



# Multi-Domain Operations in an Extended Range Environment

July 18-20, 2023

Ventura Beach Marriott

Ventura, CA





ANALYZE. INTEGRATE. INNOVATE.

Leaders in Test  
Modernization and Innovation for

# Multi-Domain Operations

Trideum provides services  
in all developmental and  
operational testing phases

Test Technology Development

Distributed Test Integration  
and Execution

Test Planning, Execution,  
Analysis, and Reporting

Evaluation Methodology

Threat Vehicle Surrogate Target  
Design and Manufacturing

Integrated Sensor Testing  
and Model Development



trideum.com

## SCHEDULE-AT-A-GLANCE

EVENTS	DAY/TIME
Registration	<ul style="list-style-type: none"><li>Monday, July 17 3:00 p.m. - 5:00 p.m.</li><li>Tuesday - Thursday 7:00 a.m. - 5:00 p.m.</li></ul>
Tutorials	<ul style="list-style-type: none"><li>Tuesday, July 18 8:00 a.m. - 12:00 p.m. 1:00 p.m. - 5:00 p.m.</li></ul>
Exhibit Hours	<ul style="list-style-type: none"><li>Wednesday, July 19 9:00 a.m. - 5:00 p.m.</li><li>Thursday, July 20 9:00 a.m. - 4:00 p.m.</li></ul>
Technical Sessions	<ul style="list-style-type: none"><li>Wednesday, July 19 3:30 p.m. - 5:30 p.m.</li><li>Thursday, July 20 1:30 p.m. - 3:30 p.m.</li></ul>
Opening Ceremony & Keynote Speakers	<ul style="list-style-type: none"><li>Wednesday, July 19 8:00 a.m. - 9:30 a.m.</li></ul>
Featured Speakers	<ul style="list-style-type: none"><li>Wednesday, July 19 10:00 a.m. - 3:00 p.m.</li></ul>
Reception in Exhibit Hall	<ul style="list-style-type: none"><li>Wednesday, July 19 5:30 p.m. - 7:00 p.m.</li></ul>
Featured Speakers	<ul style="list-style-type: none"><li>Thursday, July 20 8:00 a.m. - 12:30 p.m.</li></ul>
Closing Keynote	<ul style="list-style-type: none"><li>Thursday, July 20 4:00 p.m. - 5:00 p.m.</li></ul>

### ATTENDANCE REQUIREMENTS

*The Workshop will contain some Controlled Unclassified Information (CUI) presentations, which will limit participation to U.S. citizens who are employees of the U.S. Federal Government or its contractors (C), or employees of the Department of Defense or its contractors (D). DoD common access cards (CAC) or personal identity verification (PIV) will be required for entry. If you do not have a CAC/PIV and submitted a Visit Request by the deadline, your name will be on the approved list of attendees.*

# THANKS TO OUR SPONSORS

## Platinum



## Gold



## Bronze



SUPPORTING OUR WARFIGHTERS WITH  
T&E AND TRAINING RANGE SUPPORT  
SERVICES FOR OVER THREE DECADES

Large Business capability delivered with Small  
Business flexibility and responsiveness.



Operations &  
Maintenance



Engineering



Information  
Technology/  
Cyber  
Security



Logistics/  
Facility  
Maintenance

TIMOTHY J. ADAMS, PRESIDENT/CEO • INFO@SA-TECHINC.COM • 301.322.8880  
LARGO, MD • WWW.SA-TECHINC.COM

## The ITEA JOURNAL OF TEST AND EVALUATION

**NOW ONLINE!** [www.itea.org](http://www.itea.org)

*Themes for 2023 / 2024*

**Test the Way We Operate – Best Practices and Lesson Learned**

June 2023 (Volume 44 / Issue 2)

**Manuscript Deadline: March 1, 2023**

**DATAWorks Special Issue**

September 2023 (Volume 44 / Issue 3)

**Manuscript Deadline: May 15, 2023**

**T&E for Emerging Technologies**

December 2023 (Volume 44 / Issue 4)

**Manuscript Deadline: September 1, 2023**

**T&E for AI Enabled Systems**

March 2024 (Volume 45 / Issue 1)

**Manuscript Deadline: December 1, 2023**

# ABOUT ITEA



**The premier professional association of the international test and evaluation community.**

For over 40 years, the International Test and Evaluation Association (ITEA), a 501(c)(3) not-for-profit education organization, has been advancing the exchange of technical, programmatic, and acquisition information among the test and evaluation community.

