Cleanroom Software Engineering: Technology and Process (SEI Series in Software Engineering)

Von Stacy J. Prowell, Carmen J. Trammell, Richard C. Linger, Jesse H. Poore
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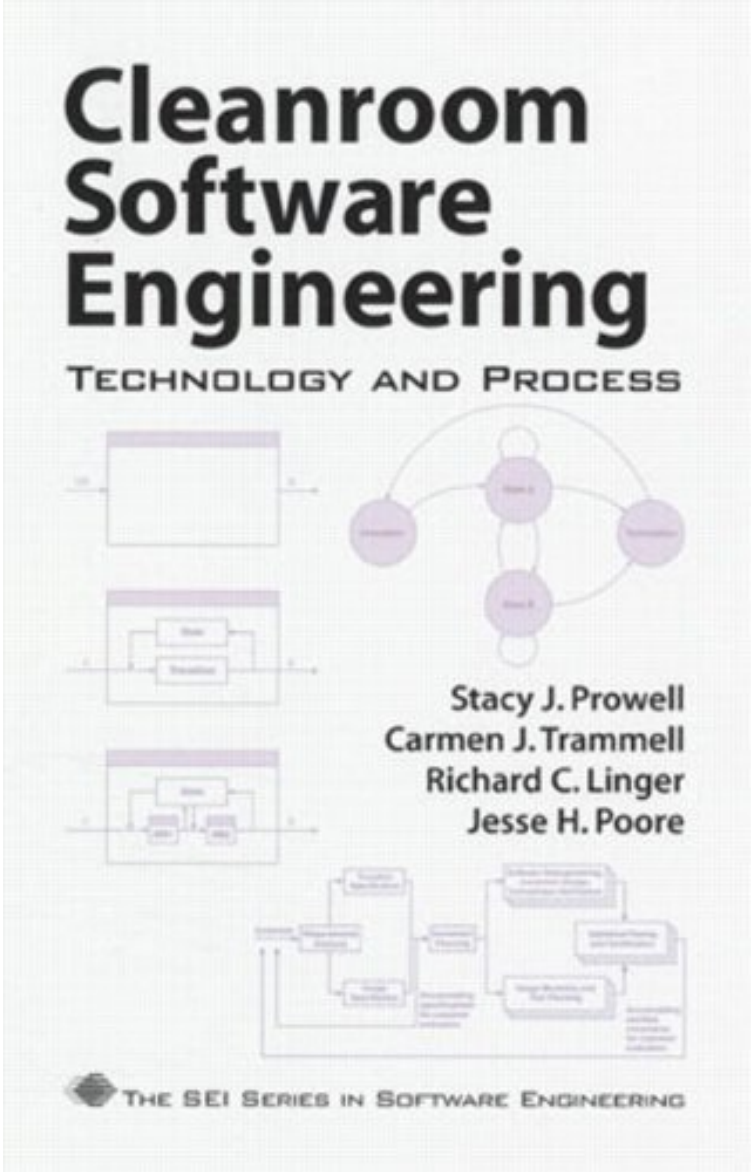

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Von Stacy J. Prowell, Carmen J. Trammell, Richard C. Linger, Jesse H. Poore : Cleanroom Software Engineering: Technology and Process (SEI Series in Software Engineering) before purchasing it in order to gage whether or not it would be worth my time, and all praised Cleanroom Software Engineering: Technology and Process (SEI Series in Software Engineering):

KundenrezensionenHilfreichste Kundenrezensionen1 von 1 Kunden fanden die folgende Rezension hilfreich. A method that shows "how" to other methods's "whats"Von CustomerFrequently, software development methods describe concepts in a way that suggests that one can get better only by divine inspiration. Thankfully, this book's premise is that software development can be done in a deterministic and algorithmic fashion, rather than a heuristic which some are better at applying than others. The importance of this point is that while some people design software much like artists make paintings, people can be trained in Cleanroom Engineering technology. For 95% of all software we don't need artists. Sadly, current software development methods assume they are continuously available.My background is in controls engineering, both hardware and software, and when things machines break due to an error in its control, there is frequent economic loss and, regrettably but occasionally, loss of life. So, in order to avoid these things engineers in controls development do effectively the same thing described in this book. We develop in a stepwise fashion while always proving the implementation in the small before integrating it in the large.I learned of Cleanroom Engineering in 1994 from the STARS project. I formalized my controls engineering to the techniques identified in that literature to great success. When I entered software design and engineering as a full-time effort, most of my colleagues and fellow employees thought I was nuts when I developed software using Cleanroom Engineering. However, my software always arrived on time, without defect, and well reused.Cleanroom Software Engineering identifies the necessary techniques to deliver zero-defect software. By strictly applying these techniques one achieves several other silver-bullet strategies: design and implementation reuse, abstraction of design patterns, configuration management, value engineering, refactoring. By combining Cleanroom Engineering with other techniques (e.g., SEI SW-CMM, PSP, ESP, ISO 9000), one can deliver high quality, reasonably priced product in a variety of domains: controls engineering, software engineering, database development, process and business reengineering, network engineering. Wise managers would require the reading and implementation of the techniques described in this book. I highly recommend it to all practitioners of software design, it fills the hole of "how" for other software development methods "what".K. Milec -- Detroit, Michigan0 von 0 Kunden fanden die folgende Rezension hilfreich. Management, engineering, and process... they are all there.Von Ein KundeThe powerful technology of Cleanroom practice is expertly revealed in "Cleanromm Software Engineering- Technology and Practice" spanning project management, product engineering, and process management.The book is presented through the prism of process management organized around common features similar to the SEI CMM. The rigorous engineering technology enables the practitioner to genuinely attempt defect free software development. With the assistance of a non-trivial worked example (case study) and its templates, the practitioner is introduced to the routine practice of Cleanroom Software Engineering that can be carried out on the factory floor. The insightful management practice equips the manager with the models needed to confidently make commitments and provides the visible artifacts needed to status meeting interim commitments.0 von 0 Kunden fanden die folgende Rezension hilfreich. An Excellent Presentation of the Cleanroom SE ApproachVon ahevner@coba.usf.eduAs a contributor to the theory and methods of Cleanroom software engineering, I am pleased to recommend this book. It brings together the full range of Cleanroom ideas from box structure specification to statistical testing. The authors have done an outstanding job of describing the Cleanroom approach in a clear and logical presentation. Examples are well chosen and support understanding of the underlying Cleanroom concepts. This book deserves a place on the desks of all software engineers.

