

A Book Series on Performability Engineering

A true performance of a product, or system or service must be judged over the entire life cycle activities connected with design, manufacture, use and disposal in relation to economics of maximization of dependability and minimizing its impact on environment. The concept of *performability* allows us to take holistic assessment of performance and provides an aggregate attribute that reflects an entire engineering effort of a product, system or service designer in achieving dependability and sustainability. Performance should not just be indicative of achieving quality, reliability, maintainability and safety for a product, system or service but achieving sustainability as well. The conventional perspective of dependability ignores the environmental impact considerations that accompany the development of products, systems and services. However, any industrial activity in creating a product, system or service is always associated with certain environmental impacts that follow at each phase of development. These considerations have become all the more necessary in 21st Century as the world resources continue to become scarce with time and the cost of materials and energy keep rising. It is not difficult to visualize that by employing the strategy of dematerialization (using less and less materials), minimum energy and creating minimum waste while maximizing the yield and developing economically viable and safe processes (clean production and clean technologies), we will create minimal adverse effect on the environment during production and disposal at the end of the life. This is basically the goal of performability engineering.

It may be observed that the above mentioned performance attributes are interrelated and should not be considered in isolation for optimization of performance. It will be our endeavour to bring out a distinct picture of this interrelationship through the titles produced under this book series with the objective to help create optimal and sustainable products, system and services.

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The following titles have already been contracted and are "in progress":

1. Building Dependable Distributed Systems
Author: Dr. Wenbing Zhao, Cleveland State University, U.S.A.
2. Binary Decision Diagrams and Extensions for System Reliability Analysis
Authors: Dr. Suprasad V. Amari, PTC & Dr. Liudong Xing, University of Massachusetts, U.S.A.
3. Fundamentals of Reliability Engineering: Its Applications in Multistage Interconnected Networks
Author: Dr. Indra Gunawan, Monash University, Australia

(Contd.on p. 666)