DE Systems Symposium

25 - 28 August 2014
Monterey, California
General Information

Security
- DE Systems Symposium is SECRET/NOFORN
- Attendees will be issued conference specific badges on site and must have valid gov’t ID available at all Symposium events
- Wireless electronic devices are prohibited in classified sessions
- Classified materials must be processed through DEPS security
- Classified notes MAY ONLY BE TAKEN IN NOTEBOOKS PROVIDED BY SECURITY STAFF at certain conference venues
  (No note-taking in Opening and Closing Plenary)
- Classified discussions and sensitive unclassified discussions are restricted to designated meeting rooms only
- Cameras and photography must be authorized by the DEPS Symposium security manager
- Audio and video recording is prohibited
- Security concerns should be addressed to a DEPS Security Team member
- Failure to adhere to security standards could result in denied/revoked Symposium registration

Buses
NPS is a short walk from the Hyatt Hotel and attendees are encouraged to walk. For those unable to walk, buses will run approx every 20 mins during the following hours:
  Tuesday - Thursday  0730 - 1730
Buses will leave from the Hyatt and drop off at various locations at NPS. Do not bring cell phones, laptops, or notebooks to NPS. DEPS staff will not be responsible for your items.

Important Phone Numbers:
Monterey Police  831-646-3914
NPS Emergency Police  831-656-2555
Community Hospital of Monterey  831-625-4900
NPS Quarterdeck  831-656-2441
General Symposium Info  505-450-1165

AUDIO AND VIDEO RECORDING IS PROHIBITED AT ALL DEPS SPONSORED EVENTS
TUESDAY MORNING

JOINT SESSION

Opening Plenary
NPS, King Hall
0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0730 Limited Buses to NPS
0800 Welcome
  CAPT David Kiel and RADM Nevin Carr
0810 Naval Postgraduate School Welcome
  VADM Route (retired), NPS President
0815 Security Comments
  Ms Rhonda Peyton
0825 Special Operations DE Requirements
  Mr Karl Rovelsky, SOCOM
0855 DARPA DE Efforts
  Dr Rich Bagnell, DARPA
0925 CRS perspective on Directed Energy
  Mr Ron O’Rourke, Congressional Research Service
0955 Break
1015 Navy DE Programs
  Mr Tom Beutner, ONR Code 35
1045 Navy Operational and Affordability Considerations
  RADM Nevin Carr (ret)
1115 LaWS QRC and the RAP Process
  CDR Vince Chernesky, PMS 405
1145 Navy DE Roadmap
  Mr Thomas Callender, DUSN (Policy)
1200 Lunch at Hyatt

TUESDAY AFTERNOON

JOINT SESSION

Employment and M&S Conference Session
Limited Distribution D / Open
Hyatt, Windjammer II - IV
Chair: Dave Kashinski, US Military Academy
1300 Modeling and Simulation (A)
  Edwin Ahn, Air Force Research Laboratory
1330 Modeling Methodologies and Advancement (A)
  Eric Magee, MZA Associates Corporation
1400 Integration of the Hazard Analysis of Directed Energy Simulation (HADES) into the Endgame Framework Concept (A)
  TBD
1430 Break
1500 Computational Thermal Model of Laser Penetration through Layered Materials (D)
  Gunnar Tamm, U.S. Military Academy
1530 Computational Thermal Model for the Loss of Mass due to Absorption of Laser Energy (D)
  Kyle Okular, U.S. Military Academy
1600 High Energy Laser Effects on Elevated Multilayer Surfaces (A)
  Chris Wink, U.S. Military Academy
1630 The Effects of Rotation on Heat Dissipation in Steel (A)
  Ian De Mallie, U.S. Military Academy
1700 Reception
TUESDAY AFTERNOON

JOINT SESSION

T&E and Lethality Conference Session:
Counter ISR
Limited Distribution D / Open
Hyatt, Cypress I - II
Chair: Woody Shortt, AEgis Technologies Group
1300 HELMD Testing (D)
   Randy Lewis, Space and Missile Defense
1330 Testing and Evaluation of the Navy’s First
   Deployed HEL System (D)
   David Carter, Naval Surface Warfare Center
1400 HEL JTO C-ISR Testing (D)
   Woody Shortt, AEgis Technologies Group

