

DEFENSE



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DEFENSE 2016

Welcome

Welcome to the AIAA Defense and Security Forum (AIAA DEFENSE 2016) at the Johns Hopkins University Applied Physics Laboratory! We are excited to have you participate as we explore the state of our nation's defense strategy, learn how we are evolving to meet threats to our national security and economic stability, and discuss what we must do to build an agile, adaptive, and resilient national defense operation.

This week should stimulate thought-provoking conversations among government leaders, civilian contractors, and academics as we work to learn about government strategies and how we can use those strategies to identify solutions to some of the nation's most pressing national security concerns. A full program of in-depth technical discussions complementing the high-level plenary and panel conversations will provide a great view of the state of the art in national defense strategies, systems, and technologies.

AIAA DEFENSE 2016 promises cutting-edge, classified, technical research presentations and insightful conversations from industry executives, military, and thought leaders about challenges and opportunities associated with defense acquisition and strategy, homeland security, missile systems, smart weapons, and use of unmanned aerial systems – as well as many other components of a strong national defense position.

Everyone involved in the planning of AIAA DEFENSE 2016 has worked hard to develop a robust, timely, and interesting program. We hope you take advantage of the many learning and networking opportunities throughout the week, and we thank you for being a part of this important gathering.

**AIAA DEFENSE 2016 is
proud to feature the
following conferences:**

AIAA Missile Sciences Conference
AIAA Strategic and Tactical Missile
Systems Conference
AIAA National Forum on Weapon
System Effectiveness

Organizing Team

Executive Chairs

Robert (Bob) E. Fitzpatrick, Jr., Raytheon Missile Systems

Laura McGill, Raytheon Missile Systems

Forum Organizing Committee

Robert “Bob” Baker, Office of the Secretary of Defense

Allison Cash, People Tec

Rick Gamble, Aerospace Testing Alliance

Laura McGill, Raytheon Missile Systems

Jim Makarsky, The Boeing Company

Kevin Massey, DARPA

Peter Montgomery, Jacobs Engineering

Technical Program Team

Rick Gamble, Aerospace Testing Alliance, Forum Technical Program Chair

Karen Barker, Office of the Secretary of Defense/Acquisition, Technology and Logistics

Allison Cash, People Tec

Peter Dunn, Massachusetts Institute of Technology

Mark Friedlander, Aerojet Rocketdyne

Kerri Phillips, Johns Hopkins University Applied Physics Laboratory

Tumkur Shivananda, Northrop Grumman Corporation

Michael White, Johns Hopkins University Applied Physics Laboratory



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Forum Overview

	TUESDAY 8 March	WEDNESDAY 9 March	THURSDAY 10 March
0700 hrs	Networking Coffee	Networking Coffee	Networking Coffee
0730 hrs			
0800 hrs	Plenary Session: Welcome and Introductions	Plenary Session: Space Threats Briefing	Plenary Session: UAS in American Air Space Panel Session
0830 hrs	SCO Innovations: Meeting Today's Defense Challenges	Breakthrough Technologies in Air and Space	
0900 hrs			
0930 hrs	Networking Coffee Break	Networking Coffee Break	Networking Coffee Break
1000 hrs	Technical Sessions: Innovative Concepts I: Laser Enabled Systems Tactical Missiles Sensor & Spectrum Optimization	Technical Sessions: Targets and Threat Modeling for Weapon Systems Land-Based Strategic Missiles Performance Verification & Validation	Technical Sessions: Land-Based Strategic Missile Modeling Space, Cyber, and Robotics Next Generation Architecture
1030 hrs			
1100 hrs			
1130 hrs			
1200 hrs	Lunch	Lunch	Lunch
1230 hrs			
1300 hrs	Technical Sessions: Sea-Based Strategic Missiles Innovative Concepts II - Tools and Techniques New Weapon Systems Testing Venues and Methods	Technical Sessions: Threats, Targets & Countermeasures Hypersonic Concepts and Technologies Weapon Systems Test and Evaluation	Technical Sessions: Weapon Systems Effectiveness Modeling and Simulation Improving Kill Engagement Cybersecurity
1330 hrs			
1400 hrs			
1430 hrs			
1500 hrs			
1530 hrs	Networking Coffee Break	Networking Coffee Break	
1600 hrs	Plenary Session: DoD Operational Energy Strategy Briefing	Plenary Session: Test & Evaluation Briefings	
1630 hrs			
1700 hrs			
1730 hrs			
1800 hrs	Welcome Reception		
1830 hrs			

Sponsors and Supporters

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AEROSPACE
A M E R I C A

Plenary Sessions Speakers

Get the big picture on the defense and weapons community from the leading authorities in the field during these high-level discussions and presentations.

