



2020 DE Systems Symposium

November 16-19 2020 (MST)

Virtual Event Final Agenda

Monday November 16

Virtual Professional Development Short Courses

AM (0800-1200 MST)

- **DEPS 1- Systems Engineering for DE Systems (C)** Bill Decker
- ~~**HEL Modeling & Effects (C)**~~ Linda Lamberson **Cancelled**
- **DEPS 2- HPM Modeling (C)** Jason Hammond & Peter Mardahl
- **DEPS 3- Introduction to Counter DEW (D)** Keith Slinker

PM (1300-1700 MST)

- **DEPS 1- Design of Tests for Transitioning DE Weapon Systems for Warfighter Fielding (D)** Robert Newton & Dan Isbell
- **DEPS 2- HPM DEW and Their Effects (C)** John Tatum
- **DEPS 3- Atmospheric Propagation (C)** Steve Fiorino & Jaclyn Schmidt

Tuesday November 17

AM Virtual Plenary Session (Limited Distribution D- **DEPS 1**)

0830- 0900 MST Advancing HEL Capabilities – What is OUSD (R&E) Doing? *Dr. James Trebes – Acting Principal Director, Directed Energy, OUSD R&E*

0900- 0930 MST Navy Directed Energy Programs – *Capt. William Harkin – Division Director, Weapons Branch N96, US Navy*

0930- 1000 MST Update on Army DE Programs – *Dr. Craig Robin – Deputy Director, DE Project Office, US Army Rapid Capabilities & Critical Technology Office*

1000-1030 MST **Break**

1030- 1100 MST MDA Update – *Mr. Rich White – Program Director, Sensors & Directed Energy, Missile Defense Agency*

November 16, 2020

Rev 30

1100- 1130 MST AFLCMC Role in Directed Energy – Mr. Jack Hedenberg – Deputy, Directed Energy, AF Life Cycle Mgt Center

1130-1200 MST JIFCO – Col. Wendell Leimbach, Jr., USMC – Director, Joint Intermediate Force Capabilities Office

1200-1300 MST Lunch break

PM

1300- 1700 MST Virtual exhibit hall hours

Wednesday November 18

AM Virtual Technical Breakout Sessions (30-minute presentations = 25 min. brief + 5 min. Q&A)

Air Defense

DEPS 1

0830-0900 MST Self-protect High Energy Laser Demonstrator (SHIELD) Program Update (D/Export Controlled) *Millay Petersen, AFRL/RDLA*

0900-0930 MST SHIELD: Aerodynamic Effects and Jitter Mitigation Approach for High Energy Lasers in the Transonic Flight Regime (D/Export Controlled) *Edwin Ahn, AFRL/RDLA*

Operational Requirements and Mission Level Analysis

DEPS 1

0930-1000 MST Electric Power Generation and Distribution Considerations For 300KW-Class HEL Weapon Integration on DDG Flight 2A's (D/Export Controlled) *Dr. John Heinzl, NSWC Philadelphia*

1000-1030 MST Break

1030-1100 MST Thermal Management Considerations For 300KW-Class HEL Weapon Integration on DDG Flight 2A's (D/Export Controlled) *Dr. Kevin Woods, NSWC Philadelphia*

1100-1130 MST General HEL Weapon Integration Considerations for Navy Combatants (D/Export Controlled) *Ms. Erin Kampschroer, PEO Ships*

1130-1200 MST Counter Directed Energy Weapons and the Defense of Naval Unmanned Aerial Vehicles (A) *Dr. Bonnie Johnson, Naval Postgraduate School*

1200-1230 MST HEL Wavelengths and Platform Locations! What are the Impacts? (A) *Dr. James Davis, Booz Allen Hamilton*

1230-1330 MST Lunch break

Industrial Base

DEPS 2

0830-0900 MST Hybrid Beam Director Development and Testing (D/Export Controlled) *Scott Sherer, AFRL/RQVA*

0900-0930 MST The Road to Power Scaling and Industrialization of Directed Energy Pump Sources (A) *John Goings, Leonardo Electronics, Inc.*

0930-1000 MST 5.6 kW Narrow Linewidth, Single-Mode All-Fiber Amplifier (D/Export Controlled) *Angel Flores, Air Force Research Lab*

1000-1030 MST Break

1030-1200 MST

Industry Panel Discussion on Industrial Readiness for DE: Crossing the Chasm from S&T to Production

Discussion Topics

Challenges in crossing the chasm:

- Surviving the funding chasm between S&T funded programs and Programs of Record
- Technical challenges from Lab experiments and field demonstrations to fieldable mil-spec hardware
- Scaling manufacturing for increased volume to meet the demand
- Lowering cost to enable DE to be economically viable

Panelists (all Tier 2 or 3):

- Power/Thermal: *David Sykes, Mainstream Engineering*
- Fiber laser components: *Kevin Gregory, EOT*
- Fiber amplifiers: *Benjamin Johnson, Coherent*
- Beam control components: *Mary Clum, ATA*
- Beam Directors: *Jeff Maloney, II-VI*
- **Moderator:** *Mike O'Connor, nLIGHT*

1200-1330 MST Lunch break

PM

1330-1350 MST DEPS 1

Virtual Legacy Presentation 40 years of MIRACL (A) *presented by John Albertine*

1400- 1700 MST Virtual Exhibit Hall Hours

Thursday November 19

AM Virtual Technical Breakout Sessions

Special Session (5 briefs): HEL Integration into a UCAV Platform

Limited Distribution D- Export Controlled

DEPS 1

0830-0900 MST (1 of 5) HEL Integration into a UCAV Platform: A Progress Report (D) *Dr. Daniel Miller, Lockheed Martin*

0900-0930 MST (2 of 5) LWS Systems Engineering (D) *Mr. Dale Parkes, Boeing*

0930-1000 MST (3 of 5) LWS Components & Integration (D) *Dr. Josh Peters, Booz Allen Hamilton*

1000-1030 MST Break

1030-1100 MST (4 of 5) LWS Aero Effects/Modeling & Simulation (D) *Dr. DJ Wittich, AFRL*

1100-1130 MST (5 of 5) LWS Test & Evaluation (D) *Mr. Bryan Kelchner, Teknicare*

1130 MST Session concludes

Operational Employment

DEPS 2

0830-0900 MST Measurement Traceability for Electric Weapons (C) *Dr. Subrata Sanyal, NSWC Corona*

0900-0930 MST Model and Efficiency Improvements of METCAL-Focused M&S Codes for HEL Propagation (C) *Dr. Joseph Fiordilino, NSWC Corona*

0930-1000 MST DELTA-Wx Deep-Learning Turbulence Sensor (D/Export Controlled) *Dr. Matthew Whiteley, MZA Associates Corporation*

1000-1030 MST Break

1030-1100 MST Atmospheric characterization for DE propagation: METCAL support (C) *Dr. Joseph Fiordilino, NSWC Corona*

1100-1130 MST HPM and HPRF Weapons: METCAL Support (C) *Ignacio Espinosa, NSWC Corona*

1130-1200 MST Validation of a Multispectral Transmission/Extinction Quantification Method for HEL Operations (C) *Lt. Prayant Hanjra, AFIT/ ENP*

1200 MST Session concludes

Technology Demonstrator Systems

DEPS 3

0830-0900 MST U.S. Army High Energy Laser Mobile Test Truck Demonstration at USMA (D/Export Controlled) *Adam Aberle, USSMDC and COL John Hartke, USMA*

0900-0930 MST Analysis of an Aircraft Optical Window (D/Export Controlled) *Chung-Jen Tam, AFRL/RDLEM*

0930-1000 MST Deployment Update for the Laser Weapon System Demonstrator (LWSD) (D/Export Controlled) *Dr. Till Liepmann, Northrop Grumman*

1000-1030 MST Break

1030-1100 MST AC-130J High Energy Laser (AHEL) Prototype Demonstrator - System Design and I&T Plans (D/Export Controlled) *Stuart Shoppell, Naval Surface Warfare Center, Dahlgren Division*

1100-1130 MST Lab Demo Meeting the Jaffe Challenge (A) *Peter Schubert, Indiana University-Purdue University Indianapolis*

1130-1200 MST Aero-Effects Mitigation Beam Control Modeling and Test Developments (D/Export Controlled) *Dr. Matthew Whiteley, MZA Associates Corporation*

1200-1230 MST Protecting Satellites from Inadvertent Laser Effects (C) *Ms. Heather Witts & Mr. John Dewsnap, US Space Command, Combined Force Space Component Command, Laser Clearinghouse*

1230-1300 MST HIJENKS (High-power Joint Electromagnetic Non-Kinetic Strike) Program Update (D) *Rachel Wolfgang, AFRL/RDH*

1300 MST Conference Adjourns