

2022 Joint Conference on T&E Support to Prototyping and Experimentation

1/20/21 – Revision 23

Monday (Jan 31 - Day 1)

*****All times are listed in MST*****

Tutorial Workshops

0700 Registration

Marriott Room TBD:

- 0800 Tutorial Workshop - **T&E of HEL Systems (Lim Dis C) (Steiner)**
- 1200 Lunch on Own
- 1300 Tutorial Workshop - **Intro to DoD T&E Process (Lim Dis D) (Neice)**

Marriott Room TBD:

- 0800 Tutorial Workshop – **T&E of HPM Systems (Lim Dis C) (Schleher)**
- 1200 Lunch on Own
- 1300 Tutorial Workshop – **DE Design of Test (Lim Dis D) (Isbell/Newton)**

Marriott Room TBD:

- 0800 Tutorial Workshop – **Introduction to Cybersecurity T&E (Open) (Virtual)**
- 1200 Lunch on Own
- 1300 Tutorial Workshop - ~~**TRMC Solutions for Distributed T&E Experimentation Engineering**~~
(Cancelled)

Tuesday (Feb 1 - Day 2)

0700 Registration Desk Opens

Continental Breakfast in the Exhibit Area

- 0800 **Welcome**
Mr. Edward Trzcinski, 2022 Conference Program Co-Chair
Posting of the Colors and National Anthem
- 0815 Opening Remarks: ITEA President, Bruce Einfalt – **(Confirmed)**
DEPS Executive Director, Mr. Mark Neice
- 0830 U.S. Senator Martin Heinrich (D-N.M.) (Video)
- 0835 George Rumford, Deputy Director of Test Resource Management Center **(Invited)**
- 0915 Marcos Gonzales, Directed Energy Systems Integration Lab (DESIL) Project Lead, Naval Surface Warfare Center Port Hueneme Division **(Confirmed)**
- 1000 **Break in the Exhibit Area**

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1030 Mr. Jerry Tyree, Deputy Commander / Tech Director of White Sands Test Center, Army Test and Evaluation Command (**Confirmed**)

1115 Maj. Gen. James Sears, AFOTEC Commander (**Confirmed**)

1200 Mr. Mark Henderson– Conference Technical Program Co-Chair: Announcements and Introduction to Afternoon Technical Sessions, Introduction of Lunch Speaker

1200 **Lunch in Cancun**
STEAM Speaker

1300 **Technical Track Sessions**

T&E Capabilities for Directed Energy Systems 1 (*Tampico*)

Session Chair: Mr. Alex Clark (BlueHalo)

(Lim Dis/Export Controlled to Open)

1300 – Deployment of DELTA-Wx Deep-Learning Field Terminals for HEL Weapon Prototype Testing and Experimentation (Unclassified/Dist D/Export Controlled) Dr. Matthew Whiteley, MZA Associates Corporation

1330 - Scaling HEL Characterization with the Small Measurement and Analysis System (SMASH) (Unclassified/Dist D/Export Controlled) Dr. John Mason, Radiance Technologies

1400 – Differences between KE testing and DE testing (Unclassified/Dist D/Export Controlled) Dr. David Loomis, DNL Consulting

1430 – HEL-PETT M&S software platform for predictive performance analysis of HEL DE systems (Unclassified/Dist C/Export Controlled) Stephen Nowalk, II-VI Aerospace & Defense

1500 - Break in the Exhibit Area

1530 – Directed Energy Systems Integration Laboratory - MILCON P777 (Unclassified/Dist D) Marcos Gonzalez, Naval Surface Warfare Center, Port Hueneme Division

1600 - Recoverable, Reusable Airborne Engagement (RRAE) (Unclassified/Dist C/Export Controlled) William White, Verus Research

1630 – Remote Target Status Sensor (RTSS) (Unclassified/Dist C) James Barlow, Verus Research

1700 - Session ends for the day

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HPM Sensors and Sources 1 (*Yucatan*)

Session Chair: Mr. Jeff Schleher (American Systems)
(*Limited Distribution/Export Controlled*)

1300 – HPM Sensor on Instrumented sUAS Update (Unclassified/Dist C/Export Controlled) Mark Henderson, BlueHalo

