1. Record Nr. UNINA9910254851403321

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Titolo	Guide to Modeling and Simulation of Systems of Systems / / by Bernard P. Zeigler, Hessam S. Sarjoughian
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-64134-4
Edizione	[2nd ed. 2017.]
Descrizione fisica	1 online resource (XIV, 400 p. 216 illus., 141 illus. in color.)
Collana	Simulation Foundations, Methods and Applications, , 2195-2825
Disciplina	003.3
Soggetti	Computer simulation Electronic digital computers - Evaluation Electronic data processing - Management Computer Modelling System Performance and Evaluation IT Operations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I -- Modeling and Simulation of Systems of Systems -- DEVS Integrated Development Environments -- System Entity Structure Basics -- DEVS Natural Language Models and Elaborations -- Specialization and Pruning -- Aspects and Multi-Aspects -- Managing Inheritance in Pruning -- Automated and Rule-Based Pruning -- Part II -- DEVS Simulation Protocol -- Dynamic Structure: Agent Modeling and Publish/Subscribe -- Interest-Based Information Exchange: Mappings and Models -- Languages for Constructing DEVS Models -- Part III -- Flexible Modeling Support Environments -- Service-Based Software Systems -- Cloud System Simulation Modeling -- Model Development and Execution Process with Repositories, Validation and Verification -- Modeling and Simulation of Living Systems as Systems of Systems -- Activity-Based Implementations of Systems of Systems -- DEVS Support for Markov Modeling and Simulation.
Sommario/riassunto	This easy-to-follow textbook provides an exercise-driven guide to the use of the Discrete Event Systems Specification (DEVS) simulation modeling formalism and the System Entity Structure (SES) simulation

model ontology supported with the latest advances in software architecture and design principles, methods, and tools for building and testing virtual Systems of Systems (SoS). The book examines a wide variety of SoS problems, ranging from cloud computing systems to biological systems in agricultural food crops. This enhanced and expanded second edition also features a new chapter on DEVS support for Markov modeling and simulation. Topics and features: Provides an extensive set of exercises throughout the text to reinforce the concepts and encourage use of the tools, supported by introduction and summary sections Discusses how the SoS concept and supporting virtual build and test environments can overcome the limitations of current approaches Offers a step-by-step introduction to the DEVS concepts and modeling environment features required to build sophisticated SoS models Describes the capabilities and use of the tools CoSMoS/DEVS-Suite, Virtual Laboratory Environment, and MS4 Me™ Reviews a range of diverse applications, from the development of new satellite design and launch technologies, to surveillance and control in animal epidemiology Examines software/hardware co-design for SoS, and activity concepts that bridge information-level requirements and energy consumption in the implementation Demonstrates how the DEVS formalism supports Markov modeling within an advanced modeling and simulation environment (NEW) This accessible and hands-on textbook/reference provides invaluable practical guidance for graduate students interested in simulation software development and cyber-systems engineering design, as well as for practitioners in these, and related areas. Dr. Bernard P. Zeigler is Emeritus Professor of Electrical & Computer Engineering and Co-Director of the Arizona Center for Integrative Modeling and Simulation (ACIMS), at the University of Arizona, Tucson, USA. He is also Chief Scientist at RTSync, Rockville, MD, USA. Dr. Hessam S. Sarjoughian is Associate Professor of Computer Science and Co-Director of ACIMS at Arizona State University, Tempe, USA.