Monday (Feb 1- Day 1)

Virtual Tutorial Workshops

0800  Tutorial Workshop I- **T&E of HEL Systems** (Dr. Larry McKee) *(DETE Room 1)*
Tutorial Workshop II- **T&E of HPM Systems** (Jeff Schleher) *(DETE Room 2)*
Tutorial Workshop III- **Intro to DoD T&E Process** (Harry Sinsheimer) *(DETE Room 3)*
Tutorial Workshop IV- **Introduction to Cybersecurity T&E** (Pete Christensen) *(DETE Room 4)*
Tutorial Workshop V- **TENA and JMTC for Distributed Systems Engineering** (Gene Hudgins) *(DETE Room 5)*

1200  Lunch on Own

1300  Tutorial Workshop VI – **Design of Tests for Transitioning DE Weapon Systems to Acquisition Programs for Warfighter Fielding** (Robert Newton/ Dan Isbell) *(DETE Room 1)*
Tutorial Workshop VII – **Combat Systems Engineering of Directed Energy Weapons** (Doug Nelson) *(DETE Room 2)*
Tutorial Workshop VIII- **HPM M&S Tools for T&E** (J Mark DelGrande) *(DETE Room 3)*
Tutorial Workshop IX- **T&E in Support of Prototyping & Experimentation** (Al Sciarretta) *(DETE Room 4)*
Tutorial Workshop X- **Predicting & Validating Prototyping Performance** (Mark Kiemele) *(DETE Room 5)*

Tuesday (Feb 2- Day 2)

AM Virtual Plenary Session *(Open)*

0800  **Welcome:** Mr. Edward Trzcienski, 2021 Conference Program Co-Chair
Posting of the Colors and National Anthem
**Remote Video Remarks** by **U.S. Senator Martin Heinrich (D-NM)**

0815  **Opening Remarks:** ITEA President, Pete Crump
DEPS Executive Director, Mr. Mark Neice

0830  **Major General James R. Sears Jr. - Commander, Air Force Operational Test and Evaluation Center (AFOTEC) Kirtland Air Force Base, New Mexico-** Confirmed

0915  **John M. (Jack) Hedenberg - Lead PM for DE, USAF (AFLCMC/XA) Architecture & Integration Directorate)**- Confirmed

1000  Break
Metrology and Calibration (METCAL) Program: Measuring the Measurer - Dr. Subrata Sanyal, METCAL Chief Scientist; Navy Lead for ATWG, Navy METCAL Program, Naval Surface Warfare Center (NSWC) Corona Division- Confirmed

NIST on a Chip: Technology Overview, Cross-Agency Community of Support - Ms. Barbara Goldstein – Program Manager, NIST on a Chip (NoaC); Associate Director, Physical Measurement Laboratory, National Institute of Standards and Technology (NIST)- Confirmed

Dr. Michael Zmuda- Chief of Staff, White Sands Test Center- Confirmed

Kathi Swaggerty brief intro to STEAM event- visit Accelevents page for pictures and videos
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Mr. Mark Henderson– Conference Technical Program Chair: Announcements and Introduction to Afternoon Technical Sessions, Security, General Log-in Procedures

Lunch

Exhibit Hall hours begin (1200-1700 MST)

Technical Track Sessions

T&E Capabilities for Directed Energy Systems (DETE Room 1)
Session Chair: Dr. Diana Loree

(Limited Distribution/ Export Controlled/ Open)

Aero-Optical Isolation Measurements for Aircraft Laser Wind Tunnel Tests (D/Export Controlled) Dr. Matthew R. Whiteley, MZA Associates Corporation

Development and Test of a Tethered Flying Atmospheric Monitoring System (D/Export Controlled) Dr. Mike Kranz, Kratos Defense, Engenious Micro

Directed Energy Systems Integration Laboratory - MILCON P777 (D) Marcos Gonzalez, NSWC Port Hueneme, CA

BlueHalo High Energy Laser UAS Target Board Program Update (D) Andrew Hall, AEGis Technologies, A Blue Halo Company

Break

Enhanced Sensor Network Array (ESNA) Project (C) Dustin Jones, Verus Research
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1600- Vertical Sensor Network Array (VSNA) Project (C) Laury Decker, Verus Research

1630- Experimental Procedure for Electromagnetic Characterization of HPM Target Structures (A) Leonardo Rossetti, Naval Research Lab