Tuesday, 8 March

0800 hrs

Auditorium

Plenary Session

SCO Innovations: Meeting Today's Defense Challenges

William Roper, Director of Strategic Capabilities, Office of the Secretary of Defense

1600 hrs

Auditorium

Plenary Session

DoD Operational Energy Strategy

Amanda Simpson, Deputy Assistant Secretary of Defense for Operational Energy

Wednesday, 9 March

0800 hrs

Auditorium

Plenary

Space Threats

William J. Donnelly III, Assistant Division Head, Space Systems and Technology Division, MIT Lincoln Laboratory

Breakthrough Technologies in Air and Space

Pamela Melroy, Deputy Director, Tactical Technology Office, DARPA

1600 hrs

Auditorium

Plenary

Operational Testing of Space Systems in a Contested Space Environment

Mitch Crosswait, Deputy Director, Net-Centric Systems and Missile Defense Systems, DOT&E

Test and Evaluation (Possibilities)

George Rumford, Program Manager, Test and Evaluation/S&T Program, Department of Defense

Thursday, 10 March

0800 hrs

Auditorium

Plenary

UAS in American Air Space Panel

Moderator: **John Langford**, Chairman and CEO, Aurora Flight Sciences

Speakers:

MG Randolph Alles, Assistant Commissioner, Office of Air and Marine, U.S. Customs and Border Protection

Marke "Hoot" Gibson, Senior Advisor, UAS Integration, FAA

Col. Robert P. Huber, Commander, U.S. Army Aeronautical Services Agency (USAASA)



Networking Activities and Security Information

Understanding the importance of networking with colleagues new and old, a series of activities have been planned that will help you connect with current colleagues and new acquaintances.

Coffee Breaks

Coffee breaks allow even more time for making new contacts, continuing discussions from sessions, or checking emails and voicemails to keep in touch with the office while you are at the forum. Coffee breaks will be located in the foyer:

Tuesday, 8 March	0700, 0930, and 1530 hrs
Wednesday, 9 March	0700, 0930, and 1530 hrs
Thursday, 10 March	0700 and 0930 hrs

Welcome Reception/Meet the Sponsors Reception

A reception will be held on Tuesday, 8 March, 1730 hrs, in the Kossiakoff Center. Take this opportunity to engage new contacts and refresh old ones, and meet with sponsor representatives at their designated tables.

Luncheon

Luncheons for conference attendees will be held daily in the Kossiakoff Center:

Tuesday, 8 March	1200–1300 hrs
Wednesday, 9 March	1200–1300 hrs
Thursday, 10 March	1200–1300 hrs

Attendance at this forum is restricted to U.S. citizens who possess a final SECRET security clearance verified by the Security Office Coordinator.

Security Badge

A photo security badge is required for admittance to the conference sessions. Each attendee will be required to produce a driver's license, military I.D., or company photo I.D. prior to receiving a conference badge. Badges must be worn at the conference.

Security Restrictions

Electronic devices or electronic equipment of any kind—including cell phones, radios, Fitbits, PDAs, laptops, cameras, video/audio recording equipment, and two-way pagers and devices—are **NOT** allowed in the session rooms. One-way pagers must be placed on vibrate during the sessions.

Note-taking is not permitted in or around the conference sessions. Books, magazines, fliers, brochures, and other paper products will not be allowed in the session rooms.

Luggage, briefcases, and other large cases will not be allowed in the conference area. Please leave these items in your car or hotel as storage is not available at the conference center. Small handbags, purses, and personal possessions will be inspected upon entry into the conference area. Security spot checks may be made at any time.



General Information

AIAA Registration and Information Center Hours

The AIAA Registration and Information Center will be located in the foyer of the Kosiakoff Center.