SESSION IS NOW OPEN

1430 Comprehensive Systems-Based Plan for an
   Ingetrated HEL Test Bed (A)
   Bonnie Young, Naval Postgraduate School
1500 Break

T&E and M&S Conference Session:
T&E Simulation and Analysis
Limited Distribution D / Open
Hyatt, Cypress I - II
Chair: Frank Donovan, AEgis Technologies Group
1530 Approaches to Include Directed Energy
   Reflection Effects in Various Distributed
   Interactive Simulation Protocol Data Units (D)
   Frank Donovan, AEgis Technologies Group
1600 Testable and Effective Laser Metrics for
   Source Selection Using Power in the Bucket
   Curves (D)
   Matt Leigh, Naval Surface Warfare Center
1630 IED Detection and/or Pre-Detonation with
   Magnetic Fields (D)
   Thomas Camp, Naval Surface Warfare Center

SESSION IS NOW OPEN

1700 High Energy Laser Probabilistic Reflection
   Injury Model (HELPRIIM) (A)
   Albert Bailey, TASC
1730 Reception

BEAM CONTROL

Beam Control Systems, Experiments, and
Demonstrations
Limited Distribution D
Hyatt, Spyglass I
Chairs: Albert Ogloza, Dept. of Navy
1300 Partial Spatial and Temporal Coherence
   and Implications for Active Track and
   Active Imaging (A)
   Richard Holmes, Boeing Laser Technical
   Services
1325 Design of Deformable Mirrors for Aberration
   Compensation (A)
   Justin Mansell, MZA Associates Corporation
1355 High Energy Laser Beam Control Testbed:
   Status and Capabilities (C)
   Lew DeSandre, Navel Postgraduate School
1420 NPS SE High Energy Laser Cavalry
   Autonomous Vehicle (HELCAV) (D)
   Douglas Nelson, Naval Postgraduate School
1445 Development and Challenges of a US Navy
   Shipboard Deployed, High Energy Laser
   Active Imaging System (D)
   David Newton, Naval Surface Warfare Center
1510 Break
1525 Adaptive Tactical Laser System
   (ATLAS) Field Test Results (C)
   Jeff Barchers, Nutronics, Inc.
1550 Analysis of Optical Performance for a
   Refractive Lightweight Beam Director
   for GBAD (D)
   Jeremiah Lange, Naval Surface Warfare Center
1730 Reception
## COUNTER DE WEAPONS

**Introduction**  
Secret  
NPS, ME Auditorium  

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>1300</td>
<td>Overview of ONRs Counter-Directed Energy Weapons Program (C)</td>
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<tr>
<td>1330</td>
<td>45 Years of C-HEL: Re-Inventing the Wheel ... Again! (C)</td>
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<tr>
<td>1400</td>
<td>CDEW Education and Research at the United States Naval Academy (A)</td>
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<tr>
<td>1430</td>
<td>Current and Emerging Threats from Ground-Based Directed Energy Weapons (DEW)</td>
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<td>1500</td>
<td>Break</td>
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## RF and High Energy Particle Beams Hardening  
Secret  

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<th>Time</th>
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<tr>
<td>1530</td>
<td>Countering DEW Capabilities Which Rely on Degradation Mechanisms Other than Thermal</td>
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<tr>
<td>1600</td>
<td>Nonlinear Artificial Impedance Surfaces to Counter HPM Effects (A)</td>
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<td>1630</td>
<td>Using BLT Topology with the Random Coupling Model to Guide the Design of Shielding and Absorption from High Power RF (A)</td>
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<tr>
<td>1700</td>
<td>Active Nonlinear Metamaterials to Counter High Power Microwave Directed Energy Weapons</td>
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<td>1730</td>
<td>Reception</td>
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## EMPLOYMENT OF DE WEAPONS