1700- Conference ends for the day

Atmospheric Effects (DETE Room 2)
Session Chair: Dr. Steve Hammel

(Limited Distribution/ Export Controlled)

1300- Navy’s Path Characterization System for HEL Systems (D/Export Controlled) Kyle Drexler, Naval Information Warfare Center Pacific

1330- Path Characterization System- Field Test and Sensors - NIWC Pacific Seaside Optical Test Range (SeaOpTR) (D/ Export Controlled) Joshua Gorden, NIWC Pacific

1400- Path Characterization System- Field Test and Sensors – Overview (D) Galen Cauble, NIWC Pacific

1430- Previous presentation by Galen Cauble, NIWC Pacific continues.

1500- Break

1530- Development and Testing of Airborne and Ground Based Nodal Atmospheric Characterization Tools (C/Export Controlled) Alex Clark, AEgis Technologies, A Blue Halo Company

1600- Optical Turbulence Measurement Technique Derived from LIDAR-measured Meteorological Profiles (C/Export Controlled) Dr. Leda Sox, Georgia Tech Research Institute

1630- Maritime aerosol extinction and absorption for Test and Evaluation (C) John Stephen DeGrassie, NIWC Pacific

1700- Conference ends for the day

HPM/HPRF Sensors (DETE Room 3)
Session Chair: Jeff Schleher

(Limited Distribution/ Export Controlled)

1300- PEO STRI High Power Radio Frequency Sensors Projects Successes and Failures (C) Jeffrey Schleher, American Systems
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1330- Frequency and temperature dependence of a non-intrusive three-axis electro-optic field sensor for HPM, HPRF, and EMP applications (D/Export Controlled) Dr. Dong Ho Wu, Naval Research Laboratory

1400- Advanced Beam Control Technologies Anchored with Live Test Data (D) Paul Shattuck, Lockheed Martin


1500- Break

1530- Airborne High-Power Microwave Instrumentation (AirHI) Project (C/Export Controlled) John Sanchez, Verus Research

1600- Joint Agile Non-kinetic Upgradeable System (JANUS) Project (C) John Osowski, Verus Research

1700- Conference ends for the day

Wednesday (Feb 3- Day 3)
AM Virtual Plenary Session (Open)

0800 Welcome: Whitney Winchester, 2021 Joint Conference Program Co-Chair
Posting of the Colors and National Anthem
Introduction for the STEAM event approach for this year

0815 Mr. George Rumford - Principal Deputy Director, Test Resource Management Center- Confirmed

0900 Dr. Tom Karr - Former Director for Directed Energy, OSD R&E - Principle Owner at Alamo Scientific, LLC - Confirmed

0945 Break

1015 Mr. Eric Buechele - AFRL/RD Chief Engineer- Confirmed

1100 Virgin Galactic Test Pilot- Not confirmed

1130 STEAM Competition Presentation/Recognition – Steve Woffinden and Kathi Swaggerty 
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1200 Dr. Tim Andreadis– Conference Technical Program Chair: Announcements and Introduction to Afternoon Technical Sessions, Security, Log-in Process, any Program Changes
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1200 Lunch

Exhibit Hall hours begin (1200-1700 MST) STEAM Videos will be posted

1300 Technical Track Sessions

Measurement and Calibration (DETE Room 1)

Session Chair: Dr. Subrata Sanyal

(Limited Distribution/Open)

1300- Initiating METCAL support of DoD HPM and HPRF Weapons (C) Ignacio Espinosa, NSWC Corona, CA

1330- Atmospheric characterization for DE propagation: METCAL support (C) Kevin Janosky, NSWC Corona, CA

1400- On instrumentation SI traceability and M&S development, verification, and validation for DE applications (C) Dr. Joseph Fiordilino, NSWC Corona, CA

1430- Establishing an SI traceable standard for optical atmospheric scintillation measurements (A) Dr. Brian G. Alberding, NIST, Boulder, CO

1500- Break

1530- NASA Langley’s LiDAR Capabilities for Atmospheres and Ocean (A) Dr. Chris Alan Hostetler, NASA Langley Research Center, Hampton, VA

1600- High energy laser metrology at the National Institute of Standards and Technology (A) Dr. Paul A. Williams, NIST, Boulder, CO

