Verification, Validation, and Testing of Engineered Systems (Wiley Series in Systems Engineering and Management)

Avner Engel
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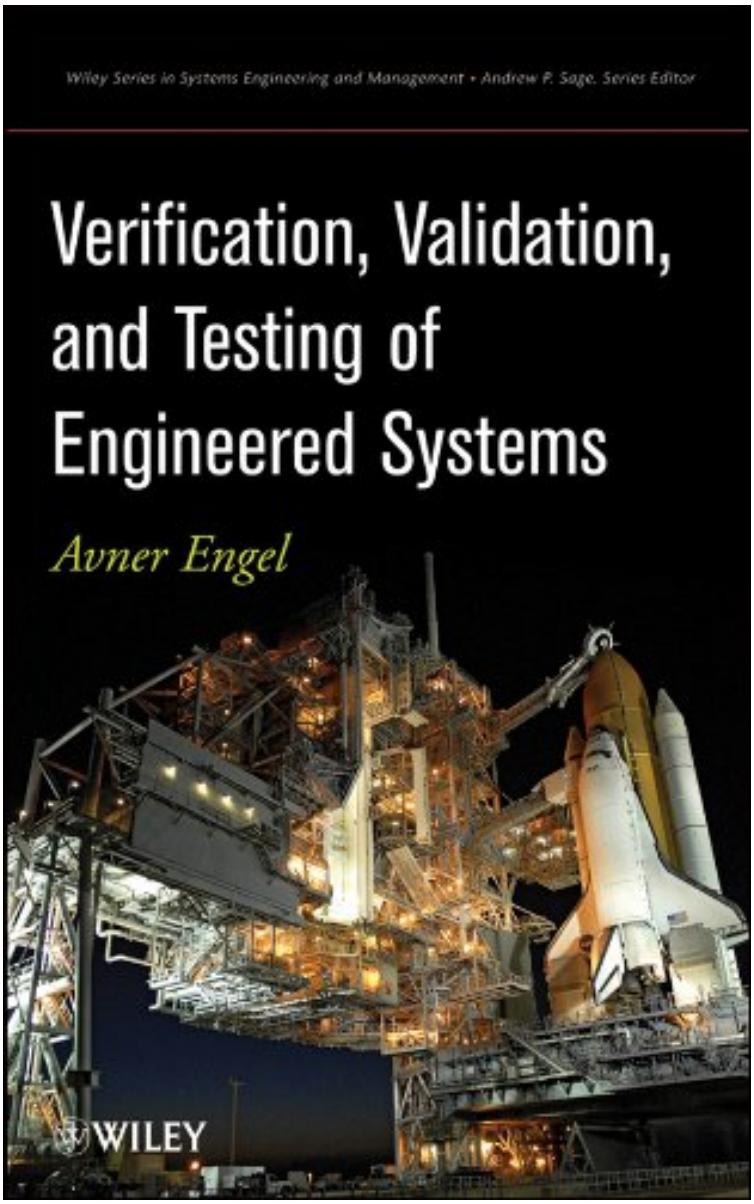

#1032426 in eBooks 2011-06-13 2011-06-13File Name: B005CD796I | File size: 15.Mb

Avner Engel : Verification, Validation, and Testing of Engineered Systems (Wiley Series in Systems Engineering and Management) before purchasing it in order to gage whether or not it would be worth my time, and all praised Verification, Validation, and Testing of Engineered Systems (Wiley Series in Systems Engineering and Management):

0 of 0 people found the following review helpful. Good but too much information at onceBy einsteinboricuaI hate to be the person to break this book's 5-star rating, but here's the main gripe I have with this book (and with many books written by a single author*): it's almost like 8 papers (8 chapters) put together into one book. There's so much material involved that it's almost overwhelming and impossible to absorb in one sitting. I like that the author is very detailed, but that is the book's downfall. It's too much detail. The preface itself addresses this by saying that this book may be used as a supplemental textbook for a graduate course, but that its intended audience is those who practice systems engineering.Maybe once I'm done with the course I can revisit this review and upgrade it to a 4 or 5 star rating, but right now a 3 seems appropriate given how dense the material is.*From experience, many textbooks written by one author rarely take into account the audience their books are intended for. As such, many of these books require years of experience to understand or a very skillful person to break it down for others. That is why this book gets 3 stars: it joins the club.0 of 0 people found the following review helpful. An excellent reference for VV engineers or anyone starting up a ...By CustomerAn excellent reference for VV engineers or anyone starting up a VV program. Well written and very detailed explanations for each step in the process.1 of 5 people found the following review helpful. As advertisedBy HenryArrived on time and as advertised.

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 systemsrsquo; 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 systemrsquo;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.

From the Back CoverA comprehensive collection of VVT activities and methods for system-wide implementationVerification, Validation, and Testing (VVT) is of extreme importance to systems engineering, where up to 60 percent of systems development cost is expended on VVT activities or correcting system defects. Verification, Validation, and Testing of Engineered Systems is the first resource to explain this process in a comprehensive, implementable manner. Through a practical approach, the text presents VVT activities performable throughout a system's lifetime, from system definition and design to system use and disposal.Beginning with a thorough explanation of the role of VVT in the process of engineered systems, the book provides a much-needed quantitative, credible model that answers the key questions of what, how, and when one should test, as well as when to stop testing. It equips both new and experienced readers with statistical and fuzzy logic paradigms for quantitative VVT cost, time, and risk models to minimize uncertainties and risks in systems development.Explains the essence of systems' VVT and the linkage between VVT and systems development, manufacturing, use/maintenance and retirementIncludes systems' development and post-development VVT activities, as well as non-testing and testing systems' methods for engineered systemsReveals how to acquire quality data and optimize the VVT strategy in the face of limitations and in accordance with different business objectivesDescribes the methodology used to validate the quality model along with examples outlining a system's quality improvementsPresents actual quality data related to engineered systems as measured in various industriesVerification, Validation, and Testing of Engineered Systems aids systems and test engineers as well as first- and second-line managers working in systems development and manufacturing industries, civilian agencies, or the military. It can be used as a textbook in graduate-level courses in systems, electrical, aerospace, mechanical, and industrial engineering.About the AuthorDr. Avner Engel holds a PhD from the Industrial Engineering Department of Tel-Aviv University. For the past twenty years, he has worked for

Israel Aerospace Industries, where he has managed large software projects. Dr. Engel was involved with several research projects funded by the European Commission. He is currently teaching systems engineering courses at the Holon Institute of Technology in Holon, Israel.