1330 – Development and Test of a UAS-Borne HPM Acquisition and Recording Capability (HARC) (Unclassified/Dist D/Export Controlled) Michael Kranz, Kratos Defense

1400 - HPM Beam Evaluation Tool (HBET) (Unclassified/Dist C) Laury Decker, Verus Research

1430 - Directed Energy Test Science and Technology High Frequency High Power Microwave Diagnostic Suite (HF-HDS) (Unclassified/Dist C) Dr. Marcus Gagliardi, Verus Research

1500 - Session ends for the day

1500 – Break in the Exhibit Area

Atmospheric Characterization & Effects 1 (*Yucatan*)

Session Chair: Dr. Steve Hammel (NIWC Pacific)
(*Limited Distribution/Export Controlled to Lim Dis C*)

1530 - Development and Test of a Tethered Flying DE Atmospheric Monitoring and Scoring System (Unclassified/Dist D/Export Controlled) Michael Kranz, Kratos Defense

1600 - ATMOS: Atmospheric Turbulence Measurement Event (Unclassified/Dist D/Export Controlled) Bo Henderson, Scientific Inc.

1630 – Propagation path characterization with the High Energy Laser Performance Estimation Test Technology (HEL-PETT) computational platform based on numerical weather prediction data (Unclassified/Dist C/Export Controlled) Svetlana Lachinova, II-VI Aerospace & Defense

1700 - The High Energy Laser Atmospheric Characterization System (HACS) – Real-time atmospheric characterization for HEL Test and Evaluation support (Unclassified/Dist C) Don Harris, Georgia Tech Research Institute (GTRI)

1730 - Session ends for the day

1730- Tuesday evening Reception with Exhibitors

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Wednesday (Feb 2 - Day 3)

0700 Registration Desk Opens

Continental Breakfast in the Exhibit Area

0800 Welcome: Ms. Whitney Winchester, 2022 Joint Conference Program Co-Chair
Posting of the Colors and National Anthem
Introduction and Sendoff for the STEAM Competition Teams

0815 **STEAM Competition** - Begins in Room TBD
Participating schools include:

Middle Schools

Cien Aquas International School
Bosque School

High Schools

Albuquerque High School
West Mesa High School
Technology Leadership High School (TBD)
Albuquerque Institute for Mathematics and Science (AIMS)

0815 Dr. Kelly Hammett, Director, Air Force Research Laboratory Directed Energy Directorate
(Confirmed)

0900 **Break – Extended, Attendees to walk the STEAM Competition in (Location TBD)**

1030 **T&E Best Practices for DE Systems** (*Limited Distribution*) Dr. Sean Ross and Bryan Kelchner

The Test and Evaluation team of the AIAA-DEPS committee will conduct a workshop on Test and Evaluation best practices for airborne laser systems and we want your help and insight! We have developed a taxonomy ranging from subcomponent to flight systems and using facilities from M&S to large test ranges. The document includes the full range of requirements that can be levied on a system from platform loads to system performance. Goal is to publish a document which can become the nucleus of an industry T&E standard. We have identified the full taxonomy but have only written about a third of the sections so far. What we are hoping for is audience feedback on what we may have missed and volunteers and nominations of who can help us write the rest of the sections. This will be a real-time working session.

1200 Mark Henderson – Conference Technical Program Co-Chair: Announcements and Introduction to Afternoon Technical Sessions

1200 **Lunch in Cancun**
STEAM Co-Chairs, Announcement of STEAM Competition Awards

1330 **Technical Track Sessions**

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HPM Sensors and Sources 2 (*Yucatan*)

Session Chair: Mr. Jeff Schleher (American Systems)

(Limited Distribution C/ Export Controlled)

1330 – Update and Delivery of an Advanced Wide Band Test System for Supporting Test and Evaluation (Unclassified/Dist C/Export Controlled) Matthew Lara, APELC

1400 – Joint Agile Non-kinetic Upgradeable System (JANUS) Project (Unclassified/Dist C/Export Controlled) John Osowski, Verus Research

1430 - High Average Power Pulsed (HAPP) Project (Unclassified/Dist C/Export Controlled) Jonathon Heinrich, Verus Research

1500 - Break in the Exhibit Area

1530 - S-Band Test and Evaluation Source (STES) (Unclassified/Dist C/Export Controlled) Daniel Szenasi, Verus Research