**Employment Session**  
Secret  
NPS, Ingersol  

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<tr>
<td>1300</td>
<td>Ultra-Wide Band Directed Energy Interactions with Materials and Systems of Interest for Department of Defense Applications (S-F)</td>
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<td>1330</td>
<td>Refurbishment and Target Testing with the ORION HPRF System at NSWC Dahlgren (S-F)</td>
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**INTEL**  

**INTEL Session**  
Secret  
NPS, Ingersol  

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<tr>
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<td>1400</td>
<td>Worldwide Laser Weapon Developments</td>
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<td>1500</td>
<td>Worldwide Radio Frequency Weapon (RFW) Developments</td>
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<tr>
<td>1730</td>
<td>Reception</td>
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TUESDAY AFTERNOON

HEL LETHALITY

System / Subsystem Test Results
Secret
NPS, Glasgow
1300 Laser Heating and Penetration of Aluminum Alloys at 0.8-micron Wavelength (A)
1330 2013 Navy C-RAM Test Results and Analysis (S-D)
1400 UAS Tail Boom Vulnerability Testing & Analysis (D)
1430 Break
1500 2013 Navy HEL Test on Topside Ordnance and Components (S-D)
1530 Counter Sensor Lethality (S-D)
1730 Reception

WEDNESDAY MORNING

BEAM CONTROL

Characterization and Compensation
Limited Distribution D
Hyatt, Spyglass I
Chair: Doug Nelson, Naval Postgraduate School
0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0900 Sensor Exploitation for Atmospheric Turbulence Characterization (D)
Matthew Whitely, MZA Associates Corporation
0925 NPS SE Atmospheric Turbulence Measurements 2014 (D)
Douglas Nelson, Naval Postgraduate School
0950 Characterization of Horizontal Laser Propagation at the Limor Site at the HELSTF (C)
Jessie Hazen, UAH Systems Management and Production Center
1015 Break
1030 Site Turbulence Evaluation Profile Set (STEPS) (D)
Matthew Whitely, MZA Associates Corporation
1055 Stochastic Parallel Gradient Descent Algorithm with Adaptive Gain for Atmospheric Turbulence Compensation (A)
Daniel Whittley, University of Alabama
1120 A Wave-Optics Study of Wavefront Compensation using a Hotspot Beacon (D)
Robert Praus, MZA Associates Corporation
1200 Lunch at Hyatt
### BEAM CONTROL

**Phased Arrays**

**Limited Distribution D**
Hyatt, Spyglass II
Chairs: Andy Motes, Schafer Corporation

| Time   | Event                                                                 |
|--------|                                                                      |
| 0630   | Breakfast at Hyatt Regency                                           |
| 0700   | Registration at Hyatt Regency                                        |
| 0800   | Factors Affecting Coherent Synthetic-Aperture Lidar System Performance (D)  
  *Eric Magee, MZA Associates Corporation*     |
| 0825   | Deep Turbulence and Speckle Effects in Coherently Combined Fiber Array Systems:  
  Analysis and Experimental Demonstration (A)  
  *Mikhail Vorontsov, University of Dayton*   |
| 0850   | CLAWS and HBC-CLAWS Laboratory Test Results and Field Testing Planning (C)  
  *Jeff Barchers, Nutronics, Inc.*             |
| 0915   | Optimal and Adaptive Filtering for Phase Prediction and Correction with Mod nΠ  
  Measurements (A)  
  *Steve Gibson, UCLA*                         |
| 0940   | Break                                                                |
| 1010   | Imaging with Digital Holography for DE Applications (C)  
  *Phil Gatt, Lockheed Martin STAR Lab*        |
| 1035   | Actuation Requirements for Tiled Arrays in Supersonic Flow (D)  
  *Matthew Whiteley, MZA Associates Corporation* |
| 1100   | Maturing Risley Prism Technology for Directed Energy Applications (C)  
  *Aaron Seibel, Lockheed Martin Corporation*  |
| 1200   | Lunch at Hyatt                                                       |

