

**Seventh Annual IFIP WG 11.10 International Conference
on Critical Infrastructure Protection
Marvin Center, Room 403
George Washington University
800 21st Street NW, Washington, DC 20052
March 18-20, 2013**

March 18, 2013 (Monday)

8:00am - 8:50am: Breakfast (Marvin Center, Room 402)

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

Richard George, Conference General Chair, Johns Hopkins Applied Physics Laboratory, Laurel, Maryland, USA
Lance Hoffman, Local Organizing Committee, George Washington University, Washington, DC, USA

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

The Future of Cyberspace Professionals – Do We Have the Current Model Right?

Maj. Gen. (Retd.) John Maluda, Former Director, Cyber Space Transformation and Strategy, U.S. Air Force, Washington, DC, USA

10:10am – 10:30am: Break (Marvin Center, Room 402)

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

Chair: Jonathan Butts, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Cascading Effects of Common-Cause Failures on Critical Infrastructures

Panayiotis Kotzanikolaou, Marianthi Theoharidou and Dimitris Gritzalis
University of Piraeus, Piraeus, Greece
Athens University of Economics and Business, Athens, Greece

The Cyber Threats Posed by Aging Infrastructures

Ginger Armbruster, Barbara Endicott-Popovsky and Jan Whittington
University of Washington, Seattle, Washington, USA

Attacker Decision-Making in Power Grid Cyber Attacks

Aunshul Rege
Temple University, Philadelphia, Pennsylvania, USA

12:00pm - 1:10pm: Lunch (Marvin Center, J Street Food Court)

1:15pm - 2:45pm: Session 2: Infrastructure Security

Chair: Marianthi Theoharidou, Athens University of Economics and Business, Athens, Greece

Securing Wastewater Collection Systems from Accidental and Intentional Harm: A Cost-Benefit Analysis

Steve Papa, William Casper and Tyler Moore
Lockheed Martin Aeronautics, Fort Worth, Texas, USA
Southern Methodist University, Dallas, Texas, USA

Intrusion Detection Methods for Liquid Pipeline Systems

Saed Alajlouni and Vittal Rao
Texas Tech University, Lubbock, Texas, USA

Timely Delivery of Control Messages in Positive Train Control

Andre Bondi, Damindra Bandara, Duminda Wijesekera, Michael Smith and Rajni Goel
Siemens Corporate Technology, Princeton, New Jersey, USA
George Mason University, Fairfax, Virginia, USA
Siemens Industry, New York, New York, USA
Howard University, Washington, DC, USA

2:45pm - 3:15pm: Break (Marvin Center, Room 402)

March 18, 2013 (Monday) (continued)

3:15pm - 4:15pm: Session 3: Risk and Impact Assessment

Chair: Jan Whittington, University of Washington, Seattle, Washington, USA

Applicability of Mission-Based Analysis for Assessing Cyber Risk in Critical Infrastructure Systems

Thomas Llanso, Gregg Tally, Michael Silbergliitt and Tara Anderson
Johns Hopkins Applied Physics Laboratory, Laurel, Maryland, USA

An Experimental Framework for Impact Assessment of Cyber Attacks on Interdependent Physical Systems

Antonio Di Pietro, Chiara Foglietta, Simone Palmieri and Stefano Panzieri
ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Rome, Italy
Universita di Roma Tre, Rome, Italy

4:15pm - 5:45pm: Panel Discussion

Moderator: Michael Glover, Chief Information Officer, Prime Controls, Lewisville, Texas, USA

Cyber War...What is it Good For?

Michael Assante, President and CEO, National Board of Information Security Examiners, Idaho Falls, Idaho, USA

Fred Cohen, CEO, Management Analytics, Livermore, California, USA

Billy Rios, Technical Director, Cylance, Irvine, California, USA

Zachary Tudor, Program Director, SRI International, Arlington, Virginia, USA

5:45pm - 7:45pm: Conference Reception (Tompkins Hall, Room 107, 725 23rd Street, NW)

March 19, 2013 (Tuesday)

8:00am - 8:50am: Breakfast (Marvin Center, Room 402)

9:00am - 10:00am: Keynote Lecture

On the Design of Secure Critical Infrastructures

Tom Palmatier, Managing Executive, Asymmetric Operations, Johns Hopkins Applied Physics Laboratory, Laurel, Maryland, USA