1600 - Status Update: Free Field Test Source (FFTS) Project (Unclassified, Dist C) Matt Domonkos, Verus Research

1630 - New Sources - Supporting MIL STD 464C and 464D Testing (Unclassified/Dist C) Jeffrey Schleher, American Systems

1700 - Session ends

Designing Experimentation with Modeling & Simulation (*Taos*)

Session Chair: Dr. Roger Campbell Jr. (Georgia Technology Research Institute (GTRI))

(Open to Limited Distribution/Export Controlled)

1330 – Designing and Implementing DEW Target Acquisition and Engagement Model for Prototype Development (Unclassified/Dist D/Export Controlled) Roger Campbell, Georgia Technology Research Institute (GTRI)

1400 – Creating a Predictive Modeling and Simulation Baseline Method for the Directed Energy Weapons Mission Analysis Tool Set (DEWMATS) (Unclassified/Dist D/Export Controlled) Daniel Levy, Georgia Technology Research Institute (GTRI)

1430 - Nexus: A DoD Web Application for Optical Propagation Analysis, Operations, and Test Planning (Unclassified/Dist D/Export Controlled) Yakov Diskin, MZA Associates Corporation

1500 - Break in the Exhibit Area

1530 - Testing an Optical Inertial Reference Unit (OIRU) (Unclassified/Dis D/Export Controlled) Edwin Ahn, Air Force Research Laboratory

1600 - Validation and development of models for near field laser propagation through realistic turbulence: theory, experiments, and models (Unclassified/Dist A) Diego Donzis, Texas A&M University

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1630 – Session ends/ Conference ends for the day

Measurement and Calibration (*Tampico*)
Session Chair: Dr. Steve Hammel (NIWC Pacific)
(Lim Dis/Export Controlled to Open)

1330 – **Comparison of High Energy Laser Primary Standards (Unclassified, Dist C, Export Controlled)** Thomas Jenkins, Air Force Life Cycle Management Center (AFLMC/AFMETCAL)

1400 – **New tools and opportunities provided by the fourth generation of optics for metrology (Unclassified/Dist A)** Dr. Nelson Tabiryan, BEAM Engineering for Advanced Measurements Co.

1430 - Session ends / Intro for next session in same room begins

Atmospheric Characterization & Effects 2 (*Tampico*)
Session Chair: Dr. Steve Hammel (NIWC Pacific)
(Limited Distribution/Export Controlled to Open)

1435 - **Verification and Validation Efforts for sUAS DEW Profiler (Unclassified/Dist D)** Alex Clark, BlueHalo

1505 – **Use of aerosol extinction and optical turbulence from NWP enhanced with nodal/point sonic anemometer and particle count measurements for HEL propagation (Unclassified/Dist C)** Dr. Steven Fiorino, Air Force Institute of Technology

1535 – Session Ends / Transition to virtual

Atmospheric Characterization & Effects 3 (*Virtual Presentations Session in Tampico*)
Session Chair: Dr. Steve Hammel (NIWC Pacific)
(Limited Distribution/Export Controlled to Open)

1550 - **Atmospheric characterization efforts for laser weapon testing on the Potomac River Test Range (PRTR) at the Naval Surface Warfare Center Dahlgren Division (NSWCDD) (Unclassified/Dist D/Export Controlled)** Dr. Evan Bates, Naval Surface Warfare Center Dahlgren Division (NSWCDD)

1620 - **Atmospheric and Propagation Measurements on Churchill Test Range (Unclassified/Dist C)** William Filkoski, Naval Surface Warfare Center Dahlgren Division (NSWCDD)

1650- **Near Surface Maritime Atmospheric Measurements for LASER Test and Evaluation (Unclassified/Dis A)** Roberto Garcia, Naval Air Warfare Center, Weapons Division (NSWCDD)

1720 – Conference ends for the day

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Thursday (Feb 3)

0700 Registration Desk Opens
Continental Breakfast

0800 AM Technical Track Sessions

Measurement and Calibration 2 (*Virtual Presentations Session in Tampico*)

Session Chair: Dr. Subrata Sanyal (NSWC Corona)

(Lim Dis/Export Controlled to Open)