Tuesday, 8 March	0700–1830 hrs
Wednesday, 9 March	0700–1800 hrs
Thursday, 10 March	0700–1500 hrs

Meeting Site

The forum is being held at the Kosiakoff Center located on the Applied Physics Laboratory (APL) campus.

Parking

There is plenty of parking for forum attendees in the Kosiakoff Center parking lot on the lower level.

Employment Opportunities

AIAA members can post and browse resumes, browse job listings, and access other online employment resources by visiting the AIAA Career Center at <http://careercenter.aiaa.org>.

Membership

AIAA is your vital lifelong link to the collective creativity and brainpower of the aerospace profession and a champion for its achievements—and nonmembers who pay the full conference registration fee will receive their first year's AIAA membership at no additional cost! Students who are not yet members may apply their registration fee toward their first year's student member dues. (Free membership is not included in discounted group-rate registration.)

Nondiscriminatory Practices

AIAA accepts registrations irrespective of race, creed, sex, color, physical handicap, and national or ethnic origin.



Shaping the Future of Aerospace

AIAA is the world's largest aerospace professional society, serving a diverse range of more than 30,000 individual members from 88 countries, and 95 corporate members. AIAA members help make the world safer, more connected, more accessible, and more prosperous. For more information, visit www.aiaa.org, or follow us on Twitter @AIAA.

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Technical Sessions at a Glance

Abbreviation	Title	Date	Start Time	Location
Cybersecurity, Space and Robotics				
21-CYB-1	Cybersecurity Vulnerability Assessments	10-Mar	1300 hrs	Room 7/8
19-SCR-1	Space, Cyber, and Robotics	10-Mar	1000 hrs	Room 7/8
Hypersonics				
13-HYTASP-1	Hypersonic Concepts and Technologies	9-Mar	1300 hrs	Room 7/8
Innovative Concepts				
2-ICT-1	Innovative Concepts I: Laser Enabled Systems	8-Mar	1000 hrs	Auditorium
5-ICT-2	Innovative Concepts II - Tools and Techniques	8-Mar	1300 hrs	Room 7/8
Missile Defense				
3-MD-1	Sensor & Spectrum Optimization	8-Mar	1000 hrs	Room 5/6
10-MD-2	Performance Verification & Validation	9-Mar	1000 hrs	Room 5/6
14-MD-3	Threats, Targets & Countermeasures	9-Mar	1300 hrs	Auditorium
18-MD-4	Next Generation Architecture	10-Mar	1000 hrs	Room 5/6
Plenary Sessions				
1-PLNRY-1	SCO Innovations: Meeting Today's Defense Challenges	8-Mar	0800 hrs	Auditorium
8-PLNRY-2	Energy in Future Warfighting Systems	8-Mar	1600 hrs	Auditorium
9-PLNRY-3	Space Threats	9-Mar	0800 hrs	Auditorium
16-PLNRY-4	Test and Evaluation	9-Mar	1600 hrs	Auditorium
17-PLNRY-5	UAS in American Air Space Panel	10-Mar	0800 hrs	Auditorium
Strategic Missiles				
6-STRAT-1	Sea-Based Strategic Missiles	8-Mar	1300 hrs	Auditorium
11-STRAT-2	Land-Based Strategic Missiles	9-Mar	1000 hrs	Room 7/8
20-STRAT-3	Land-Based Strategic Missile Modeling	10-Mar	1000 hrs	Auditorium
Tactical Missiles				
4-TACT-1	Tactical Missiles	8-Mar	1000 hrs	Room 7/8
Weapon Systems				
7-WS-1	New Weapon Systems Testing Venues & Methods	8-Mar	1300 hrs	Room 5/6
12-WS-2	Targets and Threat Modeling for Weapon Systems	9-Mar	1000 hrs	Auditorium
15-WS-3	Weapon Systems Test & Evaluation	9-Mar	1300 hrs	Room 5/6
23-WS-4	Weapon Systems Effectiveness Modeling and Simulation	10-Mar	1300 hrs	Auditorium