10:00am - 10:30am: Break (Marvin Center, Room 402)

10:30am - 12:00pm: Session 4: Control Systems Security I

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

Accurate Modeling of Modbus TCP for Intrusion Detection in SCADA Systems

Niv Goldenberg and Avishai Wool

Tel Aviv University, Tel Aviv, Israel

Flow Whitelisting in SCADA Networks

Rafael Ramos Regis Barbosa, Ramin Sadre and Aiko Pras

University of Twente, Twente, The Netherlands

Firmware Modification Attacks on Programmable Logic Controllers

Zachry Basnight, Jonathan Butts, Juan Lopez and Thomas Dube

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

12:00pm - 1:10pm: Lunch (Marvin Center, J Street Food Court)

1:15pm - 2:45pm: Session 5: Security and Privacy

Chair: Arthur Conklin, University of Houston, Houston, Texas, USA

The Economic Implications of Authoritarian Control of the Internet

Dan Arnaudo, Aaron Alva, Phillip Wood and Jan Whittington

University of Washington, Seattle, Washington, USA

Towards Security and Confidentiality in Aircraft Surveillance

Cindy Finke, Jonathan Butts, Robert Mills and Michael Grimaila

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

Data Handling in the Smart Grid: Do We Know Enough?

Richard Chow, Alvaro Cardenas and Emiliano De Cristofaro

Samsung Electronics R&D, San Jose, California, USA

University of Texas at Dallas, Richardson, Texas, USA

PARC, Palo Alto, California, USA

2:45pm - 3:15pm: Break (Marvin Center, Room 402)

3:15pm - 4:45pm: Session 6: Modeling and Design of Critical Systems

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

DDoS-Attack Resilient MPLS Network Design for Modern Critical Infrastructures

Bela Genge and Christos Siaterlis

European Union Joint Research Centre, Ispra, Italy

Vulnerability Analysis and Modeling for Critical Infrastructure Protection

Stefano Marrone, Roberto Nardone, Annarita Tedesco, Pasquale D'Amore, Valeria Vittorini, Roberto Setola,

Francesca De Cillis and Nicola Mazzocca

Seconda Università di Napoli, Naples, Italy

Università di Napoli Federico II, Naples, Italy

AnsaldoSTS, Genoa, Italy

Università Campus Bio-Medico di Roma, Rome, Italy

Modeling Service Migration and Relocation in Mission-Critical Systems

YanJun Zuo

University of North Dakota, Grand Forks, North Dakota, USA

March 20, 2013 (Wednesday)

8:00am - 8:45am: Breakfast (Marvin Center, Room 402)

8:45am - 10:15am: Session 7: Security Strategies and Systems

Chair: Neil Mitchison, European Union Joint Research Centre, Ispra, Italy

A Decision-Support Platform Based on Interdependency Simulation between Power Grids and SCADA Networks
Abdullah Alsubaie, Antonio Di Pietro, Jose Marti, Pranab Kini, Ting Fu Lin, Simone Palmieri and Alberto Tofani
University of British Columbia, Vancouver, Canada
Universita di Roma Tre, Rome, Italy

Trusted Computing for Critical Infrastructure Protection against Real-Time and Run-Time Threats
Jonathan Jenkins and Mike Burmester
Florida State University, Tallahassee, Florida, USA

Applications and Design of Industrial Control Emulators
Robert Jaromin, Barry Mullins and Jonathan Butts
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

10:15am - 10:30am: Break (Marvin Center, Room 402)

10:30am - 12:00pm: Session 8: Control Systems Security II

Chair: Rajni Goel, Howard University, Washington, DC, USA

A Distributed Real-Time Event Correlation Architecture for SCADA Security
Yi Deng and Sandeep Shukla
Virginia Tech, Blacksburg, Virginia, USA
Virginia Tech Arlington Research Center, Arlington, Virginia, USA

ZigBee Device Verification for Securing Industrial Control and Building Automation Systems
Clay Dubendorfer, Benjamin Ramsey and Michael Temple
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Defensive Rekeying Strategies for Physical-Layer-Monitored Low-Rate Wireless Personal Area Networks
Benjamin Ramsey and Barry Mullins
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

12:00pm - 1:00pm: Lunch (Marvin Center, J Street Food Court)