0800 - Navy METCAL and ATWG: DE Measurement Confidence (Unclassified, Dist A) Dr. Subrata Sanyal, Naval Surface Warfare Center Corona Division (NSWC Corona)

0820 – Characterization of High Energy Laser Systems using External and Internal Photodiode Power Monitors (Unclassified, Dist A) Dr. Kyle Rogers, National Institute of Standards and Technology (NIST)

0840 – Demonstration of High-Accuracy Characterization of Combined Laser Beams for Operation at 100 kW and Beyond (Unclassified, Dist A) Dr. Paul Williams, National Institute of Standards and Technology (NIST)

0900 – Atom-based RF Field Sensors (Unclassified, Dist A) Dr. Christopher Holloway, National Institute of Standards and Technology (NIST)

0920 - NIST RF Field Probe Calibration Facilities (Unclassified, Dist A) Dr. Matthew Simons, National Institute of Standards and Technology (NIST)

0940 - Open-Path, Cavity Ringdown Spectrometry Analyzer that Provides an Accurate Measurement of Aerosol Optical Extinction with Periodic Self-Calibration (Unclassified, Dist A) Dr. Manish Gupta, Nikira Labs Inc.

1000 – Break

1020- Establishing METCAL Support for Atmospheric Characterization Instruments for HEL propagation (Unclassified, Dist C) Kevin Janosky, Naval Surface Warfare Center Corona Division (NSWC Corona)

1040 - DoD HPM and HPRF Weapons: METCAL support (Unclassified, Dist C) Ignacio Espinosa, Naval Surface Warfare Center Corona Division (NSWC Corona)

1100 – Quick break / Transition to next session

HPM Sensors and Sources 3 (*Virtual Presentations Session in Tampico*)

Session Chair: Mr. Jeff Schleher (American Systems)

(Limited Distribution/Export Controlled)

1110 – HPM T&E field tests using nonintrusive, three-axis electro-optic field probes (Unclassified/Dist C/Export Controlled) Dr. Dong Ho Wu, Naval Research Laboratory

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1130 – Time- vs. Spectral-Domain Magneto-Optic Sensing for HEMP- and HPM-Induced Current Effects (Unclassified/Dist C/Export Controlled) John Whitaker, Advanced Fiber Sensors, Inc.

1150 – Session ends

Implications of Using Conceptual, Developmental, and Operational Prototypes (Yucatan)

Session Chair: Dr. Chris Valenta (Georgia Technology Research Institute (GTRI))
(Limited Distribution/Export Controlled to Open)

0800 - Integrating Airspace Awareness for Enhanced DE Performance (Unclassified/Dist D/Export Controlled)
Samuel Gutierrez, Gryphon Technologies, DE-JTO SETA

0830 - WSMR 19 Thermal Blooming: LBADS Measurements vs HELCOMES and ACS Analysis (Unclassified/Dist D/Export Controlled) Bo Henderson, Scientic Inc.

0900 - Dual Receiver Turbulence Lidar (Unclassified/Dist C/Export Controlled) Dr. Sivanesan Ponniah, Intellisense Systems

0930 - Counter Directed Energy Warfare Strategies, Solutions and Tactics – Pathways for Experimentation and Prototyping (Unclassified/Dist D) Dr. Bonnie Johnson, Naval Postgraduate School

1000 - Design, Build, & Operation of a Recoverable Surrogate MANPADS for Testing Aircraft Survivability Equipment (Unclassified/Dist A) Anthony Lanza, BlueHalo

1030 – Session ends

1200 – Conference ends

HEL Sensors & Sources (Taos)

Session Chair: Mr. Roger Russell (BlueHalo)
(Limited Distribution/Export Control)

0800 - Design and development of a ball calorimeter for range testing of 150 kW class laser systems (Unclassified/Dist C/Export Controlled) Dr. Jim Luke, BlueHalo

0830 - Design and development of a beam profiling system for range testing of 150 kW class laser systems (Unclassified/Dist C/Export Controlled) Andrew Hall, BlueHalo

0900 - Expanding Capabilities of HEL Target Boards to Meet Optical Dazzler Laser Testing Needs (Unclassified, Dist C, Export Controlled) Caleb Hoover, SemQuest

0930 - Session ends

1200 Conference ends

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Host Hotel

Albuquerque Marriott Pyramid North
5151 San Francisco Road NE
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