Emergent Behavior in Complex Systems Engineering: A Modeling and Simulation Approach
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DESCRIPTION
A comprehensive text that reviews the methods and technologies that explore emergent behavior in complex systems engineering in multidisciplinary fields

In *Emergent Behavior in Complex Systems Engineering*, the authors present the theoretical considerations and the tools required to enable the study of emergent behaviors in manmade systems. Information Technology is key to today’s modern world. Scientific theories introduced in the last five decades can now be realized with the latest computational infrastructure. Modeling and simulation, along with Big Data technologies are at the forefront of such exploration and investigation.

The text offers a number of simulation-based methods, technologies, and approaches that are designed to encourage the reader to incorporate simulation technologies to further their understanding of emergent behavior in complex systems. The authors present a resource for those designing, developing, managing, operating, and maintaining systems, including system of systems. The guide is designed to help better detect, analyse, understand, and manage the emergent behaviour inherent in complex systems engineering in order to reap the benefits of innovations and avoid the dangers of unforeseen consequences. This vital resource:

- Presents coverage of a wide range of simulation technologies
- Explores the subject of emergence through the lens of Modeling and Simulation (M&S)
• Offers contributions from authors at the forefront of various related disciplines such as philosophy, science, engineering, sociology, and economics

• Contains information on the next generation of complex systems engineering

Written for researchers, lecturers, and students, *Emergent Behavior in Complex Systems Engineering* provides an overview of the current discussions on complexity and emergence, and shows how systems engineering methods in general and simulation methods in particular can help in gaining new insights in complex systems engineering.

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