### COUNTER DE WEAPONS

**HEL Detection and Avoidance**

**Limited Distribution D / Open**
Hyatt, Cypress I - II
Chairs: Joe Watkins, US Naval Academy

| Time   | Event                                                                 |
|--------|                                                                      |
| 0630   | Breakfast at Hyatt Regency                                           |
| 0700   | Registration at Hyatt Regency                                        |
| 0800   | Program Status on the Helios Counter Directed Energy Weapon System (D)  
  *Brian Goldberg, Adsys Controls, Inc*        |

**SESSION IS NOW OPEN**

| Time   | Event                                                                 |
|--------|                                                                      |
| 0825   | Atmospheric Absorption and Thermal Blooming Measurements using High-Power,  
  Single-Mode Fiber Lasers (A)  
  *Richard Fischer, Naval Research Laboratory* |
| 0850   | Development of a Digital Evaluation Methodology for C-DEW Assessment (A)  
  *Michael Cathcart, Georgia Tech*              |
| 0915   | A COMSOL Model of Laser Damage Evolution due to High Energy Laser Irradiation of  
  Partially Absorptive Materials (A)  
  *Peter Joyce, U.S. Naval Academy*             |
| 0940   | Break                                                                |
| 1010   | Isolating Thermal and Strain Responses in Composites Using an Array of Embedded  
  Fiber Bragg Grating Temperature Sensors (A)  
  *Brian Jenkins, US Naval Academy*             |
| 1030   | Detection of Optical Radiation Using Photoconductors in an RF Switching Network (A)  
  *Deborah Mechtel, US Naval Academy*           |
| 1055   | High Energy Laser Mitigation by Degrading Atmospheric Transmission (A)  
  *Jonathan Gustafsson, NPS*                   |
| 1120   | Inversion Method for Laser Parameter Extraction with Phenomenological Model  
  Based on Off-Axis Sensor Measurements (A)  
  *Vaibhav Kukreja, NPS*                       |
<p>| 1200   | Lunch at Hyatt                                                       |</p>
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EMPLOYMENT OF DE WEAPONS
Operational Integration I
Limited Distribution D
Hyatt, Windjammer II - IV
Chair: Kraig Sheetz, US Military Academy
0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0800 HELM D Testing, Employment, and the Challenges that Accompany Directed Energy Weapon Systems (C)
Randy Lewis, USA SMDC
0830 Improvised Microwave System (D)
Gunnar Tamm, U.S. Military Academy
0900 Integration of the High Energy Laser into the Virginia Class Submarine (D)
James Johnson, Naval Postgraduate School
1000 Standoff Detection of Explosives by Laser Raman Spectroscopy (D)
Paul Pelligrino, Army Research Laboratory
1200 Lunch at Hyatt

INTEL
INTEL Session
Secret
NPS, Ingersol
0900 Worldwide Laser Weapon Developments
1000 Worldwide Radio Frequency Weapon (RFW) Developments
1200 Lunch at Hyatt

HEL LETHALITY
Material Interaction / High Fidelity Modeling
Limited Distribution D
NPS, Glasgow Hall
Chair: TBD
0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0730 Limited Buses to NPS
0800 Penetration Analysis of Experimental Data with Analytical Methods (D)
Mike Libeau, Naval Surface Warfare Center
0830 Modeling the Effect of Laser Interactions on the Strength and Failure of High Strength Aluminum Alloys (A)
Jeffrey Florando, Lawrence Livermore National Laboratory
0900 Break
Target Vulnerability Assessment
Secret
0900 An Analysis of High Energy Laser (HEL) Effects on a Unmanned Aerial System Aimpoint of Interest (S-C)
1000 HEL Vulnerability Assessment of an Unmanned Aerial System (S-D)
1030 Dynamic Engagement Modeling in the Effectiveness ToolBox (ETB) (C)
1200 Lunch at Hyatt
WEDNESDAY AFTERNOON

