



**2007**  
**Directed Energy**  
**Test and Evaluation**  
**Conference**

**7 - 9 August 2007**  
**Albuquerque, New Mexico**

# CONTENTS

## TUESDAY

Tutorials.....	1
Exhibitor/Golf Awards Reception	

## WEDNESDAY MORNING

Plenary Session.....	2
----------------------	---

## WEDNESDAY AFTERNOON

Technologies for DE T&E Requirements (P/FOUO).	3
DE T&E Methodology and Weapon Concepts of Operation (FOUO/P).....	4
DE Effects/Bioeffects on the Battlefield (FOUO/P).	5
Exhibitor Reception in Exhibits Hall	
Poster Session in Grand Pavilion Foyer	

## THURSDAY MORNING

Plenary Panels.....	6
---------------------	---

## THURSDAY AFTERNOON

DE Threat Update (SECRET).....	7
Present and Future DE Range Capabilities (P/FOUO).	8
Deployment of M&S for DE T&E (FOUO/P).....	9

## Session Restrictions

P = Public sessions. Can be attended by any registrant.

FOUO = Limited Attendance Sessions. Can be attended by U.S. citizens who are employees of the U.S. Government or its contractors.

SECRET = Secret sessions. Can be attended by U.S. citizens with a classified visit request on file.

FOUO/Public sessions have FOUO presentations followed by Public ones. Public/FOUO sessions have Public presentations followed by FOUO ones.

**AUDIO AND VIDEO RECORDING IS  
PROHIBITED AT ALL DEPS  
SPONSORED EVENTS**

# TUESDAY

## Tutorials (Public/FOUO)

- 0700 Registration at Hyatt  
Breakfast for Morning Tutorial Students
- 0800 Short Tutorials Begin
1. Introduction to High Energy Laser Systems  
*Mr. Denny Boesen, Northrop Grumman*
  2. Introduction to High Power Microwave Systems (FOUO)  
*Mr. Bob Antoine and Mr. Bob Richter-Sand, Northrop Grumman*
  3. Military Utility Analysis for DE Systems (FOUO)  
*Ms. Linda Lamberson, Air Force Research Laboratory/DED*
- 1200 Lunch for Afternoon Tutorial Students
- 1300 Afternoon Tutorials Begin
4. The Credible Use of Modeling and Simulation in Test and Evaluation  
*Dr. Dave Cook, The Aegis Technologies Group, Inc.*
  5. Test and Evaluation of High Energy Laser Systems (FOUO)  
*Dr. Larry McKee, Science Applications International Corporation*
  6. Test and Evaluation of High Power Microwave Systems (FOUO)  
*Mr. Jeff Schleher, Science Applications International Corporation*
- 1730 Exhibitor/Golf Awards Reception in Hyatt Lobby

Thanks to Our  
Platinum Sponsor



## WEDNESDAY MORNING

### Plenary Session (Public)

- 0630 **Registration at Hyatt Hotel**
- 0700 **Exhibits Open**  
**Continental Breakfast in the Exhibit Area**  
**Speakers'/Panel Members' Breakfast**
- 0800 **Welcome and Introductions**  
Conference Co-Chairs:  
*Mr. Patrick Cannon, ITEA and*  
*Mr. Rick Graber, DEPS*
- 0815 **High Power Microwave Test and Evaluation**  
*Captain David Kiel, Program Manager,*  
*Naval Directed Energy Weapons Program Office*
- 0900 **Airborne Laser (ABL) Program Status**  
*Colonel John Daniels, Director,*  
*Airborne Laser Program Office*
- 0945 **Break**
- 1015 **Navy S&T Strategic Planning Process**  
*Mr. Michael Deitchman, Deputy Chief*  
*of Naval Research (Code 35) Head, Air*  
*Warfare and Weapons Department*
- 1100 **Direct Energy Test and Evaluation Investments**  
*Mr. G. Derrick Hinton, Program*  
*Manager, OSD Central Test and Evaluation*  
*Investment Program*
- 1145 **Lunch**