Tuesday	
Tuesday, 8 March 2016	
1-PLINRY-1 0800 - 0930 hrs	SCO Innovations: Meeting Today's Defense Challenges William Roper Director of Strategic Capabilities, Office of the Secretary of Defense
Tuesday, 8 March 2016	
2-ICT-1	Innovative Concepts I: Laser Enabled Systems
Chaired by: M. WHITE, The Johns Hopkins University Applied Physics Laboratory 1000 hrs AIAA-Defense2016-9000 Photonics-enabled Millimeter-wave Communication Systems J. Kalkavage, E. Adles, J. Nonzer, T. Clark, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1030 hrs AIAA-Defense2016-9001 Lasercomm Terminal Architecture for High-Bandwidth Terrestrial Communications K. Souza, J. Juarez, A. Brown, Johns Hopkins University Applied Physics Laboratory, Laurel, MD
1100 hrs AIAA-Defense2016-9002 Beacon Modulation for LPD/LPI Free-Space Optical Communications R. Venkat, M. Reeves, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	Auditorium
Tuesday, 8 March 2016	
3-MD-1	Sensor & Spectrum Optimization
Chaired by: H. BURKE, MIT Lincoln Laboratory 1000 hrs AIAA-Defense2016-9004 Sensor Resource Management for Multi-Target Tracking in Raid Scenario A. Verna, Knowledge Based Systems, Inc., College Station, TX; M. Akella, University of Texas, Austin, Austin, TX; J. Freeze, P. Benjamin, Knowledge Based Systems, Inc., College Station, TX; G. Nivo, Legacy PDS, Laguna Miguel, CA	1030 hrs AIAA-Defense2016-9005 The Broadband Challenge for Next Generation Electronic Warfare for Fleet Defense A. Wynn, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA
1100 hrs AIAA-Defense2016-9006 The Joint Standard Instrumentation Suite: Improving the Acquisition of Live-Fire Missile Signature Data J. McMorrow, Center for Countermeasures, White Sands Missile Range, NM; D. Brown, R. Hiers, Aerospace Testing Alliance, Arnold AFB, TN	1130 hrs AIAA-Defense2016-9007 Missile Defense Countermeasure Design, Characterization and Execution J. Coombs, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA
Tuesday, 8 March 2016	
4-TACT-1	Tactical Missiles
Chaired by: S. BLASHILL, NAVAIR and M. FRIEDLANDER, Aerojet Rocketdyne 1000 hrs AIAA-Defense2016-9008 High Performance Propulsion Insensitive Munitions Technology Goals and Gaps S. Blashill, Naval Air Warfare Center, China Lake, CA	1030 hrs AIAA-Defense2016-9009 The Demands of Increased Tactical Motor Performance Impact on Process Variability S. Wallace, Lockheed Martin Corporation, Grand Prairie, TX
1100 hrs AIAA-Defense2016-9010 Processing Iepanoll Propellants using Resonant Acoustic® Mixing Technology L. Merriman, A. Nelson, M. Bird, M. Celestine, D. Turnbough, Naval Air Warfare Center, China Lake, CA	1130 hrs AIAA-Defense2016-9011 Mix-in-Case Processing of Plastic Bonded Explosives Using Resonant Acoustic® Mixing Technology A. Nelson, Naval Air Warfare Center, China Lake, CA
Tuesday, 8 March 2016	
5-ICT-2	Innovative Concepts II - Tools and Techniques
Chaired by: M. WHITE, The Johns Hopkins University Applied Physics Laboratory 1300 hrs AIAA-Defense2016-9012 Naval Surface Ship Integrated EO/IR Sensor System and Fire Control Model R. Sova, N. Beaser, R. Bourgeois, T. Holley, W. Ham, T. Miller, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; et al.	1330 hrs AIAA-Defense2016-9013 Optimized Maneuvers and Countermeasures for Specialized Defensive Loyal Wingman J. Torf, R. Carr, R. Cobb, Air Force Institute of Technology, Wright-Patterson AFB, OH
1400 hrs AIAA-Defense2016-9014 New OASuW Weapon Exploratory Analysis J. Schwartz, E. Adelzai, J. Heagy, Institute for Defense Analyses, Alexandria, VA	1430 hrs AIAA-Defense2016-9015 Development of a Transient Thermal Analysis Software Toolset for Thermal Protection System Evaluation W. Coiter, J. Stutts, Kratos Defense & Security Solutions, Inc., San Diego, CA
1500 hrs AIAA-Defense2016-9016 Use of an Adaptive Power System to Improve the Electromagnetic Railgun Pulse-Forming Network Input Power Profiles T. Boehman, D. Temkin, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	Room 7/8

