

# Multi-Domain Operations Workshop

July 16 – Pre-workshop Tutorials  
July 17 – 18 General and Technical Sessions  
Hilton Mark Center, Alexandria, VA

## *The MDO Continuum: Testing, Experimentation, and Training*

### Agenda (as of July 10<sup>th</sup>)

#### Monday, July 15 – Travel Day

3:00 PM – 5:00 PM      Registration Open

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#### Tuesday, July 16 – A Day of Pre-workshop Tutorials

Tutorials allow individuals to take advantage of increasing their continuing professional education credits. Tutorials require a separate registration from the Workshop. Read Abstracts online.

6:30 AM – 5:00 PM      Registration Open

9:00 AM – 4:30 PM      Exhibits Set-up

#### 8:00 AM – 12:00 PM      **Tutorials Morning Sessions**

T&E Fundamentals and CTEP Foundations Part I

**CUI**      **Mission Engineering**

Laser Systems Propagation T&E Challenges

Cognitive Electronic Warfare

Digital Engineering

Lunch on-own

#### 1:00 PM – 5:00 PM      **Tutorials Afternoon Sessions**

Fundamentals of T&E – Part 2

Contracting Opportunities in T&E

HSI Methods and Metrics for T&E Professionals

JMETC 101

Test and Evaluation of AI-Enabled Systems

## Wednesday, July 17 – Workshop General and Technical Sessions

6:30 AM – 5:00 PM	Registration Open
8:00 AM – 8:15 AM	Opening Ceremony with the <b>American Legion</b> Posting of the Colors and <b>Kerry O'Malley</b> singing the National Anthem (recorded)  <b>COL Richard Bailer</b> , (USA Ret), ITEA George Washington Chapter President
8:15 AM – 9:00 AM	<b>Christopher C. Collins</b> , SES, Executive Director, Developmental Test, Evaluation, and Assessments (DTE&A)
9:00 AM – 9:45 AM	<b>George J. Rumford</b> , SES, Office of Under Secretary of Defense for Research and Engineering (OUSD(R&E)), Test Resource Management Center (TRMC)
9:45 AM – 10:30 AM	<b>Elmer L. Roman</b> , SES, Director, Mission Integration for Mission Capabilities (MC), Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E))
10:30 AM – 11:00 AM	Break with Exhibitors
11:00 AM – 1:00 PM	<b>Technical Tracks</b>

### TRACK 1      **Strategies for Efficient and Effective Testing** Track Chair: **Erwin Sabile**, Booz Allen Hamilton

Time	Presenter	Presentation
11:00 AM – 11:30 AM	<b>Pritesh Patel</b> , Darkstax CEO	The Use of Digital Twin in T&E Ranges Focused on Multi-Domain Operations
11:30 AM – 12:00 PM	<b>John Haman</b> , Research Staff Member, Operational Evaluation Division, IDA	Framework of Verification, Validation, and Uncertainty Quantification (VVUQ) Testing in support of Digital Twin V&V
12:00 PM – 12:30 PM	<b>Billy Williams</b> , CHEETAS Program Management Office, KBR – Test Resource management Center (TRMC)	Data Transformation - Cloud Hybrid Edge-to-Enterprise Evaluation & Test Analysis Suite (CHEETA)
12:30 PM – 1:00 PM	<b>Matthew G. Goldsbury</b> , CTI Solution Architect, MEERKAT (Merlin Technical Lead)	Electronic Warfare M&S in support of T&E, and a Case for AI/ML for Predicting and Evaluating Non-Kinetic Effects

### TRACK 2      **Electronic Warfare** Track Chair: **Joe Jarzombek**, Acquired Data Solutions

Time	Presenter	Presentation
11:00 AM – 11:30 AM	<b>Matthew Goldsbury</b> , CTI Solution Architect, MEERKAT (Merlin Technical Lead)	EW M&S – JTA and 4-D Visualization for OT&E
11:30 AM – 12:00 PM	<b>Anthony Triolo</b> , Altio Labs	Stochastic grammar representations of cognitive EW threats for T&E
12:00 PM – 12:30 PM	<b>Tilghman Turner &amp; Paul Weimer</b> , Redstone Test Center & Aberdeen Test Center	Creating MDO Environments with D-LVC