## SESSION 1

### Technologies for DE T&E Requirements (Public/FOUO)

- Chair: *Amit Kapadia*, U.S. Army Program  
Executive Office - Simulation, Training,  
and Instrumentation
- 1300 **Introduction to Directed Energy Test  
Science and Technology**  
*Amit Kapadia*, U.S. Army Program  
Executive Office - Simulation, Training,  
and Instrumentation
- 1330 **Progress Report: A Holographic Target  
Board for Ground Target Irradiance/  
Fluence Measurement**  
*David Roberts*, Georgia Tech Research  
Institute
- 1400 **Laser Protected Antenna**  
*Hardy Schreiber*, Science Applications  
International Corporation
- 1430 **Non-Intrusive, Broad-Bandwidth,  
Optical-Fiber-Coupled Electric and  
Magnetic Field Sensing Technique for  
High Power Microwave Detection**  
*John Whitaker*, Opteos, Inc.
- 1500 **Break**
- 1530 **Bi-Static Optical Imaging Sensor:  
Hyper-Spectral HEL Diagnostics using  
Fiber Optic Technology (FOUO)**  
*Brett Bush*, Photon Research Associates
- 1600 **A Scanning Target Board to Diagnose  
HPM Beams**  
*Kevin Walter*, Scientific Applications and  
Research Associates, Inc.
- 1630 **Development of an On-Board  
Temperature and Irradiance Sensor  
Matrix**  
*David Thomas*, The Aegis Technologies  
Group
- 1730 **Reception in Exhibit Hall  
Poster Session in Grand Pavilion Foyer**

## SESSION 2

### DE T&E Methodology and Weapon Concepts of Operation (CONOPS) (FOUO/Public)

Chair: *Scott McPheeters*, U.S. Army PEO Missiles  
and Space

- 1300 **Introduction**  
*Scott McPheeters*, U.S. Army PEO Missiles  
and Space
- 1330 **A Comprehensive Approach to  
Evaluating System Effectiveness for  
Directed Energy Systems (FOUO)**  
*Bill Hulsey*, SPARTA, Inc.
- 1400 **Operational Test Requirements for  
Ground-Based Active Denial System by  
Mission (FOUO)**  
*Charles Albers*, BAE Systems
- 1430 **ABL Low Power-Active Flight Test  
Update (FOUO)**  
*David Sitz*, Airborne Laser System  
Program Office
- 1500 **Break**
- 1530 **Airborne Target Irradiance and Imagery  
Measurement Risk Reduction Testbed**  
*Larry McKee*, Directed Energy Test and  
Evaluation Capability
- 1600 **An Infrared Camera Simulation  
Estimating the Signal-To-Noise Ratio and  
Spatial Temperature Profile of an  
ABL-Illuminated Target**  
*David Orth*, Air Force Institute of  
Technology
- 1630 **Tri-Service Study Update Project**  
*Bob Lee*, Directed Energy Test and  
Evaluation Capability
- 1730 **Reception in Exhibit Hall**  
**Poster Session in Grand Pavilion Foyer**

## SESSION 3

### DE Effects/Bioeffects on the Battlefield (FOUO/Public)

Chair: *Stephanie Miller*, Air Force Research Laboratory/HED

- 1300 **Nonlinear Transmission Line Based Systems for Effects Testing (FOUO)**  
*S.E. Calico*, Lockheed Martin
- 1330 **HPM Test Hazard Prediction: A New Software Tool to Predict and Visualize Hazards to Personnel and Interference to Electronics (FOUO)**  
*Greg Skidmore*, ATK Mission Research
- 1400 **Large High Power Integrated Array of Phased Arrays System Concepts and Cost Analysis for Lunar Telcomm and Navigation in Human Mission Era (FOUO)**  
*Farid Amoozegar*, Jet Propulsion Laboratory
- 1430 **High Fidelity Simulation of a Bi-Static Measurement of Delivered Irradiance on Target (FOUO)**  
*Matthew Krizo*, Air Force Institute of Technology
- 1500 **Break**
- 1530 **A Science Based Approach to Overexposure Reconstruction (FOUO)**  
*Kalyn Yaws*, Air Force Research Laboratory/HEDR
- 1600 **Two-Band Infrared Thermographer for Standoff Temperature Measurements: The Next Generation Instrument**  
*Julia Rentz Dupuis*, OPTRA, Inc
- 1730 **Reception in Exhibit Hall**  
**Poster Session in Grand Pavilion Foyer**

# THURSDAY MORNING

## Plenary Panels (Public)

- 0800 **Welcome and Introductions**  
Conference Co-Chairs:  
*Mr. Patrick Cannon*, ITEA and  
*Mr. Rick Graber*, DEPS
- 0815 **PLENARY PANEL A:**  
**Lessons Learned from Active Denial System (ADS) Testing (Unclassified)**  
Chair: *Mr. Patrick Cannon*, The AEgis Technologies Group
- PANEL:**  
*Brigadier General (ret) Don Streater*, ADS ACTD Deputy Operational Manager  
*Dr. Diana Loree*, ADS ACTD Technical Manager  
*Ms. Stephanie Miller*, ADS ACTD Bioeffects Program Manager
- 0945 **Break**
- 1015 **PLENARY PANEL B:**  
**HEL Joint Technology Office (JTO) Directed Energy Applications (Unclassified)**  
Chair: *Mr. Mark Neice*, High Energy Laser Joint Technology Office
- PANEL:**  
*Mr. Roy Hamil*, Air Force Research Laboratory/DED  
*Mr. Chuck LaMar*, U.S. Army Space and Missile Defense Command  
*Capt David Keil*, Naval Directed Energy Weapons Program Office
- 1145 **Lunch**
- 1230 **Buses depart for SECRET Session**



