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Robustness and resilience; 3.3 Flexibility; 3.3.1 Definition; 3.3.2 Flexibility metrics; 3.3.3 Flexibility and robustness; 3.3.4 Flexibility and resilience; 3.4 Agility; 3.4.1 Definition; 3.4.2 Agility metrics; 3.4.3 Agility and flexibility; 3.4.4 Agility and resilience; 3.5 Comparing R2FAR in Terms of Type Failures, Uncertainty and Adaptability; 3.6 Summary; Chapter 4 - Resilience-Enabling Schemes; 4.1 Scheme Identification; 4.2 Vulnerability Reduction; 4.2.1 Redundancy; 4.2.2 Diversity; 4.2.3 Hardening; 4.2.4 Capacity tolerance; 4.2.5 Modularity; 4.3 Increasing Adaptive Capacity Through Reorganization; 4.3.1 Resource allocation; 4.3.2 Collaboration - United we stand; 4.3.3 Preparedness; 4.3.4 Cognition; 4.4 Summary; Chapter 5 - Measuring the Resilience of Networked Infrastructure Systems; 5.1 Risk Analysis; 5.1.1 Risk assessment; 5.1.1.1 Threat identification; 5.1.1.2 Vulnerability assessment; 5.1.1.3 Consequences; 5.2 Networked Infrastructure Resilience Assessment (NIRA) Framework; 5.2.1 Boundary definition; 5.2.1.1 Spatial boundaries; 5.2.1.2 Operational boundaries; 5.2.1.3 Temporal boundaries; 5.2.1.4 Organizational boundaries; 5.2.2 Resilience metrics definition; 5.2.3 Network resilience and node-to-node resilience; 5.2.3.1 Network resilience; 5.2.3.2 Node-to-node resilience; 5.2.4 System modeling; 5.2.4.1 System modeling using network flow analysis; 5.2.4.2 System modeling using system dynamics; 5.2.4.3 System modeling using social network analysis; 5.2.5 Resilience assessment process; 5.2.5.1 Disruption scenarios; 5.2.6 Resilience schemes implementation and simulation; 5.2.7 Resilience scheme evaluation; 5.3 NIRA Framework: A Systems Approach for Measuring Resilience; 5.4 Summary; Chapter 6 - Assessing the Resilience of the Global Internet Cable System

Sommario/riassunto

This volume elaborates on both the qualitative and quantitative aspects of resilience. Reviewing the literature exploring the concept of resilience in engineering, it discusses resilience in terms of the various definitions used, the methodologies proposed to characterize resilience, and the metrics put forward to quantify the resilience of specific service infrastructure systems. The review also identifies the key factors that contribute to organizational resilience. The concept of resilience is compared to other system properties such as reliability, robustness, flexibility and agility, by ta