1630- Rydberg Atom-Based Sensors for Weak-Field/ High-Power Detection and Waveform Characterization (A) Dr. Christopher Holloway, NIST

1700- NOAA’s Application of Doppler LiDARs: Airborne and Ship Based Systems (A) Dr. Alan Brewer, NOAA Chemical Sciences Laboratory, Boulder, CO

1730- Conference ends for the day

Designing Experimentation with Modeling & Simulation (DETE Room 2)

Session Chair: Pat Bartlett

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1300- **Anchoring Modeling and Simulation Techniques to Developmental and Operational Testing (D/Export Controlled)**  
*Matthew Selleck, GTRI*

1330- **Scaling HEL Beam Diagnostics with the Small Measurement and Analysis System (D/Export Controlled)**  
*John Mason, Radiance Technologies*

1400- **Turbulence Forecasting for DE Test Planning (D/Export Controlled)**  
*Dr. Yakov Diskin, MZA Associates Corporation*

1430- **Demonstrating the Full Kill Chain Utilizing the ATHENA Laser Weapon System (D/Export Controlled)**  
*Paul Shattuck, Lockheed Martin*

1500- Break

1530- **Modeling and Simulation of Blue Aircraft Survivability to HEL Irradiation (MSAS)- Testing Update and Preliminary Results (C/Export Controlled)**  
*Kyle Brady, SURVICE Engineering*

1600- **sUAS DEW Profiler for DE Mission Planning: Field Test and Operations (C/Export Controlled)**  
*Alex Clark, AEgis Technologies, A Blue Halo Company*

1630- **A Reflected Irradiance Measurement System (RIMS) to support predictive modeling of ocular hazards (A)**  
*Dr. Michael Zintl, SARA*

1730- Conference ends for the day

**Thursday (Feb 4- Day 4)**

**HEL Sensors & Sources (DETE Room 1)**  
*Session Chair: Roger Russell*

*(Limited Distribution/ Export Controlled/ Open)*

0830- **Laser Integrated Diagnostic Suite (LIDS) Program Update (C/Export Controlled)**  
*Isaiah Marquez, AEgis Technologies, A Blue Halo Company*

0900- **Design and development of a beam profiling system for range testing of 150 kW class laser systems (C/Export Controlled)**  
*Dr. Jim Luke, BlueHalo Company*

0930- **Design and development of a ball calorimeter for range testing of 150 kW class laser systems (C/Export Controlled)**  
*Dr. Jim Luke, BlueHalo Company*

1000- Break
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1030- Measuring HEL System Wavefront with a Big Aperture Shack-Hartman Wavefront Sensor (A) Dr. Elijah Dale, Radiance Technologies

1100- Mesoscale Weather Support for Directed Energy (A) Angela Ulate Medrano, University Corporation for Atmospheric Research

Implications of Using Conceptual, Developmental, and Operational Prototypes (DETE Room 1)
Session Chair: Dr. Chris Valenta
(Limited Distribution/ Export Controlled)

1130- GDS-like Far Field Power-in-Bucket Measurements with the Field Diagnostic System (D/Export Controlled) Brett Hokr, Radiance

1200- Measurements and Analysis of Optical Turbulence Onboard Naval Vessels (D) Dr. Joseph Blau, Naval Postgraduate School

1230- Conference adjourns

HPM/HPRF Sources (DETE Room 2)
Session Chair: Jeff Schleher
(Limited Distribution/ Export Controlled)

0830- PEO STRI High Power Radio Frequency Sources Projects Successes and Failures (C) Jeffrey Schleher, American Systems

0900- Development and Test of a Tethered sUAS for HPM Field Characterization (D/Export Controlled) Dr. Mike Kranz, Kratos Defense, Engenious Micro

0930- New Ku-Band Test Capabilities at WSMR's SVAD (C/Export Controlled) Isaac Blesener, Sem-Sol

1000- Break

1030- High Average Power Pulsed S-Band Surrogate Source (HAPP SBSS) (C/Export Controlled) Jonathon Heinrich, Verus Research

1100- In Chamber S-Band Test Source for HPM Effects Testing (C/Exp. Controlled) Dr. Peter Duselis, Sem-Sol

1130- HPM Sensor on Instrumented sUAS Update (C/Export Controlled) Mark Henderson, AEgis Technologies, A Blue Halo Company

1230- Conference Adjourns