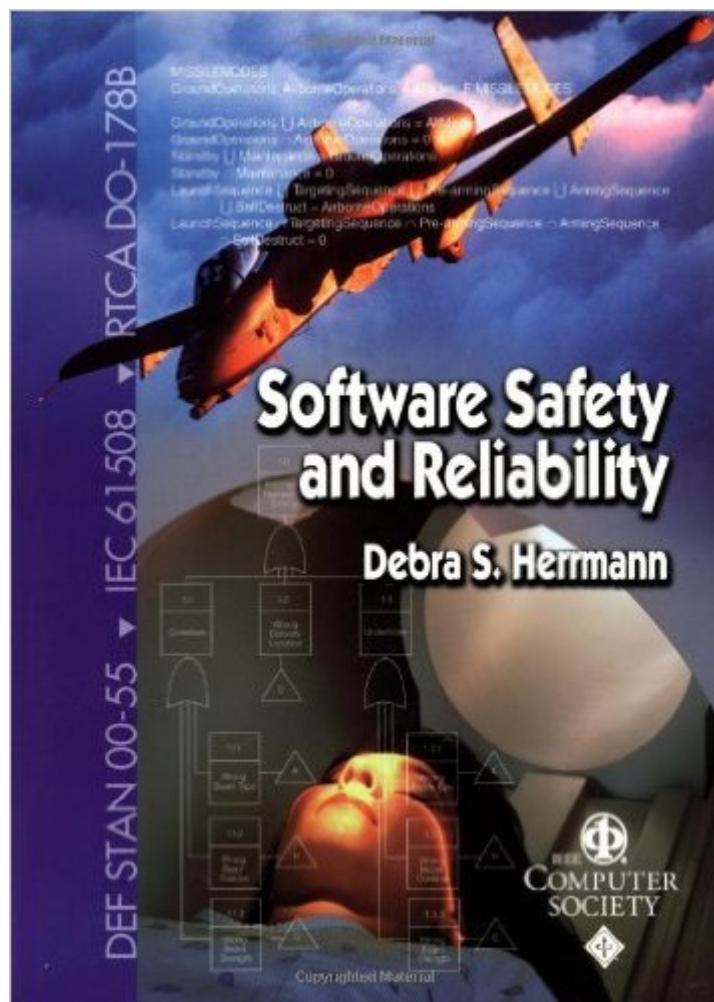


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# Software Safety And Reliability: Techniques, Approaches, And Standards Of Key Industrial Sectors



## **Synopsis**

The role of software has changed from simply generating financial or mechanical data to monitoring and controlling equipment that directly affects human life and safety. As a result, a more thorough understanding and familiarity with the specialized techniques used to achieve and assess the safety and reliability of software is needed in academia, industry, and government. This original text introduces the concepts, techniques, and approaches used to achieve and assess software safety and reliability. Debra Herrmann presents a cross-section of current safety and reliability standards that cross multiple industrial sectors while focusing on the additional required activities to achieve software safety and reliability. In organizing this text, she has three objectives. The first is to raise the reader's awareness on the importance of software safety and reliability and on its role in mission critical systems by presenting many illustrative, everyday examples. The second objective is to provide practical information about the current methods used to achieve and assess software safety and reliability. The final objective is to improve the understanding and practice of software safety and reliability by consolidating the latest research so that it can be compared and analyzed for the future. The book is written for engineers, scientists, managers, regulators, and policy makers involved in the design, development, acquisition, and certification of safety-critical systems.

## **Book Information**

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## **Customer Reviews**

Software Safety and Reliability is an excellent resource for those who want to learn more about software safety. By going into detail into the approaches taken by a number of respected

organizations, the reader can take the best of each and apply them to their own problems. The major weakness in the approach was the reliance on software reliability as the major tool. A system safety approach as advocated by Dr. Nancy Leveson is much more complete and effective than reliability. Her latest book, *Safeware: System Safety and Computers* is a better resource for those who are really interested in the "How to's" of an effective software safety program. For the Software Safety professional, both references would be essential for your bookshelf.

Q. What's there to know about most software-intensive system safety standards? A. They proscribe what is considered to be an appropriate level of software engineering rigor proportional to the risk associated with the development. The objectives each standard requires are somewhat different - eg 50128 front loads on formal analysis, DO-178B emphasizes verification of expected behavior etc... If you really need to know the difference between standards then chances are you need the standards in question. This book won't provide you a better insight than that. If you are in the business of system safety you will quickly outgrow the works of Hermann and Leveson.

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