Tuesday, 8 March 2016		Sea Based Strategic Missiles- Topics		Auditorium
6-STRAT-1 Chaired by: M. MAGLICH, USN Strategic Systems Programs and J. SNYDER, Lockheed Martin Space Systems				
1300 hrs AIAA-Defense2016-9017 Affordable Nuclear Strategic Capability Modernization J. Snyder, A. Herzl, Lockheed Martin Corporation, Denver, CO	1330 hrs AIAA-Defense2016-9020 Transforming C-band Radar Weather Scans into Estimates of Liquid-Water Content M. Anderson, M. Gillum, Naval Surface Warfare Center, Dahlgren, VA; J. Schmidt, Naval Research Laboratory, Monterey, CA			
Tuesday, 8 March 2016				
7-WS-1 Chaired by: O. YAKABOSKI, United States Air Force and A. CASH, People Tec				
1300 hrs AIAA-Defense2016-9022 Penetrating Weapon Survivability Envelope Study J. Perry, Applied Research Associates, Inc., Albuquerque, NM; O. Yakaboski, J. Etchling, U.S. Air Force, Eglin AFB, FL; J. Wertz, A. Olfiant, C. Doollittle, Applied Research Associates, Inc., Albuquerque, NM, et al.	1330 hrs AIAA-Defense2016-9023 Development of the High Explosive Survivability Test (HEST) J. Williams, Air Force Research Laboratory, Eglin AFB, FL	1400 hrs AIAA-Defense2016-9024 Aiding Technology Transition by using Rapid, Low Cost Technology Testbed Aircraft M. McCormack, 586th Flight Test Squadron, Holloman AFB, NM	1430 hrs AIAA-Defense2016-9025 The Advanced Weapons Effects Test Capability (AWETC) - A New Paradigm in Warhead Arena Testing S. Musteric, 96th Test Systems Squadron, Eglin AFB, FL	1500 hrs AIAA-Defense2016-9064 Cooled Gas Generator Technology D. Fox, Orbital ATK, Elkhon, MD
Tuesday, 8 March 2016				
8-PLNRY-2 1600 - 1730 hrs Energy in Future Warfighting Systems Amanda Simpson Deputy Assistant Secretary of Defense for Operational Energy				
Wednesday				
Wednesday, 9 March 2016				
9-PLNRY-3 0800 - 0930 hrs Threats Plenary <i>Space Threats</i> William J. Donnelly III Assistant Division Head, Space Systems and Technology Division, MIT Lincoln Laboratory <i>Breakthrough Technologies in Air and Space</i> Pamela Melroy Deputy Director, Tactical Technology Office, DARPA				
Wednesday, 9 March 2016				
10-MD-2 Chaired by: K. PHILLIPS, The Johns Hopkins University Applied Physics Laboratory				
1000 hrs AIAA-Defense2016-9027 Space Simulation Upgrades to Meet Imaging Sensor Test Requirements in the AEDC Space Systems Test Facility H. Lowry, R. Nicholson, S. Steely, K. Mead, J. Cloybrook, Arnold Engineering Development Center, Arnold AFB, TN	1030 hrs AIAA-Defense2016-9028 VI&A for Simulation Input Data for System-of-Systems Hardware-In-The-Loop Applications G. Parsons, J. Farris, D. Parsons, C. Conkey, Missile Defense Agency, Huntsville, AL	1100 hrs AIAA-Defense2016-9029 Federation or System-Level Accreditation Challenge for the Ballistic Missile Defense System (BMDS) Models and Simulations (M&S) A. Dent, J. Clark, J. Farris, Operational Test Agency, Colorado Springs, CO	1130 hrs AIAA-Defense2016-9030 The Ballistic Missile Defense System Operational Test Agency's Use of Mission-oriented Intended Uses for Modeling and Simulation Accreditation J. Clark, J. Farris, A. Dent, G. Romanczuk, Operational Test Agency, Huntsville, AL	Room 5/6