12:30 PM – 1:00 PM	<b>Joe Jarzombek</b> , Acquired Data Solutions	From Design to Deployment, accelerate innovation with RF Environment & Mission Simulators
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**TRACK 3 Common Operating Picture Program/Mission Engineering Systems of Systems**  
Track Chair: **Jean Petty**, Department of Homeland Security

Time	Presenter	Presentation
11:00 AM – 11:30 AM	<b>Division Chief Ryan Riccucci</b> , U.S. Border Patrol	Unlocking the Hidden Value In Data Using Applied Ontology, Semantic Technology, & Knowledge Graphs.
11:30 AM – 12:00 PM	<b>Jennifer Gillum</b> , IMO PEO STRI	Persistent MDO Operational T&E
12:00 PM – 12:30 PM	<b>Sam Lehman</b> , Mathworks	Harnessing Mission Engineering for Enhanced Multi-Domain Operation
12:30 PM – 1:00 PM	<b>Julia Brault</b> , Mathworks	Tracking Autonomous Systems in an Urban Env.

**TRACK 4 Modeling and Simulation**  
Track Chair: **Dwayne Morgan**, Acquired Data Solutions

Time	Presenter	Presentation
11:00 AM – 11:30 AM	<b>Michael O’Conner</b> , Trideum Corp	Integrating Virtual and Live Radios for MDO Testing
11:30 AM – 12:00 PM	<b>Dr. Policarpio Soberanis</b> , Ansys	Model Validation Levels: A Pragmatic Implementation
12:00 PM – 12:30 PM	<b>Nicholas Wakefield</b> Adaptive Computing, Inc.	M&S for OT&E - Choke Point Analysis
12:30 PM – 1:00 PM	<b>Daniel Bray</b> , Dstl, UK Ministry of Defense	Improving our Understanding of Naval Weapons Effects

- 1:00 PM – 2:00 PM Lunch
- 2:00 PM – 2:45 PM **Dr. Keith A. Krapels**, SES, Director, Army Space and Missile Defense Command (SMDC) Technical Center
- 2:45 PM – 3:30 PM **Randolph “Randy” Wheeler**, Deputy Assistant Director for Risk Reduction and Experimentation at the U.S. Army Combat Capabilities Development Command (DEVCOM) C5ISR Center
- 3:30 PM – 3:45 PM Break with Exhibitors
- 3:45 PM – 4:30 PM **To Be Announced**
- 4:30 PM – 5:15 PM **Dr. Kristen Alexander**, Deputy Director of Experiments, Prototyping and Experimentation, USD(R&E)
- 5:15 PM – 7:00 PM Networking Reception with our Exhibitors

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**Thursday, July 18 – Workshop General and Technical Sessions**

- 6:30 AM – 5:00 PM Registration Open

8:00 AM – 8:05 AM	Opening Remarks
8:05 AM – 8:35 AM	<b>COL Bettye A. Dufour</b> , Chief, Force Development Division Army National Guard, National Guard Bureau
8:30 AM – 9:05 AM	<b>Brigadier General Alric L. Francis</b> , Deputy Commander (Operations), 1st Armored Division, Fort Bliss, Texas to Commandant, US Army Field Artillery School, US Army Fires Center of Excellence, Fort Sill, OK
9:05 AM – 9:35 AM	<b>Dr. Jeremy Werner</b> , Chief Scientist, Director, Operational Test and Evaluation (DOT&E)
9:35 AM – 10:00 AM	Break with Exhibitors
10:00 AM – 11:30 PM	<b>Interactive Session: Reimagining T&amp;E through the Joint Test Concept</b>  <b>Natalie Wells</b> , Lead Project Manager & Systems Engineer, and <b>Dr. Maegen Nix</b> , Decision Science Division Director, Virginia Tech Applied Research Corporation
11:30 AM – 12:30 PM	<b>Fred D. Taylor Jr.</b> , Viasat Government Systems, Vice President, Space and Cyber Applications
12:30 PM – 1:30 PM	Lunch
1:30 PM – 3:00 PM	<b>Technical Tracks</b>



