March 14, 2022 (Monday)

08:50am - 09:00am: Welcoming Remarks and Logistics

09:00am - 10:00am: Session 1
Chair: David Balenson, SRI International, Arlington, Virginia, USA
Are European Security Policies Ready for Advanced Metering Systems with Cloud-Based Back-Ends?
Øyvind Toftegaard, Janne Hagen and Bernhard Hämmerli
Norwegian University of Science and Technology, Gjøvik, Norway
Norwegian Energy Regulatory Authority, Oslo, Norway
Norwegian Water Resources and Energy Directorate, Oslo, Norway
University of Oslo, Oslo, Norway
Lucerne University of Applied Sciences, Lucerne, Switzerland
Leveraging Confidential Computing to Enable Secure Information Sharing
Samuel Chadwick, Scott Graham, James Dean and Matthew Dallmeyer
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

10:00am - 10:50am: Keynote Lecture
National Cyber Resilience and Roles for Public and Private Sector Stakeholders
Neal Ziring, Technical Director, Cybersecurity Directorate, National Security Agency, Fort Meade, Maryland, USA

10:50am - 11:00am: Break

11:00am - 12:30pm: Session 2
Chair: Leon Strous, Senior Policy Advisor, De Nederlandsche Bank, Amsterdam, The Netherlands
Radio Frequency Identification and Tracking of Vehicles and Drivers by Exploiting Keyless Entry Systems
James Ashworth, Jason Staggs and Sujeeet Shenoi
University of Tulsa, Tulsa, Oklahoma, USA
Improving WirelessHART Trust in Critical Infrastructure Applications
Matthew Maier, Addison Betances, Hunter Hayden, Michael Temple and Matthew Fickus
Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio, USA
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA
Securing InfiniBand Traffic with the Bluefield-2 Data Processing Unit
Noah Diamond, Scott Graham and Gilbert Clark
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA
Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio, USA

12:30pm - 01:15pm: Break

01:15pm - 02:15pm: Keynote Lecture
Defenseless in Depth
Jonathan Butts, Co-Founder, QED Secure Solutions, Coppell, Texas, USA
March 14, 2022 (Monday)

02:15pm - 03:15pm: Session 3
Chair: Scott Graham, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Attack-Defense Modeling of Material Extrusion Additive Manufacturing Systems
Alyxandra Van Stockum, Elizabeth Kurkowski, Tiffany Potok, Curtis Taylor, Joel Dawson, Mason Rice and Sujeet Shenoi
University of Tulsa, Tulsa, Oklahoma, USA
Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

Low-Magnitude Infill Structure Manipulation Attacks on Fused Filament Fabrication Printers
Muhammad Rais, Muhammad Ahsan, Vaibhav Sharma, Radhika Barua, Robert Prins and Irfan Ahmed
Virginia Commonwealth University, Richmond, Virginia, USA
James Madison University, Harrisonburg, Virginia, USA

03:15pm - 03:30pm: Break

03:30pm - 04:30pm: Session 4
Chair: Tricia Schulz, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

On the Importance of Cyber Security Analysis in the Operational Technology System Lifecycle
Laura Tinnel and Ulf Lindqvist
SRI International, Menlo Park, California, USA

A Backfit Approach for Trusted Virtualization-Based Programmable Logic Controller Resilience
James Cervini, Daniel Muller, Alexander Beall, Joseph Maurio, Aviel Rubin and Lanier Watkins
Johns Hopkins University, Baltimore, Maryland, USA
Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA
March 15, 2022 (Tuesday)

09:00am - 10:00am: Session 5
Chair: Richard George, Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA

A Secure Deployment Checklist for Building Management Systems
Raymond Chan, Wye Kaye Yan, Alaric Tang, Jingquan Chen and Malcolm Low
Singapore Institute of Technology, Singapore, Singapore
Firefish Communications, Singapore, Singapore

A High Interaction Physics-Aware Industrial Control System Honeypot for Production Environments
Kirishikesan Kannan, Ayesh Hallawaarachchi, Gayakantha Jayakody and Chandana Gamage
University of Moratuwa, Moratuwa, Sri Lanka

10:00am - 10:15am: Break

10:15am - 11:15am: Keynote Lecture
Drivers and Research Challenges for Assured Critical Infrastructure
Andy Oak, Homeland Protection Mission Protection Mission Area Executive, Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA

11:15am - 12:15pm: Session 6
Chair: Janne Hagen, Norwegian Water Resources and Energy Directorate, Oslo, Norway; and University of Oslo, Oslo, Norway

Manipulation of G-Code Toolpath Files in 3D Printers: Attacks and Mitigations
Elizabeth Kurkowski, Alyxandra Van Stockum, Joel Dawson, Curtis Taylor, Tricia Schulz and Sujeet Shenoi
University of Tulsa, Tulsa, Oklahoma, USA
Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

Detecting Printed Part Anomalies Induced by Cyber Attacks on a Powder Bed Fusion Additive Manufacturing System
Elizabeth Kurkowski, Mason Rice and Sujeet Shenoi
University of Tulsa, Tulsa, Oklahoma, USA
Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

12:15pm - 01:00pm: Break

01:00pm - 02:00pm: Keynote Lecture
Secure Manufacturing and Supply Chain Networks: Challenges and Opportunities
Gabriela Ciocarlie, Associate Professor of Electrical and Computer Engineering, University of Texas at San Antonio, San Antonio, Texas USA; and Vice President for Securing Automation and Secure Manufacturing Architecture, CyManII, San Antonio, Texas, USA

02:00pm - 03:00pm: Session 7
Chair: Sujeet Shenoi, University of Tulsa, Tulsa, Oklahoma, USA

Boot Image Encryption on the Talos II
Calvin Muramoto, Scott Graham and Stephen Dunlap
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

Digital Twins in the Energy Sector
Roxanne Holden
Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA