



## **Technical Program**

# **Directed Energy Test and Evaluation Conference**

**Hosted by  
Directed Energy  
Professional Society  
and  
International Test and  
Evaluation Association**

**3-5 August 2010  
Albuquerque, New Mexico**

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## TUESDAY

### Short Courses

0700 Registration at Embassy Suites

0800 Morning Tutorials Begin

#### TUTORIAL I

**Introduction to High Energy Laser (HEL) Systems**

Instructor: *Denny Boesen*, TASC

#### TUTORIAL II

**Introduction to High Power Microwave (HPM) Systems**

Instructors: *Bob Antoine*, Northrop Grumman and *Bob Richter-Sand*, Science Applications International Corporation

#### TUTORIAL III

**HPM M&S Tools for T&E: Test Hazard Prediction and Target Surrogate Materials**

Instructors: *Mark DelGrande*, *Walter Clover* and *James Duffey*, Science Applications International Corporation

#### TUTORIAL IV Cancelled

1200 Break for Lunch

1300 Afternoon Tutorials Begin

#### TUTORIAL V

**T&E of High Energy Laser (HEL) Systems (Limited)**

Instructor: *Larry McKee*, Science Applications International Corporation

#### TUTORIAL VI

**Test and Evaluation of High Power Microwave (HPM) Systems (Limited)**

Instructor: *Jeffrey Schleher*, Science Applications International Corporation

#### TUTORIAL VII

**The Credible Use of Modeling and Simulation in T&E**

Instructor: *Dave Cook*, Stephen F Austin State University

#### TUTORIAL VIII

**High Energy Laser Test Design (Limited)**

Instructors: *Andy Keipert* and *Charles Helms*, Air Armament Center

## WEDNESDAY MORNING

### Plenary Session (Open)

Embassy Suites

- 0630 **Registration Desk Opens**
- 0700 **Exhibits Open**  
**Continental Breakfast in the Exhibit Area**  
**Speaker/Panel Member Breakfast**
- 0800 **Welcome and Introductions**  
Conference Co-Chairs:  
*Patrick Cannon and Larry McKee*
- 0815 **DE - Success Through Test and Evaluation**  
*Mr. George Rumford, Test and Evaluation Science and Technology (T&E/S&T) Program Manager, OUSD*
- 0900 **Airborne Laser Lethal Shoot Down**  
*Colonel Andrew Dobrot, Vice Commander Airborne Laser Program Office*
- 0945 **Break in Exhibit Area**
- 1015 **DE Task Force/Action Group**  
*Colonel David Robie, AF/A5R - Air Force Requirements*
- 1100 **Maritime Laser Demonstration Update**  
*Mr. David Newton, Naval Surface Warfare Center*
- 1145 **Lunch**

## WEDNESDAY AFTERNOON

### SESSION 1: Directed Energy Modeling and Simulation (Open/Limited)

Embassy Suites

Chair: *Andy Keipert, 46 TS/OGEE*

#### Session is Open

- 1300 **Advanced Modeling and Simulation for Test and Evaluation of Electromagnetic Threat Assessment**  
*Vijaya Shankar, HyPerComp, Inc.*
- 1330 **Combining High Powered Microwave Effects and Conventional Weapons Analysis**  
*Kim Allen, Applied Research Associates*

#### Session is now Limited

- 1400 **An Integrated Process for Testing and Evaluation of High Power Microwave Systems (Limited)**  
*Kenny Escobar, 46th Test Wing*
- 1430 **Break**
- 1500 **HPM Mission Level Modeling to Support Testing and Evaluation (Limited)**  
*Steve Booher, Air Force Research Laboratory/RDHA*
- 1530 **Advanced Concepts Event - Maturing Directed Energy Experimentation Wargaming (Limited)**  
*Lauren Viscito, Air Force Research Laboratory/RDTA*
- 1600 **VV&A Strategy for DE Tools (Limited)**  
*Linda Lamberson, Air Force Research Laboratory/RDTA*
- 1630 **Capabilities of HEL Beam Control Systems Against Maneuvering Targets (Limited)**  
*Travis Taylor, US Army Space & Missile Defense Command*
- 1730 **Reception in the Exhibit Area**

## WEDNESDAY AFTERNOON

### SESSION 2: Test and Evaluation Lessons Learned: HEL and HPM (Limited/Open)

Embassy Suites

Chair: *Richard Welch*, 46TS/OGEE (Qualis Corp)

#### Session is Limited

- 1300 **BITS, Beam Irradiance on Target System (Limited)**  
*David Ward*, SemQuest Inc.
- 1330 **Measurement of Thermal Phenomena at HEL Target Surfaces (Limited)**  
*Jonathan Woolley*, AEGIS Technologies Group
- 1400 **Solid State Laser Testbed Experiment (SSLTE) Testing Program at HELSTF (Update) (Limited)**  
*Travis Taylor*, US Army Space & Missile Defense Command
- 1430 **Break**

#### Session is now Open

- 1500 **Directed Energy Testing at North Oscura Peak, New Mexico**  
*Ross Conrad*, Air Force Research Laboratory/RDSEW
- 1530 **Progress Report: A High Energy Laser Target Board for Ground Target Irradiance/Fluence Measurement**  
*David Roberts*, Georgia Tech Research Institute
- 1600 **Field Characterization with Slab Coupled Optical Sensor (SCOS)**  
*Bryson Shreeve*, Brigham Young University
- 1630 **High Energy Laser Target Surface Temperature Estimation by a 1D Inverse Heat Conduction Algorithm**  
*James Griggs*, Directed Energy Test and Evaluation Capability
- 1730 **Reception in the Exhibit Area**

## WEDNESDAY AFTERNOON

### SESSION 3: Science & Technology / T&E Technology Development (Open/Limited)

Embassy Suites

Chair: *John Wong*, 711 TS/DE

#### Session is Open

- 1300 **Directed Energy Test Science and Technology (DET S&T) Project Overview**  
*Minh Vuong*, PEO STRI
- 1330 **Progress Report: The Integrated Atmospheric Characterization System (IACS)**  
*David Roberts*, Georgia Tech Research Institute
- 1400 **The Development of a Versatile High Power Wideband RF Test System**  
*Jon Mayes*, Applied Physical Electronics
- 1430 **Break**

#### Session is now Limited

- 1500 **Off-Axis Monitoring of Laser Energy for Open Air Range Testing (LOHAZ) (Limited)**  
*Richard Preston*, Sensing Strategies, Inc.
- 1530 **Focal Plane Array Developments for High Energy Laser Radiometric Imaging (Limited)**  
*George Williams*, Voxel, Inc

#### Session is Open

- 1600 **Lessons Learned from Testing a 25GW Wideband High Power Microwave Simulated Threat Source**  
*Jeffrey Schleher*, Directed Energy Test and Evaluation Capability
- 1630 **Acceptance Test Results for the Directed Energy Test and Evaluation Capability High Power Microwave Narrowband Threat Systems**  
*J. Mark DelGrande*, Directed Energy Test and Evaluation Capability
- 1730 **Reception in the Exhibit Area**

# *Thanks to Our Platinum Sponsors:*



*Thanks to Our Gold Sponsor:*  ***Ktech*** CORP.

## *Thanks to Our Exhibitors:*

**AEgis Technologies Group, Inc.**

**Air Force Research Laboratory**

**Applied Physical Electronics**

**Cobham Sensor Systems**

**DE<sup>2</sup>AC**

**DETEC**

**Georgia Tech Research Institute**

**Ktech Corporation**

**NAVAIR**

**Northrop Grumman Corporation**

**Photron USA, Inc.**

**Science Applications International  
Corporation**

**The Boeing Company**

**U.S. Air Force Operational Test &  
Evaluation Center - AFOTEC**

## THURSDAY MORNING

### Plenary Session (Open/Limited)

Embassy Suites

0630 **Registration Desk Opens**

0700 **Exhibits Open**

**Continental Breakfast in the Exhibit Area  
Speaker/Panel Member Breakfast**

### Session is Open

0800 **Welcome and Introductions**

Conference Co-Chairs:

*Patrick Cannon and Larry McKee*

0815 **CHAMP**

*Bob Torres, Air Force Research Laboratory/  
RDH*

0845 **Army Laser Testbed (HELSTF)**

*Stephen Squires, HELSTF Director*

0930 **Break in Exhibit Area**

### Session is now Limited

1000 **PLENARY PANEL:**

**Advanced Tactical Lasers (Limited)**

Chair: *Charles Helms, Air Armament Center*

**Panel:**

*Charles Helms, Air Armament Center*

*Bryan Kelchner, The Boeing Company*

*Heather Lehmann, USSTRATCOM/JFCC  
SPACE/J95 - The Laser Clearing House*

*Randy Smith, The Boeing Company*

*Ken Stanley, Headquarters - Air Force  
Special Operations Command*

*Eric Van Dorn, 413th Flight Test Squadron  
(46th Test Wing)*

1145 **Lunch**

1245 **Buses Depart for Classified Session**

## THURSDAY MORNING

### Poster Session (Open)

Embassy Suites, Exhibit Area

1000 - 1145

**Dual Oscillator for Microwave Generation (DOMG)**

*Doug Byrne, ITT Corporation*

**Field Strength Sensor Network (FSSN)**

*Gary Demuth, ITT Corporation*

**Integrated Electro-Magneto-optic Sensor (IEMS)**

*Anthony Garzarella, Navy Research Laboratory*

**Heat Flux Sensor Array (HFSA)**

*Yuwen Zhang, University of Missouri*

## THURSDAY AFTERNOON

### SESSION 4: Data Sharing and Standardization (Limited/Open)

Embassy Suites

Chair: *Richard Damron*, Air Force Research Laboratory/RDTA

#### Session is Limited

- 1300 **Introduction to Data Sharing and Standardization (Limited)**  
*Richard Damron*, Air Force Research Laboratory/RDTA
- 1315 **HEL Lethality Architecture (Limited)**  
*Dave Loomis*, DNL Consulting
- 1345 **Verification, Validation & Accreditation of Existing Directed Energy Models (Limited)**  
*Maqsood Mohammed*, Air Armament Center
- 1430 **Break**

#### Session is now Open

- 1500 **Overview of AFIT-Developed Codes**  
*Jonathan Spaulding*, Air Force Institute of Technology
- 1530 **Directed Energy Engineering Analysis Center**  
*Karen Hudson*, Air Force Research Laboratory/RD
- 1700 **Conference Adjourns**

## THURSDAY AFTERNOON

### SESSION 5: Laser Testing and Satellite Safety (Limited)

Embassy Suites

Chair: *Jim Wolongevicz*, Air Force Research Laboratory/RDS

- 1300 **Satellite Safety Solutions for Appropriate and Affordable Directed Energy Test and Evaluation**  
*Heather Lehman*, U.S. Navy
- 1330 **Guidance on Mitigating PA Issues and an Introduction to PA Tools**  
*Sarah Myers*, Air Force Research Laboratory/RDTE
- 1400 **Airborne Laser Testbed's Predictive Avoidance Mission Planning**  
*Andrew Corp*, U. S. Air Force
- 1430 **Break**
- 1500 **Laser Weapon System Satellite Avoidance**  
*David Newton*, U.S. Navy
- 1530 **Benefits of a Situational Awareness Tool During a "Ground Laser to a High Altitude Aircraft" Test Program**  
*William Gibson*, High Energy Laser Joint Technology Office
- 1545 **HEL-JTO Predictive Avoidance and Aircraft Deconfliction Roadmap**  
*LeAnn Brasure*, Schafer Corp
- 1700 **Conference Adjourns**

## THURSDAY AFTERNOON

### SESSION 6: Directed Energy Test Results (SECRET/U.S. Only)

Offsite Location

Chair: *James Keith*, 46 Test Group/OL-AA

- 1245 Buses Depart for Classified Session
- 1300 Airborne Laser Test Bed Results
- 1330 MATRIX Field Test Results
- 1400 Preliminary Effects Test Results for CHAMP
- 1430 Using Field Data and a Wave Optics Model to Compare Tactical Track Algorithms
- 1500 Break
- 1530 Mission Planning for the Airborne Laser Test Bed's High Power Missile Engagements
- 1600 Low-Mid Power HEL Systems Analysis Against Mortars
- 1630 Recent Results of Directed Energy Experiments and Field Testing
- 1645 Buses Return from Classified Sessions
- 1700 Conference Adjourns

## Upcoming Events

**2010 ITEA Annual Symposium**  
ITEA Sponsored Event  
13-16 September 2010 - Glendale, AZ

**RF Directed Energy Weapons Conference**  
DEPS Sponsored Event  
13-17 September 2010 - Shrivenham, UK

**Unmanned Autonomous Systems Workshop**  
ITEA Sponsored Event  
13-14 October 2010 - Atlanta, GA

**2010 DEPS Annual DE Symposium**  
DEPS Sponsored Event  
15-19 November 2010 - Bethesda, MD

**2010 T&E in the Acoustical Arena Workshop**  
ITEA Sponsored Event  
16-19 November 2010 - Poipu, Kauai, HI

**2011 Live-Virtual-Constructive Conference**  
ITEA Sponsored Event  
24-27 January 2011 - El Paso, TX

**Directed Energy Systems Symposium**  
DEPS Sponsored Event  
28 March - 1 April 2011 - Monterey, CA



# Conference Organizers

## Conference Co-Chairs

*Mr. Patrick Cannon*

*Dr. Larry McKee*

## Technical Program Co-Chairs

*Mr. Jeff Estep*

*Mr. Andy Keipert*

## Exhibits Chair

*Mr. Bill Dallas*

## Conference Coordinator

*Cynnamon Spain*

## Registration and Short Courses

*Donna Storment*

## Payments and Receipts

*Tiffany Bjelke*