# THURSDAY AFTERNOON

## SESSION 4

### DE Threat Update (SECRET/U.S. Only)

Chair: *Jeremy Martin*, Office of Naval Intelligence

- 1230 Buses depart for SECRET Session
- 1300 Airborne Laser Low Power-Active Flight Test Highlights
- 1315 Intel Support to Test and Evaluation: The Mystery Revealed
- 1345 The Laser Threat Environment for Naval Forces
- 1415 A Comprehensive Approach to Evaluating System Effectiveness for Directed Energy Systems
- 1445 Directed Energy Asymmetrical Threats - Incorporating into LFT&E and Battle Scenario Simulations
- 1515 Break
- 1530 Active Denial System Extended User Evaluation
- 1600 Development of Encapsulated Noble Gasses for HPM Detection
- 1630 DEW Threats from the Information Operations Capstone
- 1700 Buses Return from SECRET Session  
Conference Adjourns

## THURSDAY AFTERNOON

### SESSION 5

#### Present and Future DE Range Capabilities (Public/FOUO)

Chair: *Brad King*, White Sands Missile Range

- 1300 **High Energy Laser Ground Target Irradiance Measurement Capability**  
*Mike Bertin*, Directed Energy Test and Evaluation Capability
- 1330 **High Power Microwave Narrowband Threat System Capability**  
*Cyndi Mora*, Directed Energy Test and Evaluation Capability
- 1400 **A Highly Automated and Integrated DETEC HPM Sensor Suite (SS) Instrumentation System**  
*Jory Cafferky*, EG&G
- 1430 **The DETEC HPM WBTS - A Wideband, Radio Frequency System Employing Helical Antennas and a High-Voltage Impulse Generator**  
*Tom Warren*, L-3 Communications
- 1500 **Break**
- 1530 **Big Crow Target Board Capabilities for DE T&E (FOUO)**  
*Michael Beerer*, 417th FLTS/ENT
- 1600 **Testing a Tunable Wideband RF Source (FOUO)**  
*Jeff Schleher*, Directed Energy Test and Evaluation Capability
- 1630 **C-IED Test Methodology (FOUO)**  
*Russell Blundell*, White Sands Test Center
- 1700 **Conference Adjourns**

## SESSION 6

### Deployment of Modeling and Simulation (M&S) for DE T&E (FOUO/Public)

Chair: *Robin Ritter*, Tau Technologies

- 1300 **New Software Capabilities in DE T&E (FOUO)**  
*Jessica Benveniste*, Edwards Air Force Base
- 1330 **Ongoing Developments of a Joint Munition Effectiveness Tool for Directed Energy and Non-Lethal Weapons (FOUO)**  
*Nicholas Tarasenko*, Air Force Research Laboratory/DETA
- 1400 **HEL Data Fusion for DE Test and Evaluation (FOUO)**  
*Aaron Birenboim*, Tau Technologies
- 1430 **Algorithm for the Estimation of Delivered Irradiance on Target (FOUO)**  
*Matthew Whitely*, MZA Associates
- 1500 **BRDF Development and Application to T&E (FOUO)**  
*Ed Pease*, Tau Technologies
- 1530 **Break**
- 1600 **Numerical Modeling of Helical Antenna Excited by Transient Waveforms**  
*D.V. Giri*, Pro-Tech
- 1630 **Fast Synthetic Scene Generation for DE Applications**  
*Steve Coy*, MZA Associates
- 1700 **Conference Adjourns**

## Thanks to our Exhibitors:

AEgis Technologies Group, Inc.

Atlantic Positioning Systems

CALCULEX, Inc.

DETEC

Dewetron, Inc.

Energetic Materials Research and Testing Center

Georgia Tech Research Institute

High Energy Laser Systems Test Facility

ITEA

Kauai Economic Development Board

Lambda

Northrop Grumman

RC Optical Systems

Science Applications International Corporation

TRMC T&E/S&T Program Office

U.S. Army Big Crow Program Office

U.S. Army White Sands Missile Range

## Conference Organizing Committee

### Conference Co-Chairs

*Patrick Cannon*

*Rick Graber*

### Technical Program Co-Chairs

*Minh Vuong*

*Laury Decker*

### Exhibits Chair

*Doug Messer*

### Conference Coordinator

*Cynnamon Spain*

### Registration and Tutorials

*Donna Storment*