BEAM CONTROL

Models and Components
Limited Distribution D
Hyatt, Spyglass I
Chair:  Leslie Chrzan, Moog CSA Engineering
1300  Methods for Latency-Tolerant Adaptive Optics (A)
      William Burns, University of Notre Dame
1325  Experimental Characterization of Radiation Distribution in a Power-Scalable Phase-Locked Fiber Laser Array (A)
      Andy Motes, Schafer Corporation
1355  Membrane-Based Deformable Mirrors for High Power Laser Systems (D)
      Jesse Jameson, MZA Associates Corporation
1420  Fast Real-Time Shack-Hartmann Wavefront Sensor using COTS Hardware (C)
      Justin Mansell, MZA Associates Corporation
1445  Use of High Speed Tip/tilt/Focus Optical Phase Array for Jitter Correction of a Hybrid Beam Director (C)
      Andrew McKie, Raytheon
1510  Ultrashort Pulse Laser Beacon for Deep Turbulence HEL Propagation (C)
      Joseph Penano, Naval Research Laboratory

WEDNESDAY AFTERNOON

EMPLOYMENT OF DE WEAPONS

Operational Integration II
Open
Hyatt, Windjammer II - IV
Chair:  Lou Florence, US Military Academy
1300  Assessment of Laser Kill Chain and Inclusion in Layered Defense (A)
      Mitch Pawlowski and Bradley Fiedler, Naval Postgraduate School
1330  Design and Construction of Pre-Stage Magnetic Coil to Enhance Helicon Mode Excitation and Data Acquisition Software on the Helicon Plasma Experiment (HPX) (A)
      Justin Sherman, US Coast Guard Academy
1400  Updates on the Optical Emission Spectroscopy and Thomson Scattering Investigations on the Helicon Plasma Experiment (HPX) (A)
      Omar Duke-Tinson, US Coast Guard Academy
WEDNESDAY AFTERNOON

COUNTER DE WEAPONS

Hardened Materials and Structures I
Secret
NPS, ME Auditorium

1300  AFRL Materials and Manufacturing Directorate Directed Energy Structural Hardening Program Overview (S-N/F-D)

1330  Materials Coatings and Structures to Counter the Effects of HEL Weapons (S-N/F-D)

1400  Measurement of Carbon-Fiber Epoxy-Matrix Laminate Recession Rates in High-Irradiance Laser Exposures (S-D)

1430  Break

1500  Understanding and Improving the HEL Survivability of Lightweight Structural Composite Materials (S-D)

1450  Susceptibility of Graphene Devices

1600  Mitigation Analysis for High Energy Electron Impact on Electronic Systems (C)

DE MODELING & SIMULATION

Physics Based Modeling and Simulation
Open / Limited Distribution D
Hyatt, Spyglass II
Chair: TBD

1300  Partial Spatial and Temporal Coherence and Implications for Active Track and Active Imaging (A)
Richard Holmes, Boeing

1330  Practical Optically Pumped Gas Lasers for MIDIR and LWIR Applications (A)
Robert Campbell, irptechnology

1400  Signal Distortion Control in Transmission Lines Coupled to Nonlinear Circuits (A)
Ioana Triandaf, Naval Research Laboratory

1430  Computational and Experimental Study on Laser Ablation in Aluminum and Ni-Based Metal Alloys (D)
Sangwook Sihn, University of Dayton Research Inst.

1500  Break

1530  Microphysical Models of Thermal Dynamic BRDF (C)
Brian Hoover, Advanced Optical, Inc.

1600  Performance of Coherent Beam Combining and Power Usage (A)
Andy Motes, Schafer Corporation
WEDNESDAY AFTERNOON

TEST AND EVALUATION

Test Capabilities and Instrumentation
Open / Limited Distribution D
Hyatt, Cypress I - II
Chair: Pat Cannon, AEgis Technologies

