

Preface

Reusable simulation software! Now that's the edge needed by the simulation technologist in today's competitive environment. At present, large research organizations and industrial corporations are global in structure. As a result, units or modules of simulation code developed in the United States must be *reusable* in other parts of the world to realize this competitive cost edge. And, in the development of large systems, building a "breadboard" or engineering model is expensive, especially if it doesn't work as specified. When we simulate a large system (or any system, for that matter) on computers (or parallel processors), the system can be validated before we build it. Better yet, the simulated system can be "perturbed" to see how it reacts to real-world disturbances or out-of-tolerance conditions (lightning strikes, power outages, loss of signal, or lack of critical parts on the production line, for example). In order to perform large-scale simulations, our simulation techniques must be *adaptable* to real world situations. However, some philosophical analyses should be planned prior to application because, once a simulation program is in place, it must produce repeatable results. As we all know, "the only thing in this world that changes is change itself." So our simulation software must also be *maintainable*.

Reusability, adaptability, maintainability—that's the ticket in today's global economy. These standard software object-oriented design procedures can be applied to the development of simulation environments for separation of physical, control, and information elements of a system. *Object-Oriented Simulation: Reusability, Adaptability, Maintainability* is a valuable reference resource for the simulation developer who desires to work on the *leading edge* of simulation technology. The book was written