KurzbeschreibungCleanroom software engineering is a process for developing and certifying high-reliability software. Combining theory-based engineering technologies in project management, incremental development, software specification and design, correctness verification, and statistical quality certification, the Cleanroom process answers today's call for more reliable software and provides methods for more cost-effective software development. Cleanroom originated with Harlan D. Mills, an IBM Fellow and a visionary in software engineering. Written by colleagues of Mills and some of the most experienced developers and practitioners of Cleanroom, Cleanroom Software Engineering provides a roadmap for software management, development, and testing as disciplined engineering practices. This book serves both as an introduction for those new to Cleanroom and as a reference guide for the growing practitioner community. Readers will discover a proven way to raise both quality and productivity in their software-intensive products, while reducing costs. Highlights Explains basic Cleanroom theory Introduces the sequence-based specification method Elaborates the full management, development, and certification process in a Cleanroom Reference Model (CRM) Shows how the Cleanroom process dovetails with the SEI's Capability Maturity Model for Software (CMM) Includes a large case study to illustrate how Cleanroom methods scale up to large projects. .deFor extremely clean and reliable software, Cleanroom software engineering may just do the trick. Aimed at the computer science student, Cleanroom Software Engineering provides a state-of-the-art introduction to a design methodology that is gaining attention in scientific, military, and business circles. Pioneered at IBM, Cleanroom has grown up from a good academic idea to a successful practice. (The book highlights several military and business projects that have succeeded using Cleanroom.) By decomposing a problem into "black boxes" of mathematical functions and then

statistically verifying that all possible inputs to these functions are processed correctly, Cleanroom can guarantee the correctness of software before it ships. The book looks at the incremental approach to software design favored by Cleanroom, in which functions are verified independently. A case study for an embedded security alarm device is presented. Subsequent sections examine the statistical foundations of Cleanroom. (Though not all inputs can be tested, a piece of software can nevertheless be verified statistically.) A second case study explores a Java program that controls a communications satellite, which shows the whole Cleanroom approach--from initial design and coding to Cleanroom certification that proves its correctness (along with plenty of tables showing test data). The Y2K problem proves once and for all that software doesn't always work correctly with every input. Cleanroom techniques, though not yet in the business mainstream, would seem to offer a new level of software reliability. Geared to the academic reader, Cleanroom Software Engineering shows the strengths of this technique for designing the mission-critical software of the future. --Richard DraganKurzbeschreibungCleanroom software engineering is a process for developing and certifying high-reliability software. Combining theory-based engineering technologies in project management, incremental development, software specification and design, correctness verification, and statistical quality certification, the Cleanroom process answers today's call for more reliable software and provides methods for more cost-effective software development. Cleanroom originated with Harlan D. Mills, an IBM Fellow and a visionary in software engineering. Written by colleagues of Mills and some of the most experienced developers and practitioners of Cleanroom, Cleanroom Software Engineering provides a roadmap for software management, development, and testing as disciplined engineering practices. This book serves both as an introduction for those new to Cleanroom and as a reference guide for the growing practitioner community. Readers will discover a proven way to raise both quality and productivity in their software-intensive products, while reducing costs. Highlights Explains basic Cleanroom theory Introduces the sequence-based specification method Elaborates the full management, development, and certification process in a Cleanroom Reference Model (CRM) Shows how the Cleanroom process dovetails with the SEI's Capability Maturity Model for Software (CMM) Includes a large case study to illustrate how Cleanroom methods scale up to large projects.