Wednesday, 9 March 2016		Land Based Strategic Missiles Topics		Room 7/8
11-STRAT-2				
Chaired by: J. BEAN, U.S. Air Force, ICBM Systems Directorate and T. SHIVANANDA, Northrop Grumman Aerospace Systems				
1000 hrs AIAA-Defense2016-9031 The Evolution of Model-Based Systems Engineering for Intercontinental Ballistic Missile Systems L. Bethel, M. Bott, J. Martinez, Northrop Grumman Corporation, San Bernardino, CA	1030 hrs AIAA-Defense2016-9032 Programmed Depot Maintenance of ICBM Guidance Accelerometers K. Anderson, Air Force Nuclear Weapons Center, Hill AFB, UT; C. Barrow, The Boeing Company, Hill AFB, UT	1100 hrs AIAA-Defense2016-9033 Multidisciplinary Design Optimization of Strategic Missile Systems M. Javier, J. Stark, C. Kim, M. Bott, Northrop Grumman Corporation, Ogden, UT	1130 hrs AIAA-Defense2016-9034 Lessons Learned During the Development of the MK21 NoseTip M. Olmos, S. Saterlie, Northrop Grumman Corporation, San Bernardino, CA	
Wednesday, 9 March 2016				
12-WS-2				
Chaired by: J. LAFLEUR, Sandia National Laboratories and J. ELDER, Modern Technology Solutions, Inc				
1000 hrs AIAA-Defense2016-9035 Analysis of IR Imagery of Debris from a Thrust Terminated Booster K. Siegrist, M. Thomas, P. Green, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1030 hrs AIAA-Defense2016-9036 Counter UAS Modeling & Simulation – Does damage result in defeat or only degradation? Z. Hall, T. Kelly, M. Thomas, A. Owens, Army Aviation and Missile Research Development and Engineering Center, Redstone Arsenal, AL; K. Jordan, Torch, Huntsville, AL; K. Norton, Dynetics, Inc., Huntsville, AL; et al.	1100 hrs AIAA-Defense2016-9037 FLITES Scene Generation on Remote Visualization Clusters A. Duffy, Aegis Technologies, Eglin AFB, FL; C. Coker, Air Force Research Laboratory, Eglin AFB, FL	1130 hrs AIAA-Defense2016-9038 Gray Eagle UAV CFD Modeling Z. Hall, Army Aviation and Missile Research Development and Engineering Center, Redstone Arsenal, AL	Auditorium
Wednesday, 9 March 2016				
13-HYTASP-1				
Chaired by: M. WHITE, The Johns Hopkins University Applied Physics Laboratory				
1300 hrs AIAA-Defense2016-9039 Wind Tunnel Measurements of Hypersonic Transition for Prediction of Aerodynamically-Induced Vibration S. Berez, K. Cooper, J. Herffing, R. Spillers, Sandia National Laboratories, Albuquerque, NM	1330 hrs AIAA-Defense2016-9040 Presentation of a Trajectory Optimization Methodology M. Syrma, Air Force Research Laboratory, Eglin AFB, FL	1400 hrs AIAA-Defense2016-9041 Simulation and Operation Requirements For a High-Performance Mid-Pressure Arc Heater Supporting Advanced Hypersonic Systems D. Smith, Arnold Engineering Development Complex, Arnold AFB, TN	1430 hrs AIAA-Defense2016-9042 Delaying Transition using 2D Roughness Strips in the Boeing/AFOSR Mach-6 Quiet Tunnel S. Schneider, J. McKenzie, Purdue University, West Lafayette, IN	1500 hrs AIAA-Defense2016-9043 A Review of Ground Test Programs in LENS Hypervelocity Tunnels for Vehicle Development and Code Evaluation M. Holden, CUBRK, Buffalo, NY
Wednesday, 9 March 2016				
14-MD-3				
Chaired by: D. HAYASHI, Raytheon Missile Systems				
1300 hrs AIAA-Defense2016-9044 Recent Electronic Warfare Observations K. Patterson, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA	1330 hrs AIAA-Defense2016-9045 Targets and Countermeasures: Recent Threat Observations B. Sheeks, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA	1400 hrs AIAA-Defense2016-9046 Optical Data Collection and Analysis J. Vornehm, D. Hunter, K. Wolff, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA	1430 hrs AIAA-Defense2016-9047 Probabilistic modeling of scatter from discrete random media R. McCargar, R. Awadallah, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1500 hrs AIAA-Defense2016-9048 The Towed Airborne Plume Simulator (TAPS): Open Air Testing of Installed IRCM Sensors J. Hubbard, J. McMorrow, Center for Countermeasures White Sands Missile Range, NM; R. Hiers, Aerospace Testing Alliance, Arnold AFB, TX