## LEARN

- Specific T&E education and training.
- Become certified as a T&E professional.
- Maintain a competitive and informational edge.

## SHARE

- Submit a technical article, case study, or white paper to the ITEA Journal of Test and Evaluation.
- Present a relevant topic at a workshop or symposium.
- Volunteer.

## ADVANCE

- Professional growth and networking opportunities.
- Become an ITEA leader.
- Get recognized within the T&E community.

[www.itea.org](http://www.itea.org)

## INDIVIDUAL MEMBER BENEFITS

- Receive discounted registration at conferences
- Free registration to our monthly Lunch & Learns and other informative webinars
- Online access to the ITEA Journal of Test & Evaluation each quarter, includes archived copies
- Access to the Corporate Member Directory and Individual members
- Access to past conference proceedings and our online library to include all recorded Lunch & Learns, lecture series, and other webinars

## CORPORATE MEMBER BENEFITS

- Five individual memberships for organizations with 50 or more employees
- Three individual memberships for organizations with less than 50 employees
- Listing in the Corporate Capabilities Directory
- Complimentary web link from the ITEA website to yours
- Discounts on exhibit booths, sponsorships, and registrations fees at ITEA events
- Use of Corporate News to gain visibility in the ITEA Journal of Test & Evaluation
- Product Showcase visibility on social media
- Highlighted on social media/LinkedIn

## JOIN ITEA

**The only Education Association for the Test & Evaluation Community.**

### MEMBERSHIP FEES

\$45	\$95	\$25
Government	Industry	Students

**\$800/\$1500**

Corporate Membership Small/Large Business



# PRE-WORKSHOP TUTORIALS

**TUESDAY, JULY 18**

**MORNING TUTORIALS | 8:00 a.m. to 12:00 p.m.**

## **Intro to Cloud Computing (Cloud Adoption Strategies)**

 **Salon IV**

Dr. Michael Soltys, GBL Systems

Cloud computing refers to the delivery of computing services, including servers, storage, databases, networking, software, and analytics, over the Internet or “the cloud.” Instead of hosting these services on a local server or personal computer, they are provided and managed by third-party cloud service providers, such as Amazon Web Services, Google Cloud Platform, or Microsoft Azure. Thus, cloud computing is often called other people’s computers. Cloud computing provides a range of benefits including: scalability, cost-efficiency, accessibility, reliability and security. However, Cloud computing has potential drawbacks, including cost, security concerns and vendor lock-in. This workshop will discuss both the benefits and the potential drawbacks, and provide a demonstration of interacting with the cloud.

## **Laser System Test & Evaluation Atmospheric Challenges**

 **Seaward**

Douglas H. Nelson, Senior Combat Systems Engineer, Teknicare, Inc. & Mark Stevens, Systems Engineering Department, NPS

An introduction to the challenges of testing and evaluating Laser Systems in various atmospheric conditions. An overview of the basic physics and terminology of these systems is included. The unique effects of Laser Systems are also discussed to provide a foundation for test objectives. Test and evaluation needs for Laser Systems including required diagnostic beam propagation and atmospheric measurements are briefly examined.

## **T&E as a Part of Agile Development**

 **Salon V**

Robin Poston, Dean of the Moody School of Graduate and Advanced Studies, Southern Methodist University and Research Fellow with the Systems Testing Excellence Program FedEx Institute of Technology, The University of Memphis

To discuss T&E in support of agile development, we need to explore the sequence of the evolution of the agile methods, rationale for the application of different methods, compare traditional and agile software development approaches, discuss research conclusions regarding the agile method’s impact on software performance, review benefits and challenges of agile, and appreciate the fit of agile methods with Systems Acquisition Life Cycle. Furthermore, in this tutorial we will also discuss when to use agile, the role of the tester on agile projects, and various kinds of testing applicable to agile software developments.

**TUESDAY, JULY 18**

**AFTERNOON TUTORIALS | 1:00 p.m. to 5:00 p.m.**

## **Analytics Training with CHEETAS**

 **Salon V**

Dr. William Schneider, DELL EMC & Dr. Allen Gee, Senior Data Scientist, KBR

CHEETAS is an enterprise government-owned software platform designed to modernize the analysis of datasets currently processed by test ranges across the country. Actively enhanced and supported by TRMC with input from the test range community, this software suite facilitates the ingestion, management, exploration, query, and execution of analytic applications to enrich and derive insights from large data sets. This training will cover the full workflow for analysts using representative datasets as well as include representative analytic use cases. The training will focus on using Python as a language integrated with CHEETAS to implement these analytics, as it is a widely popular open-source tool for data manipulation and machine learning. Prerequisites include some familiarity with working with time series data as well as some knowledge of the python programming language. Machine learning will be covered from a fundamental level.

## **Introduction to Machine Learning**

 **Salon IV**

Dr. Michael Soltys, GBL Systems

The last two decades of Machine Learning (ML) research have produced formidable technologies that are providing immense benefit to industry, government, and society. ML can now translate between languages, identify objects in images and video, streamline manufacturing processes, control cars and robots. The deployment of ML systems has not only created a trillion-dollar industry that is projected to quadruple in three years but has also exposed the need to make ML systems fair, explainable, trustworthy, and secure ML systems, such as ChatGPT, will rightfully be expected to reason effectively about the world in which they (and people) operate, handling complex tasks and responsibilities effectively and ethically, engaging in meaningful communication, and improving their awareness through experience. (See A 20-Year Community Roadmap for Artificial Intelligence Research in the US.) This workshop will examine various aspects of ML development, including examples, explain ability, synthetic data and ethics. It will also provide a demonstration of a ML project.

## **MDO and Distributed Testing Solutions with TRMC**

 **Seaward**

Gene Hudgins, TRMC JMETC/TENA

The Test and Training Enabling Architecture (TENA) was developed as a DoD CTEIP project to enable interoperability among ranges, facilities, and simulations in a timely and cost-efficient manner, as well as to foster reuse of range assets and future software systems. TENA provides for real-time software system interoperability, as well as interfaces to existing range assets, C4ISR systems, and simulations. TENA, selected for use in JMETC events, is well designed for its role in prototyping demonstrations and distributed testing.

Established in 2006 under the TRMC, JMETC provides readily-available connectivity to the Services' distributed test capabilities and simulations. JMETC also provides connectivity for testing resources in the Defense industry and incorporation of distributed testing and leveraging of JMETC-provided capabilities by programs and users has repeatedly proven to reduce risk, cost, and schedule. JMETC is a distributed LVC testing capability developed to support the acquisition community during program development, developmental testing, operational testing, and interoperability certification, and to demonstrate Net-Ready Key Performance Parameters (KPP) requirements in a customer-specific Joint Mission Environment.

JMETC is the T&E enterprise network solution for secret testing, and uses a hybrid network architecture - the JMETC Secret Network (JSN), based on the SDREN. The JMETC MILS Network (JMN) is the T&E enterprise network solution for all classifications and cyber testing. JMETC provides readily available connectivity to the Services' distributed test capabilities and simulations, as well as industry test resources. JMETC is also aligned with JNTC integration solutions to foster test, training, and experimental collaboration.

TRMC Enterprise Big Data Analytics (BDA) and Knowledge Management (BDKM) has the capacity to improve acquisition efficiency, keep up with the rapid pace of acquisition technological advancement, ensure that effective weapon systems are delivered to warfighters at the speed of relevance, and enable T&E analysts across the acquisition lifecycle to make better and faster decisions using data that was previously inaccessible, or unusable. BDA is the application of advanced tools and techniques to help quickly process, visualize, understand, and report on data. JMETC has demonstrated that applying enterprise-distributed BDA tools and techniques to T&E leads to faster and more informed decision-making that reduces overall program cost and risk.

