

DEPARTMENT OF DEFENSE SPONSORED INFORMATION SECURITY RESEARCH: NEW METHODS FOR PROTECTING AGAINST CYBER THREATS

Foreword.

Acknowledgements.

Introduction (Steven King).

Chapter 1. Architecting Information Infrastructures for Security (Cliff Wang).

1.1 Architectures for Secure and Robust Distributed Infrastructures.

1.2 A complex Adaptive System Approach to QoS Assurance and Stateful Resource Management for Dependable Information Infrastructure.

1.3 Anomaly and Misuse Detection in Network Traffic Streams-Checking and Machine Learning Approaches.

1.4 Distributed Systems Security via Logical Framework.

1.5 Distributed Immune Systems for Wireless Networks Information Assurance.

1.6 Hi-DRA High-Speed, Wide-Area Network Detection, Response, and Analysis.

Chapter 2. At the Edges of the Critical Information Infrastructure (David Hislop, Todd Combs).

2.1 Enabling Dynamic Security Management of Networked Systems via Device-Embedded Security.

2.2 Software Model Checking for Embedded Systems.

2.3 Advanced tool Integration for Embedded System Assurance.

2.4 Verification Tools for Embedded Systems.

Chapter 3. Software Engineering for Assurance (Ralph Wachter, Gary Toth).

3.1 Static Analysis to Enhance the Power of Model Checking for Concurrent Software.

3.2 Protecting COTS from the Inside.

3.3 RAPIDware: Component-Based Development of Adaptive and Dependable Middleware.

3.4 Generating Efficient Trust Management Software from Policies.

3.5 Modeling and Simulation Environment for Critical Information Protection.

Chapter 4. Malicious Mobile Code (Ralph Wachter, Gary Toth).

4.1 Language-Based Security for Malicious Mobile Code.

4.2 Model-Carrying Code: A New Approach to Mobile-Code Security.

4.3 Neutralizing Malicious Mobile Code.

Chapter 5. Dependable Critical Information Infrastructure for Command and Control (Robert

Herklotz, Chris Arney).

5.1 Trustworthy Infrastructure, Mechanisms, and Experimentation for Diffuse Computing.

5.2 Adaptable Situation-Aware Secure Services-Based Systems.

5.3 Detecting Deception in the Military Infosphere: Improving and Integrating Human Detection

Capabilities with Automated Tools.

5.4 Vulnerability Assessment Tools for Complex Information Networks.