Wednesday, 9 March 2016		Weapon Systems Test & Evaluation		Room 5/6
Chaired by: R. ADDIS, Lawrence Livermore National Laboratory and P. DUNN, Weidlinger Associates Inc				
1300 hrs AIAA-Defense2016-9049 Guidance and Navigation Evaluation at the 746th Test Squadron C. Armani, I. Nacira, J. Yeom, 746th Test Squadron, Holloman AFB, NM	1330 hrs AIAA-Defense2016-9050 Developing Large Quiet Tunnels at Mach 6 and Mach 8 S. Schneider, Purdue University, West Lafayette, IN; T. Juliano, T. Corke, Notre Dame University, Notre Dame, IN	1400 hrs AIAA-Defense2016-9051 Coupled Calculations of Embedded Weapon Effects on Partially Buried Structure, With Comparisons to Scaled Testing Results E. Hansen, P. Haggig, D. Tennant, Weidlinger Associates, Inc., Marina del Rey, CA	1430 hrs AIAA-Defense2016-9052 Wind Tunnel Test Campaign for a Hypersonic Glide Body A. Voegelé, B. Williams, M. Conway, The Aerospace Corporation, El Segundo, CA	1500 hrs AIAA-Defense2016-9053 Net Centric Weapons Test Capability J. Lucas, Air Force Test Center, Eglin AFB, FL
Wednesday, 9 March 2016				
16-PLNRY-4 1600 - 1730 hrs		Test and Evaluation (Possibilities)		
<p style="text-align: center;">Mitch Crosswait Deputy Director, Net-Centric Systems and Missile Defense Systems, DOT&E</p> <p style="text-align: center;">George Rumford PM for the Department of Defense T&E/S&T Program</p>				
Thursday				
Thursday, 10 March 2016				
17-PLNRY-5 0800 - 0930 hrs		UAS in American Air Space Panel		
<p>Moderator: John Langford, Chairman and CEO, Aurora Flight Sciences</p> <p>Panelists:</p> <p style="text-align: center;">MG Randolph Alles Assistant Commissioner, Office of Air and Marine U.S. Customs and Border Protection</p> <p style="text-align: center;">Marke "Hoot" Gibson Senior Advisor, UAS Integration FAA</p> <p style="text-align: center;">TBA DoD Policy Board for Federal Aviation</p>				
Thursday, 10 March 2016				
18-MD-4		Next Generation Architecture		
Chaired by: W. ALBAN, Boeing Defense, Space & Security				
1000 hrs AIAA-Defense2016-9055 Architecture Options for Cost-Effective Integrated Air & Missile Defense D. Gehr, L. Shampine, Raytheon Company, Tucson, AZ	1030 hrs AIAA-Defense2016-9056 UAV Based Interceptors and Lasers as Complementary for Boost Phase Intercept of Rogue Nation Missiles L. Conroy, Conroy Tech, LLC, Fort Washington, MD; M. Solita, SRM Consulting, LLC, Sun Lakes, AZ; D. Tietz, New Vistas International, LLC, Austin, TX	1100 hrs AIAA-Defense2016-9077 Applying an Operational Success Framework to Space Safety D. McKnight, Integrity Applications, Inc., Chantilly, VA		