TRMC has been working with Joint Staff and Air Force JADC2 Cross-Functional Teams (CFTs) regarding JADC2 and Multi-Domain Operations (MDO), to inform them on TENA/JMETC and other TRMC capabilities that could be leveraged to support the emerging Joint Staff Joint Domain Environment (JDE). Additionally, TRMC has been engaged with Army Futures Command (AFC) throughout the year in a number of areas including assessing TENA/JMETC Support coupled with Big Data Analytics (BDA), expanding OSD TRMC collaboration and cooperation to other mission areas including, but not limited to, Cyber, BDA, Knowledge Management (KM), Machine Learning (ML), and Artificial Intelligence (AI).

This tutorial addresses using the well-established TENA and JMETC tools and capabilities combined with BDA tools and techniques to reduce risk in an often-uncertain environment; regularly saving ranges time and money in the process.

For over 30 years, SRC has been providing **innovative** and **cost-effective** products and services to our Warfighters worldwide. We provide **cutting-edge test and evaluation solutions** to ensure that our Warfighters can respond faster and achieve more.

**We Specialize In:**

Test & Evaluation Services	Cyber/IO
Range Instrumentation & Modernization	Information Technology
Modeling & Simulation	Threat Systems Development & Support

**Scientific Research Corporation**  
 103 Quality Circle NW • Suite 220 • Huntsville, AL 35806  
[www.scires.com](http://www.scires.com)

Structsure is an Internal Developer Platform with open source Big Bang at its core. Structsure enables scalable DevSecOps software delivery in just hours, not months.

Visit [braingu.com/bigbang](http://braingu.com/bigbang) to learn more or contact [government-services@braingu.com](mailto:government-services@braingu.com).

# PLENARY SPEAKERS

Wednesday, July 19 | 8:00 a.m. - 9:30 a.m.

📍 Salon I/II



**Daniel Carreño**, (SES) Executive Director,  
Naval Air Warfare Center Weapons Division



**George Rumford**, (SES) Director,  
Test Resource Management Center (TRMC)

Wednesday, July 19 | 10:00 a.m. - 12:15 p.m.

📍 Salon I/II



**Dr. Eileen A. Bjorkman**, (SES) Executive  
Director, Air Force Test Center (AFTC)



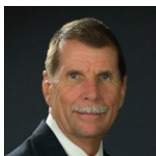
**Paul Mann**, (SES) Program Executive,  
Sea-Based Weapon Systems & Program  
Director, AEGIS BMD



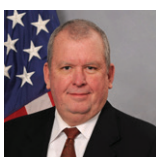
**Chris Collins**, (SES) Executive Director,  
Developmental Test, Evaluation, and  
Assessments, Office of the Undersecretary  
of Defense (Research and Engineering)

Wednesday, July 19 | 1:30 p.m. - 3:00 p.m.

📍 Salon I/II



**Terry Murphy**, CTEP, Deputy Director,  
Office of Test & Evaluation, Department of  
Homeland Security (DHS)



**Bradley Thomason**, Director, Threat  
Systems Management Office (TSMO)

Thursday, July 20 | 8:00 a.m. - 10:30 a.m.

📍 Salon I/II



**Tom Dowd**, (SES) Director, Ranges & Target  
Operations, Instrumentation and Labs,  
Naval Air Warfare Center, Weapons Division



**Vernita Harris**, (SES) Director,  
Electromagnetic Spectrum Enterprise  
Policy & Programs, Department of Defense  
Chief Information Officer



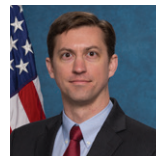
**James Amato**, (SES) Executive Technical  
Director/Deputy to the Commander, U.S.  
Army Test and Evaluation Command

Thursday, July 20 | 11:00 a.m. - 12:30 p.m.

📍 Salon I/II



**Fred D. Taylor, Jr.**, Vice President, Space  
& Cyber Applications, Viasat Government  
Systems



**Chris Klug**, Technical Director,  
Multi-Domain Test Force, United States  
Air Force

Thursday, July 20 | 4:00 p.m. - 5:00 p.m.

