



**Ninth Annual IFIP WG 11.10 International Conference
on Critical Infrastructure Protection
SRI International
1100 Wilson Boulevard, Suite 2800, Arlington, Virginia 22209
March 16-18, 2015**

March 16, 2015 (Monday)

8:15am - 8:45am: Breakfast

9:00am - 9:10am: Welcoming Remarks

Zach Tudor, Conference General Chair, SRI International, Arlington, Virginia, USA

9:10am - 10:10am: Keynote Lecture

Transforming Infrastructure Development: From Protection to Resilience

Ruth David, President and CEO, Analytic Services (ANSER), Falls Church, Virginia, USA; and
Former Deputy Director, Science and Technology, Central Intelligence Agency, Langley, Virginia, USA

10:10am – 10:30am: Break

10:30am - 12:00pm: Session 1: Themes and Issues

Chair: Zach Tudor, SRI International, Arlington, Virginia, USA

A Model for Characterizing Cyberpower

Adrian Venables, Siraj Ahmed Shaikh and James Shuttleworth
Coventry University, Coventry, United Kingdom

Cyber Attacks and Political Events: The Case of Occupy Central

Kam-Pui Chow, Ken Yau and Frankie Li
University of Hong Kong, Hong Kong, China

Information Sharing Decomposed

Eric Luijff
Netherlands Organisation for Applied Scientific Research (TNO), The Hague, The Netherlands

12:00pm - 1:00pm: Lunch

1:15pm - 2:15pm: Keynote Lecture

Bolstering Cyber Defenses in an Age of Convergence, Speed and Chaos

Chris Inglis, Robert and Mary M. Looker Distinguished Chair of Cyber Operations, U.S. Naval Academy, Annapolis, Maryland, USA; and Former Deputy Director, National Security Agency, Fort Meade, Maryland, USA

2:15pm - 3:15pm: Session 2: Industrial Control Systems I

Chair: Eric Luijff, Netherlands Organisation for Applied Scientific Research (TNO), The Hague, The Netherlands

Control Variable Classification, Modeling and Anomaly Detection in Modbus/TCP SCADA Networks

Noam Erez and Avishai Wool
Tel Aviv University, Tel Aviv, Israel

Locality-Based Extraction of Flow Whitelists in SCADA Networks

Seungoh Choi, Yeop Chang, Jeong-Han Yun and Woonyon Kim
The Attached Institute of ETRI, Daejeon, South Korea

March 16, 2015 (Monday) (continued)

3:15pm - 3:45pm: Break

3:45pm - 5:15pm: Session 3: Risk Assessment and Mitigation

Chair: Stig Johnsen, SINTEF/Norwegian University of Science and Technology, Trondheim, Norway

Using Centrality Measures in Critical Infrastructure Dependency Graphs for Efficient Risk Mitigation

George Stergiopoulos, Marianthi Theocharidou, Panayiotis Kotzanikolaou and Dimitris Gritzalis

Athens University of Economics and Business, Athens, Greece

European Commission Joint Research Center, Ispra, Italy

University of Piraeus, Piraeus, Greece

A System Dynamics Approach for Assessing the Impact of Cyber Attacks on Critical Infrastructures

Bela Genge, Istvan Kiss and Piroska Haller

Petru Maior University, Tirgu Mures, Romania

Assessing the Risk of Cyber Threats Using the CISIA Pro Simulator

Chiara Foglietta, Cosimo Palazzo, Stefano Panzieri and Riccardo Santini

University of Rome TRE, Rome, Italy

5:15pm - 5:45pm: IFIP WG 11.10 Business Meeting

5:45pm - 8:00pm: Conference Reception

March 17, 2015 (Tuesday)

8:15am - 8:45am: Breakfast

8:45am - 10:15am: Session 4: Cyber-Physical Systems I

Chair: Kam-Pui Chow, University of Hong Kong, Hong Kong, China

A Multi-Layered Kill-Chain-Based Security Analysis Framework for Cyber-Physical Systems

Adam Hahn, Roshan Thomas, Ivan Lozano and Alvaro Cardenas

Washington State University, Pullman, Washington, USA

The MITRE Corporation, McLean, Virginia, USA

Alvaro Cardenas, University of Texas at Dallas, Richardson, Texas, USA

Using Information Flow Methods to Secure Cyber-Physical Systems

Gerry Howser, Kalamazoo College, Kalamazoo, Michigan, USA

Run-Time Integrity for Cyber-Physical Infrastructures

Jonathan Jenkins and Mike Burmester

Florida State University, Tallahassee, Florida, USA

10:15am - 10:30am: Break

10:30am - 12:00pm: Session 5: Industrial Control Systems II

Chair: Alvaro Cardenas, University of Texas at Dallas, Richardson, Texas, USA

Modeling Message Sequences for Intrusion Detection in Industrial Control Systems

Marco Caselli, Emmanuele Zambon, Jonathan Petit and Frank Kargl

University of Twente, Enschede, The Netherlands

SecurityMatters, Enschede, The Netherlands

University College Cork, Cork, Ireland

University of Ulm, Ulm, Germany

Constructing Cost-Effective and Targetable Industrial Control System Honey pots for Production Networks

