, Capability Maturity Model Integration, Bismuth(III) oxide - Conductivity, Bill Curtis - Maturity models and process improvement, ISO/IEC 15504 - Acceptance of ISO/IEC 15504, Capability Maturity Model Integration CMMI models, Capability Maturity Model Integration Maturity levels in CMMI for services, Process area (CMMI) - Maturity Levels: CMMI for Development, CMMI Version 1.3 - Benefits, Capability Maturity Model Integration Overview, Software development life cycle - Process improvement models, CMMI Version 1.3 - Expanded Coverage, and much more

SOA Source Book

In this age of globalization, process improvement practitioners must be able to comprehend and work with the different standards and frameworks used around the world. While many systems and software engineering organizations rely on a single standard as the primary driver of process improvement efforts (CMMI-based process improvement in the U.S. an

CMMI for Acquisition

Learn how to perform project management according to international standards of compliance using capability assessment processes. This book compares and contrasts the approach to project management using ISO 21500 against the more direct ISO 33000 Capability Assessment. It shows how to assess projects adequately for process improvement or how well an organization performs against a standard, measurable framework. Using ISO 21500 as the project management reference point and ISO 33000 as the capability assessment reference, the book shows how to assess whether your projects are being run according to a specific capability level or support them to reach higher levels of capability.


This book constitutes the refereed proceedings of the 15th International Conference on Software Process Improvement and Capability Determination, SPICE 2016, held in Gothenburg, Sweden, in June 2015. The 17 revised full papers presented together with three short papers were carefully reviewed and selected from 48 submissions. The papers are organized in topical sections on industrial frameworks; implementation and assessment; process improvement; agile processes; assessment and maturity models; process and education.

Software Maintenance Management

Describes what service management is and provides information on ways to create and maintain a service management plan, how to optimize a data center, and ways to improve quality and costs, along with case studies for a variety of business sectors.

Diverse Applications and Transferability of Maturity Models

Software Quality Assurance

This book offers a practical solution for every organization that needs to monitor the effectiveness of their risk management. Written by a practising Chief Risk Officer, Risk Maturity Models enables you to build confidence in your organization’s risk management process through a tailored risk maturity model that lends itself to benchmarking. This is a management tool that is easy to design, practical and powerful, which can baseline and self-improve the maturity capabilities needed to deliver ERM benefits over time. This book guides the reader through comparing and tailoring a wealth of existing models, methods and reference standards and codes (such as ISO 33000 and COSO ERM). Covering 60 risk-related maturity models in clear comparison format, it helps risk professionals to select the approach best suited to their circumstances, and even design their own model. Risk Maturity Models provides focused messages for the risk management function, the internal audit function, and the Board. Combining proven practice and insight with realistic practitioner scenarios, this is essential reading for every risk, project, audit and board professional who wants to move their organization up the risk maturity curve.

Software Process Improvement and Capability Determination

Sala Baikurada presents a capability maturity model for information quality management process assessment and improvement. The author employed six exploratory case studies and a four round Delphi study to gain a better understanding of the research problem and to build the preliminary model, which he then applied in seven international case studies for further enhancement and external validation.

Managing Information Risks

This book focuses on the development and implementation of cloud-oriented, complex software that allows parallelism, fast processing, and real-time connectivity. Software engineering (SE) is the design, development, testing, and implementation of software applications, and this discipline is as well developed as the practice is well established whereas the Cloud Software Engineering (CSE) is the design, development, testing, and continuous delivery of service-oriented software systems and applications (Software as a Service Paradigm). However, with the emergence of the highly attractive cloud computing (CC) paradigm, the tools and techniques for SE are changing. CC provides the latest software development environments and the necessary platforms relatively easily and inexpensively. It also allows the provision of software applications equally easily and on a pay-as-you-go basis. Business requirements for the use of software are also changing and there is a
need for applications in big data analytics, parallel computing, AI, natural language processing, and biometrics, etc. These require huge amounts of computing power and sophisticated data management mechanisms, as well as device connectivity for Internet of Things (IoT) environments. In terms of hardware, software, communication, and storage, CC is highly attractive for developing complex software that is rapidly becoming essential for all sectors of life, including commerce, health, education, and transportation. The book fills a gap in the SE literature by providing scientific contributions from researchers and practitioners, focusing on frameworks, methodologies, applications, benefits and inherent challenges/barriers to engineering software using the CC paradigm.

A Comparison Analysis on Software Engineering Process ISO 9000-3 and the Capability Maturity Model

Internet-based information systems, the second covering the large-scale integration of heterogeneous computing systems and data resources with the aim of providing a global computing space. Each of these four conferences encourages researchers to treat their respective topics within a framework that incorporates jointly (a) theory, (b) conceptual design and development, and (c) applications, in particular case studies and industrial solutions. Following and expanding the model created in 2003, we again solicited and selected quality workshop proposals to complement the more "archival" nature of the main conferences with research results in a number of selected and more "avant-garde" areas related to the general topic of Web-based distributed computing. For instance, the so-called Semantic Web has given rise to several novel research areas combining linguistics, information systems technology, and artificial intelligence, such as the modeling of legal systems and the ubiquitous nature of their usage. We were glad to see that ten of our earlier successful workshops (ADI, CASIS, E22N, SHWS, ORM, OntoContent, MONET, SEMELS, COMBEK, ISWSSA) reappeared in 2008 with a second, third or even fifth edition, sometimes by alliance with other newly emerging workshops, and that no fewer than three brand-new independent workshops could be selected from proposals and hosted: ISDE, ODIS and Beyond SAWSDL. Workshop-dicences productively mingled with each other and with those of the main conferences, and there was considerable overlap in authors.

CMMI

Abstract: "The Capability Maturity Model for Software (CMM), developed by the Software Engineering Institute, and the ISO 9000 series of standards, developed by the International Standards Organization, share a common concern with quality and process management. The two are driven by similar concerns and intuitively correlated. The purpose of this report is to contrast the CMM and ISO 9001, showing both their differences and their similarities. The results of the analysis indicate that, although an ISO 9001-compliant organization would not necessarily satisfy all of the level 2 process areas, it would satisfy most of the level 2 goals and many of the level 3 goals. Because there are practices in the CMM that are not addressed in ISO 9000, it is possible for a level 1 organization to achieve ISO 9001 registration; similarly, there are areas addressed by ISO 9001 that are not addressed in the CMM. A level 3 organization would have little difficulty in obtaining ISO 9001 certification, and a level 2 organization would have significant advantages in obtaining certification."

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