

Contents

Contributing Authors	vii
Preface	xiii
PART I THEMES AND ISSUES	
1	
Cyberspace and Organizational Structure: An Analysis of the Critical Infrastructure Environment	3
<i>Michael Quigg, Juan Lopez, Mason Rice, Michael Grimaila and Benjamin Ramsey</i>	
2	
Critical Infrastructure Asset Identification: Policy, Methodology and Gap Analysis	27
<i>Christine Izuakor and Richard White</i>	
3	
Mitigating Emergent Vulnerabilities in Oil and Gas Assets via Resilience	43
<i>Stig Johnsen</i>	
4	
Legal Aspects of Protecting Intellectual Property in Additive Manufacturing	63
<i>Adam Brown, Mark Yampolskiy, Jacob Gatlin and Todd Andel</i>	
PART II CONTROL SYSTEMS SECURITY	
5	
Practical Application Layer Emulation in Industrial Control System Honeypots	83
<i>Kyle Girtz, Barry Mullins, Mason Rice and Juan Lopez</i>	
6	
Lightweight Journaling for SCADA Systems via Event Correlation	99
<i>Antoine Lemay, Alireza Sadighian and Jose Fernandez</i>	

7

- Forensic Analysis of a Siemens Programmable Logic Controller 117
Raymond Chan and Kam-Pui Chow

8

- Division of Cyber Safety and Security Responsibilities Between 131
 Control System Owners and Suppliers
Ruth Skotnes

PART III INFRASTRUCTURE MODELING AND SIMULATION

9

- Multigraph Critical Infrastructure Model 149
Bernhard Schneidhofer and Stephen Wolthusen

10

- Enhancing Decision Support with Interdependency Modeling 169
Dario Masucci, Cosimo Palazzo, Chiara Foglietta and Stefano Panzieri

11

- Integrating Simulated Physics and Device Virtualization in Control 185
 System Testbeds
Owen Redwood, Jason Reynolds and Mike Burmester

12

- A Multidisciplinary Predictive Model for Managing Critical 203
 Infrastructure Disruptions
Carol Romanowski, Rajendra Raj, Jennifer Schneider, Sumita Mishra, Bernard Brooks, Jessica Pardee, Bharat Bhole and Nikolaus Robalino

PART IV RISK AND IMPACT ASSESSMENT

13

- Towards a Comparable Cross-Sector Risk Analysis: RAMCAP 221
 Revisited
Richard White, Aaron Burkhart, Terrance Boult and Edward Chow

14

- Classification and Comparison of Critical Infrastructure Protection 239
 Tools
George Stergiopoulos, Efstratios Vasilellis, Georgia Lykou, Panayiotis Kotzanikolaou and Dimitris Gritzalis

Critical Infrastructure Protection X

10th IFIP WG 11.10 International Conference, ICCIP

2016, Arlington, VA, USA, March 14-16, 2016, Revised

Selected Papers

Rice, M.; Shenoi, S. (Eds.)

2016, XIV, 255 p. 62 illus., Hardcover

ISBN: 978-3-319-48736-6