Michael Winn, Mason Rice, Stephen Dunlap and Juan Lopez

Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

A Symbolic Honey net Framework for SCADA System Threat Intelligence

Owen Redwood, Joshua Lawrence and Mike Burmester

Florida State University, Tallahassee, Florida, USA

12:00pm - 1:00pm: Lunch

1:15pm - 2:15pm: Session 6: Infrastructure Protection I

Chair: Sebastian Hess, NATO Communications and Information Agency, Brussels, Belgium

A Cybersecurity Architecture for Secure Microgrid Deployments

Apurva Mohan, Gregory Brainard, Himanshu Khuranai and Scott Fischer

Honeywell Research Laboratories, Golden Valley, Minnesota, USA

Honeywell Defense and Space, Albuquerque, New Mexico, USA

Evaluation of ITU-T G.9959 Wireless Systems in the Critical Infrastructure

Christopher Badenhop, Jonathan Fuller, Joseph Hall, Benjamin Ramsey and Mason Rice

Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

2:15pm - 2:45pm: Break

2:45pm - 3:45pm: Session 7: Industrial Control Systems III

Chair: Avishai Wool, Tel Aviv University, Tel Aviv, Israel

Enhancing a Virtual SCADA Cyber Security Laboratory Using Simulink

Zach Thornton and Thomas Morris

Mississippi State University, Mississippi State, Mississippi, USA

March 17, 2015 (Tuesday) (continued)

How Industrial Control System Security Training is Falling Short

Jonathan Butts and Michael Glover

QED Secure Solutions, Coppell, Texas, USA

Fox Three, McKinney, Texas, USA

3:45pm - 4:00pm: Break

4:00pm - 5:30pm: Panel: Critical Infrastructure Protection Education and Training

Panel Chair: Richard George, Johns Hopkins Applied Physics Laboratory, Laurel, Maryland, USA

Panelists: Christie Jones, George Mason University, Arlington, Virginia, USA

Mark Troutman, George Mason University, Arlington, Virginia, USA

Alan Paller, SANS Institute, Bethesda, Maryland, USA (Invited)

Eric Luijff, Netherlands Organisation for Applied Scientific Research (TNO), The Hague, The Netherlands

Diana Burley, George Washington University, Washington, DC, USA

March 18, 2015 (Wednesday)

8:15am - 8:45am: Breakfast

8:45am - 9:45am: Session 8: Cyber-Physical Systems II

Chair: Thomas Morris, Mississippi State University, Mississippi State, Mississippi, USA

Industrial Control System Scenario Fingerprint and Abnormality Detection

Yong Peng, Chong Xiang, Haihui Gao, Dongqing Chen and Wang Ren
China Information Technology Security Evaluation Center, Beijing, China

Security Challenges for Additive Layer Manufacturing with Metallic Alloys

Mark Yampolskiy, Lena Schuetzle, Uday Vaidya and Alec Yasinsac
University of South Alabama, Mobile, Alabama, USA
Technical University of Munich, Munich, Germany
University of Alabama at Birmingham, Birmingham, Alabama, USA

9:45am - 10:45am: Session 9: Infrastructure Protection II

Chair: Marianthi Theoharidou, European Commission Joint Research Center, Ispra, Italy

A Methodology for Developing Microgrid Cybersecurity Requirements and Mechanisms

Apurva Mohan and Himanshu Khurana
Honeywell Research Laboratories, Golden Valley, Minnesota, USA
Honeywell Building Solutions, Golden Valley, Minnesota, USA

Situational Awareness in Critical Infrastructures Using Evidence Discounting

Antonio Di Pietro, Andrea Gasparri and Stefano Panzieri
Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Rome, Italy
University of Rome TRE, Rome, Italy

10:45am - 11:00am: Break

11:00am - 12:00pm: Session 10: Emergency Response

Chair: Mason Rice, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Emergency Response in Multiple-Fire Incidents: Allocation and Scheduling of Firefighting Units

Khaled Alutaibi, Abdullah Alsubaie and Jose Marti
University of British Columbia, Vancouver, Canada
Ministry of Interior – Kingdom of Saudi Arabia, Riyadh, Saudi Arabia
King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia

Regional Response to Large Scale Emergency Events: Building on Historical Data

Carol Romanowski, Rajendra Raj, Jennifer Schneider, Sumita Mishra, Vinay Shivshankar, Srikant Ayengar and Fernando Cueva
Rochester Institute of Technology, Rochester, New York, USA

12:00pm - 1:00pm: Lunch