**TRACK 5      Directed Energy Supporting MDO\***  
Track Chair: **Doug Nelson**, Teknikare, Inc.

Time	Presenter	Presentation
1:30 PM – 2:00 PM	<b>Dr. Bonnie Johnson</b> , Naval Postgraduate School	Kinetic/Non-Kinetic Layered Defense Engagement Coordination for Multi-Domain Operations
2:00 PM – 2:30 PM	<b>Tariq Majeed</b> , ODIN ISEA Lead and <b>Dustin Talley</b> , HELIOS Test Lead, NSWC	Port Hueneme DE Efforts: Optical Dazzler Interdictor Navy (ODIN): Integration and Embrace into the Fleet and Scenario Development
2:30 PM – 3:00 PM	<b>Raquel Astorga</b> , IDEA Project Lead Engineer, White Sands Missile Range	White Sands Missile Range Integrated Directed Energy Architecture: A Paradigm Shift

**TRACK 6      AI for Operational Decision Making**  
Track Chair: **Joe Jarzombek**, Acquired Data Solutions

Time	Presenter	Presentation
1:30 PM – 2:00 PM	<b>Jim Lockett</b> , Principal Engineer, MITRE	Systems Engineering Processes to Test AI Right
2:00 PM – 2:30 PM	<b>Carol Pomales</b> , MITRE	Complex AI Use Cases & Trustworthy AI Metric
2:30 PM – 3:00 PM	<b>Russell Graves</b> , Application Engineer, Mathworks	The Challenges of Incorporating and Verifying Machine Learning Models into Safety-Critical Systems

**TRACK 7****Expeditionary & Edge Testing and Evaluation in a MDO Environment**Track Chair: **Jason Lucas**, 96 TSSQ/RNXT

Time	Presenter	Presentation
1:30 PM – 2:00 PM	<b>Jason Lucas</b> , 96 TSSQ/RNXT	Over Water Impact Location (OWIL)
2:00 PM – 2:30 PM	<b>Dr Jim Burke</b> , Torch Technologies	Remote Advanced Weapon Test and Evaluation Capability (RAWTEC)
2:30 PM – 3:00 PM	<b>William Devine</b> , PMSR	BLOS T&E in a maritime environment

**TRACK 8****Data and Analytics**Track Chair: **Steve Seiden**, Acquired Data Solutions

Time	Presenter	Presentation
1:30 PM – 2:00 PM	<b>Michelle Allard</b> , Lead Application Engineer for the Navy, Mathworks	Enhancing AI Applications with Automated Signal Labeling
2:00 PM – 2:30 PM	<b>Mason Rowe, Alex Attia &amp; Camerson Witte</b> , AEC-ATEC	Shifting Left the Impact of Real-Time Analytics
2:30 PM – 3:00 PM	<b>Stephanie Verdugo</b> , Owner, Afterburner Wind Tunnel Services, LLC	Using Game Engines as an MBSE solution

3:00 PM – 3:30 PM

Break with Exhibitors

3:30 PM – 5:00 PM

**Panel Discussion: MDO Test, Training, & Experimentation**Moderator: **Jeannie Winchester**, USA PEO STRI, Project Manager Cyber, Test & Training

Panelists:

**James Amato**, Executive Technical Director, ATEC**BG John Nipp**, Commander, 184th Sustainment Command**Peter Don**, Senior Technical Advisor, Intelligence Center of Excellence

5:00 PM – 5:30 PM

**Ryan Norman**, Chief Data Officer and Executive Manager, Joint Mission Environments, Test Resource Management Center**Discussion Topic: The All-Domain Test Range and MDO**