1300 Directed Energy Test Science and Technology (DET S&T) Project Overview (A)
Trung Nguyen, PEO STRI

1330 Irradiance Collection and Reporting System (ICRS) (A)
John Le Sage, SemQuest Inc

1400 The Integrated Atmospheric Characterization System (IACS) (A)
Gary Gimmestad, Georgia Tech Research Institute

1430 MACS Development Update: the Maritime Atmospheric Characterization System
Steve Hammel, SPAWAR Systems Center

1500 Break

1530 Reconfigurable Target Board and In-Situ Irradiance Sensors (D)
Melissa Archuleta, AEgis Technologies Group

1600 Reconfigurable Onboard DE Sensor Suite (D)
Jim Luke, AEgis Technologies Group

SESSION IS NOW OPEN

1630 SoCal2013--Propagation Measurements in a Maritime Environment (A)
Kevin McBryde, SPAWAR Systems Center

1700 On-Board Irradiance Diagnostics (OBID) Mortar for Airborne HEL Beam Profile Measurement (A)
Saivosh Hamadani, SARA, Inc

THURSDAY MORNING

BEAM CONTROL

Aero-Optics/Aero-Effects
Limited Distribution D
Hyatt, Spyglass I
Chair: Lewis DesAndre, Naval Postgraduate School

0630 Breakfast at Hyatt Regency

0700 Registration at Hyatt Regency

0800 Deformable Mirror Requirements for Compensating Aero-Optic Wavefronts in Subsonic and Transonic Conditions (D)
Jason Schmidt, MZA Associates Corporation

0825 Supersonic Turret Aero-Optics Testing (D)
David Gorskey, MZA Associates Corporation

0850 Aero-Optical Tilt Compensation using High Speed Wavefront Sensing (D)
Joseph Riley, MZA Associates Corporation

0915 Break

Acquisition, Pointing and Tracking
Limited Distribution D
Chair: David Dayton, Applied Technology Associates

0945 Results of the Hybrid Tracker Field Demonstration (C)
David Dayton, Applied Technology Associates

1010 Mitigation of Illuminator Scintillation in Laser Illuminated Tracking Systems (D)
David Dayton, Applied Technology Associates

1035 Target Rotation and Aimpoint Correction using Enhanced Reconstruction (TRACER) (C)
Eric Magee, MZA Associates Corporation

1100 Development of a Hardware-in-the-Loop Tracker Evaluation System Using the MZA TrADES Platform (D)
Brian Henderson, MZA Associates Corporation

1130 Poster Session and Box Lunch
THURSDAY MORNING

COUNTER DE WEAPONS

Hardened Materials and Structures II
Limited Distribution D / Open
Hyatt, Spyglass II
Chair: Jonathon Vernon, Air Force Research Laboratory

0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0800 Effect of Thermally Conductive Interfaces on Damage Evolution in Composites Under HEL Exposure (D)
Keith Slinker, Air Force Research Laboratory
0830 New Broadband Nonlinear Optical Dyes for Laser Damage Protection in Various Pulse Width Regimes (D)
Timothy Pritchett, Army Research Laboratory
0900 Nonlinear Optical Bulk Nano-Composites for C-DEW Applications (C)
Antonio Ting, Naval Research Laboratory
0930 Break

SESSION IS NOW OPEN

1000 Metamaterials for Perfect Reflection (A)
Brian Slovick, SRI International
1030 Numerical Studies of Beam Propagation in a Metamaterial-Driven Lens (A)
Hong Zhou, Naval Postgraduate School
1100 Nanoscale Technique for Enhanced Heat Transfer for Material Protection (A)
Keith Prussing, Georgia Institute of Technology
1130 Poster Session and Box Lunch

EMPLOYMENT OF DE WEAPONS

DE System Support and Employment Policy
Limited Distribution D
Hyatt, Windjammer II-IV
Chair: Lou Florence, US Military Academy

0800 Space Deconfliction Readiness for “Pivot to the Pacific” Laser Weapons (C)
Heather Witts, SERCO, Inc.
0830 The Impact of Satellite Safety Solutions on Laser Weapon Combat Effectiveness (C)
Jerry Bukley, SERCO, Inc.
0900 Distance Support In-Service Engineering for the High Energy Laser (A)
Matthew Sheehan, Naval Postgraduate School
0930 Break
1000 Operation of an Integrated 400kW Electrical Power System and a 240kW Thermal Management System with an Emulated SS HEL Weapon (C)
Fernando Rodriguez, Air Force Research Laboratory