Thursday, 10 March 2016		Space, Cyber, and Robotics		Room 7/8
Chaired by: K. BARKER, OSD/Test Resource Management Ctr Support				
1000 hrs AIAA-Defense2016-9057 A Preliminary Study of Inadvertent Illumination and Damage Risks Posed to Satellite Optical Sensors by Classes of Laser Systems P. Shiver, K. Yamamoto, C. Cogburn, Metatech Corporation, Albuquerque, NM; J. Davis, J. Montoya, Ball Aerospace & Technologies Corporation, Albuquerque, NM; C. Jones, Metatech Corporation, Albuquerque, NM; et al.	1030 hrs AIAA-Defense2016-9058 Efficient Secure Program Planning for Intelligent Information Operations P. Braden, U.S. Air Force, San Antonio, TX	1100 hrs AIAA-Defense2016-9059 Decentralized Control Algorithms for Cooperative Target Engagement With Low-Cost Robotic Weapons Systems K. Volle, J. Rogers, Georgia Institute of Technology, Atlanta, GA; K. Brink, Air Force Research Laboratory, Eglin AFB, FL	1130 hrs AIAA-Defense2016-9076 DARPA Space Logistics for Resiliency G. Roesler, DARPA, Arlington, VA	
Chaired by: J. BEAN, U.S. Air Force, ICBM Systems Directorate and T. SHIVANANDA, Northrop Grumman Aerospace Systems				
1000 hrs AIAA-Defense2016-9060 Creating a Model-Based Engineering Environment for Strategic Missile Systems M. Bott, Northrop Grumman Corporation, Ogden, UT; K. Young, Northrop Grumman Corporation, Melbourne, FL	1030 hrs AIAA-Defense2016-9061 MK12A and MK21 Finite Element Model Validation Lessons Learned K. O'Hara, C. Rockefeller, D. Hill, Lockheed Martin Corporation, King of Prussia, PA	1100 hrs AIAA-Defense2016-9062 Epoch-era Analysis of Strategic Missile Systems J. Stork, M. Bott, Northrop Grumman Corporation, Ogden, UT	1130 hrs AIAA-Defense2016-9063 Multi-discipline Analysis of Flight Capability of Damaged Missile Systems R. Harthorn, Northrop Grumman Corporation, San Bernardino, CA	Auditorium
Chaired by: J. MCNEIL				
1300 hrs AIAA-Defense2016-9071 DOT&E Cybersecurity Assessments D. Aland, DOT&E, Alexandria, VA	1330 hrs AIAA-Defense2016-9072 Active Cyber Defense of Weapon Systems B. Bryant, SAF/CIO A6, Task Force Cyber Secure, Fairfax Station, VA	1400 hrs AIAA-Defense2016-9073 NAVAIR Cybersecurity Vulnerability Assessments A. Tanverdi, P. Pringle, NAVAIR, Point Mugu, CA	1430 hrs AIAA-Defense2016-9074 Cybersecurity Test and Evaluation and the National Cyber Range J. McNeil, OUSD(AT&L)-TRMC, Alexandria, VA	1500 hrs AIAA-Defense2016-9075 Aircraft Cyber Threat Working Group S. Jones, 412th TW, Edwards AFB, CA
Chaired by: A. CASH, People Tec and P. DUNN, Weidinger Associates Inc				
1300 hrs AIAA-Defense2016-9067 Fast-Running Model Enhancements for Predicting Synergistic Damage Effects for Multiple Penetrator Scenarios D. Oakley, Army Aviation and Missile Research Development and Engineering Center, Huntsville, AL; A. Cash, G. Killough, A. Witzig, D. Hyams, PeopleTec, Inc., Huntsville, AL	1330 hrs AIAA-Defense2016-9068 Effectiveness of Blast Attack on Personnel Revetments E. Pburn, O. Yokoboski, Air Force Life Cycle Management Center, Eglin AFB, FL	1400 hrs AIAA-Defense2016-9069 Ontology-enabled Cost Tradeoffs in Model-Based Conceptual Missile Design K. Lynch, R. Ramsey, G. Ball, Raytheon Company, Tucson, AZ; M. Schmitt, Georgia Institute of Technology, Atlanta, GA	1430 hrs AIAA-Defense2016-9070 Innovative Synthetic Environments for Leihality Effectiveness and Collaboration G. Romanczuk, J. Farris, Army Aviation and Missile Research Development and Engineering Center, Huntsville, AL; J. Clark, A. Dent, Nou Systems, Inc., Huntsville, AL	Auditorium

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