

Thirteenth Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection

SRI International
1100 Wilson Boulevard, Suite 2800 (28th Floor)
Arlington, Virginia 22209
March 11-12, 2019

March 11, 2019 (Monday)

8:15am - 8:50am: Breakfast

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

David Balenson, Conference General Chair, SRI International, Arlington, Virginia, USA

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

Technical Perspectives on the U.S. Election of 2018

Jeremy Epstein, Deputy Division Director, Division of Computer and Network Systems, National Science Foundation, Alexandria, Virginia, USA

10:10am - 10:40am: Session 1: Themes and Issues

Chair: David Balenson, SRI International, Arlington, Virginia, USA

Quantifying the Cost of Privacy Resulting from Data Breaches

Siddharth Dongre, Sumita Mishra, Carol Romanowski and Manan Buddhadev
Rochester Institute of Technology, Rochester, New York, USA

10:40am - 11:00am: Break

11:00am - 12:00pm: Session 2: Infrastructure Security I

Chair: Scott Graham, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

A Comparative Analysis Approach for Deriving Cybersecurity Failure Scenarios for Natural Gas Distribution Infrastructure

Michael Locasto and David Balenson
SRI International, New York, New York, USA
SRI International, Arlington, Virginia, USA

Cyber Security Modeling of Non-Critical Nuclear Power Plant Digital Instrumentation

Trevor MacLean, Michael Haney and Robert Borrelli
University of Idaho, Idaho Falls, Idaho, USA

12:00pm - 1:00pm: Lunch

1:10pm - 2:10pm: Keynote Lecture

My Experiences Hacking Automobiles, Aircraft and Ships

James Ashworth, Electronics Engineer, U.S. Navy, Patuxent River, Maryland, USA

2:15pm - 3:15pm: Session 3: Network Infrastructure Security

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

A Cyber Vulnerability Assessment of Infiniband Networking

Daryl Schmitt, Scott Graham, Patrick Sweeney and Robert Mills
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Securing Wireless Communications Coprocessors from Attack in the Internet of Things

Jason Staggs and Sujeet Shenoj
University of Tulsa, Tulsa, Oklahoma, USA

3:15pm - 3:45pm: Break

March 11, 2019 (Monday) (continued)

3:45pm - 5:15pm: Session 4: Transportation Infrastructure Security

Chair: Michael Haney, University of Idaho, Idaho Falls, Idaho, USA

Vehicle Identification and Route Reconstruction via TPMS Data Leakage

Kenneth Hacker, Scott Graham and Stephen Dunlap

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

Electronic Control Unit Discrimination Using Wired Signal Distinct Native Attributes

Rahn Lassiter, Scott Graham, Timothy Carbino and Stephen Dunlap

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

Modeling Liability Data Collection Systems for Intelligent Transportation Infrastructure Using Hyperledger Fabric

Luis Cintron, Scott Graham and Douglas Hodson

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

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

5:45pm - 7:45pm: Conference Reception

March 12, 2019 (Tuesday)

8:15am - 8:45am: Breakfast

8:45am - 9:45am: Keynote Lecture

Software Component Transparency, or How I Learned to Stop Worrying and Love the S-BOM

Allan Friedman, Director of Cybersecurity Initiatives, National Telecommunications and Information Administration, Washington, DC, USA

9:45am - 10:00am: Break

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

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

Advances in Cyber-Physical System Honeypots to Enhance Threat Intelligence

Michael Haney

University of Idaho, Idaho Falls, Idaho, USA

Using TLA+ to Model and Check Bump-in-the-Wire Security for Industrial Control Systems

Mehdi Sabraoui, Jeffrey Hieb, Adrian Lauf and James Graham

University of Louisville, Louisville, Kentucky, USA

Defining Attack Patterns for Industrial Control Systems

Raymond Chan, Kam-Pui Chow and Chun-Fai Chan

Singapore Institute of Technology, Singapore

University of Hong Kong, Hong Kong, China

Refined Incident Response Model for Industrial Control System Forensics Based on Historical Events

Ken Yau, Kam-Pui Chow and Siu-Ming Yiu

University of Hong Kong, Hong Kong, China

12:00pm - 12:45pm: Lunch

12:45pm - 1:45pm: Session 6: Infrastructure Security II

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

A Roadmap for Converting an Electric Power Utility Network to Defend Against Crafted Inputs

Michael Millian, Prashant Anantharaman, Sergey Bratus, Sean Smith and Michael Locasto

Dartmouth College, Hanover, New Hampshire, USA

SRI International, New York, New York, USA

An Attack-Fault Tree Analysis of Movable Railroad Swing Bridges

Matthew Jablonski, Yongxin Wang, Chaitanya Yavvari, Zezhou Wang, Xiang Liu, Keith Holt and Duminda Wijesekera

George Mason University, Fairfax, Virginia, USA

Rutgers University, Piscataway, New Jersey, USA

HNTB Corporation, King of Prussia, Pennsylvania, USA

1:45pm - 2:00pm: Break

2:00pm - 3:00pm: Session 7: Infrastructure Security III

Chair: Sujeet Shenoj, University of Tulsa, Tulsa, Oklahoma, USA

Dynamic Repair of Mission-Critical Applications with Runtime Snap-Ins

Peter Brady, Sergey Bratus and Sean Smith

Dartmouth College, Hanover, New Hampshire, USA

Data-Driven Field Mapping of Heterogeneous Security Events for Integrated Monitoring

Seungoh Choi, Yesol Kim, Jeong-Han Yun, Byung-Gil Min and Hyoung-Chun Kim

Affiliated Institute of ETRI, Daejeon, South Korea

3:00pm - 4:00pm: Closing Lecture

Using Open-Source Intelligence to Attack Critical Infrastructure Assets

Sujeet Shenoj, Professor of Computer Science and Chemical Engineering, University of Tulsa, Tulsa, Oklahoma, USA