RFDEW CONFERENCE

Secret
NPS, Ingersol

0800 Directed Energy Directorate Survey of Available MIL STD 464C Test Sources (C)
0825 Refurbishment and Target Testing with the ORION System at NSWC Dahlgren (C)
0850 PHASER System Design and Demonstration (C)
0915 Impact of Frequency, Aspect Angle, and Polarization on HPM Susceptibility of Generic Electronic Targets (C)
0940 Break
1010 HPM Susceptibility of Certain Foreign Transmitters (C)
1035 Tests and Demonstration of a United Kingdom Prototype DE System at NSWC Dahlgren (C)
1100 Coupling of Electrostatic Discharge into Buried Wires (C)
THURSDAY MORNING

TEST AND EVALUATION

Instrumentation
Open
Hyatt, Cypress I - II
Chair: Pat Cannon, AEgis Technologies

0630 Breakfast at Hyatt Regency
0700 Registration at Hyatt Regency
0800 Remote HPM Data Acquisition Science and Technology (A)
Jeffrey Schleher, American Systems
0830 Fiber Optic Sensors for Non-Intrusive Diagnostic Measurements of Rail Gun Electric and Magnetic Fields (A)
Tony Garzarella, Naval Research Laboratory
0900 High Sensitivity, All-Dielectric Electric and Magnetic Field Sensors for RF and HPM Applications up to 20 GHz (A)
Dong Ho Wu, Naval Research Laboratory
0930 Break
1000 Non-Intrusive High Voltage Measurement Inside of a Coaxial Cable using a Slab Coupled Optical Sensor (A)
Frederick Seng, Brigham Young University
1030 Compact Hard Tube Vircator (CHTV) High Rep Rate System for In-Chamber Testing (A)
John Mankowski, Texas Tech University
1100 Advanced Non-Intrusive HPM Sensors (A)
Jeffrey Schleher, American Systems
1130 Poster Session and Box Lunch

THURSDAY LUNCH

JOINT SESSION

Poster Session
NPS, King Hall
1130 Poster Session Begins
OPEN POSTERS
2013 Navy C-RAM Test Results and Analysis (A)
Mike Libeau, Naval Surface Warfare Center
LIMITED DISTRIBUTION POSTERS
UAS Tail Boom Vulnerability Testing & Analysis (D)
Chris Heflin, Naval Surface Warfare Center
Penetration Analysis of Experimental Data with Analytical Methods (D)
Mike Libeau, Naval Surface Warfare Center
CLASSIFIED POSTERS
High Energy Laser (HEL) Effects on Copper

THURSDAY AFTERNOON

JOINT SESSION

Wrap Up Plenary Session
NPS, King Hall
1300 HEL Lethality Conference
Christopher Lloyd, NSWCDD
1330 Counter DE Weapons Conference and RF DE Weapons Conference
Sylvia Dorato, HEL Joint Technology Office
1400 Employment of DE Weapons Conference
Lou Florence, US Military Academy
1430 Beam Control Conference
Jim Lasche, Air Force Research Laboratory
1500 Break
1530 DE Modeling and Simulation Conference
Linda Lamberson, Air Force Research Laboratory
1600 DE T&E Conference
Patrick Cannon, AEgis Technologies
1630 RF DE Weapons Workshop
Diana Loree, Air Force Research Laboratory
1700 Symposium Adjourns
Symposium Organizing Committee

Symposium Chairs
Dave Kiel, Nevin Carr

Beam Control Conference
Jim Lasche, Chris Washer

Counter DE Weapons Conference
Sylvia Dorato, Robert Cozzens

DE Modeling and Simulation Conference
Linda Lamberson, Lawrence Lee

Employment of DE Weapons
David Kashinski, Kraig Sheetz, Lou Florence

High Energy Laser Lethality Conference
Robert Roybal, Robert Ulibarri, Dave Loomis

RF DE Weapons Workshop
Diana Loree, Michael Lambrecht

DE T&E Conference
Patrick Cannon, James Keith, Woody Shortt

Security Coordinator
Rhonda Peyton

Symposium Coordinator
Cynnamon Spain

Registration and Payments
Tiffany Bjelke