

Case Studies in System of Systems, Enterprise Systems, and Complex Systems Engineering

Suitable as a reference for industry practitioners and as a textbook for classroom use, Case Studies in System of Systems, Enterprise Systems, and Complex Systems Engineering provides a clear understanding of the principles and practice of system of systems engineering (SoSE), enterprise systems engineering (ESE), and complex systems engineering (CSE). Multiple domain practitioners present and analyze case studies from a range of applications that demonstrate underlying principles and best practices of transdisciplinary systems engineering. A number of the case studies focus on addressing real human needs. Diverse approaches such as use of soft systems skills are illustrated, and other helpful techniques are also provided. The case studies describe, examine, analyze, and assess applications across a range of domains, including:

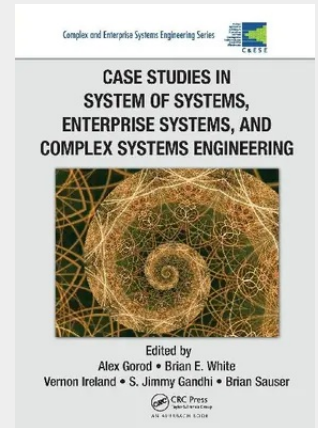
- Engineering management and systems engineering education
- Information technology business transformation and infrastructure engineering
- Cooperative framework for and cost management in the construction industry
- Supply chain modeling and decision analysis in distribution centers and logistics
- International development assistance in a foreign culture of education
- Value analysis in generating electrical energy through wind power
- Systemic risk and reliability assessment in banking
- Assessing emergencies and reducing errors in hospitals and health care systems
- Information fusion and operational resilience in disaster response systems
- Strategy and investment for capability developments in defense acquisition
- Layered, flexible, and decentralized enterprise architectures in military systems
- Enterprise transformation of the air traffic management and transport network

Supplying you with a better understanding of SoSE, ESE, and CSE concepts and principles, the book highlights best practices and lessons learned as benchmarks that are applicable to other cases. If adopted correctly, the approaches outlined can facilitate significant progress in human affairs. The study of complex systems is still in its infancy, and it is likely to evolve for decades to come. While this book does not provide all the answers, it does establish a platform, through which analysis and knowledge application can take place and conclusions can be made in order to educate the next generation of systems engineers.

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