📍 Salon I/II



**George Rumford**, (SES) Director,  
Test Resource Management Center (TRMC)



*Scan QR code to read speaker bios*

# AGENDA

## Wednesday, July 19

8:00 a.m.	<b>Opening Ceremony</b> <b>Salon I/II</b> Presentation of Colors National Anthem <b>Tim Morey</b> , ITEA Chairman
8:15 a.m.	<b>Welcome</b> <b>Gil Torres</b> Workshop Chair
8:30 a.m.	<b>Opening Remarks</b> <b>Daniel Carreño</b> (SES) Executive Director, Naval Air Warfare Center Weapons Division
8:45 a.m.	<b>George Rumford</b> (SES) Director, Test Resource Management Center (TRMC) <i>"Multi-Domain Testing"</i> <b>[CUI: Distribution C]</b>
9:30 a.m.	<b>BREAK WITH THE EXHIBITORS</b>
10:00 a.m.	<b>Dr. Eileen Bjorkman</b> (SES) Executive Director, Air Force Test Center (AFTC) <i>"Back to the Future with Testing in  a Joint Environment 15 Years Later"</i>
10:45 a.m.	<b>Paul Mann</b> (SES) Program Executive, Sea-Based Weapon Systems & Program Director, AEGIS BMD <i>"Sea-Based Weapon Systems Overview"</i>
11:30 a.m.	<b>Chris Collins</b> (SES) Executive Director, Developmental Test, Evaluation, and Assessments, Office of the Undersecretary of Defense (Research and Engineering) <i>"T&amp;E as a Continuum in Support of MDO"</i>
12:15 p.m.	<b>LUNCH</b>
1:30 p.m.	<b>Terry Murphy</b> , CTEP Deputy Director, Office of Test & Evaluation, Department of Homeland Security (DHS) <i>"Department of Homeland  Security Challenges in the Multi-Domain  Environment"</i>
2:15 p.m.	<b>Bradley Thomason</b> Director, Threat Systems Management Office (TSMO) <i>"Evolution of Red Teaming  &amp; Threat Testing"</i>
3:00 p.m.	<b>BREAK WITH THE EXHIBITORS</b>
3:30 p.m.	Technical Sessions

### SESSION 1: The Evolution of Red Teaming & Threat Testing

**Salon IV**

Chair: **Bradley Thomason**, Director, Threat Systems  
Management Office (TSMO)

<b>Start Time:</b>	3:30 p.m.
<b>Presenter(s):</b>	Sara Estill, TSMO
<b>Presentation:</b>	<i>Publicly/Commercially Available Data</i>
<b>Start Time:</b>	4:00 p.m.
<b>Presenter(s):</b>	Nick Steward, TSMO
<b>Presentation:</b>	<i>Breached Data Sets in Red Team / Impact  Analysis</i>
<b>Start Time:</b>	4:30 p.m.
<b>Presenter(s):</b>	Sara Estill & Nick Steward, TSMO
<b>Presentation:</b>	<i>Knowledge Management as a Red Team  Target</i>
<b>Start Time:</b>	5:00 p.m.
<b>Presenter(s):</b>	Brad Thomason, Sara Estill & Nick Steward, TSMO
<b>Presentation:</b>	<i>Ask the Red Team</i>

### SESSION 2: Digital Engineering Support of MDO in an Extended Range Environment

**Salon V**

Chair: **Terry Clark**, EWA Government Systems, Inc.

<b>Start Time:</b>	3:30 p.m.
<b>Presenter(s):</b>	Carlos Godoy, Naval Undersea Warfare Center
<b>Presentation:</b>	<i>Expanding Navy Test Range Capabilities  using Proven Modeling and Simulation  Technologies [CUI: Distribution C]</i>
<b>Start Time:</b>	4:00 p.m.
<b>Presenter(s):</b>	Felipe Jauregui, RTOIL Technology Innovation Engineer, NAWCWD RTOIL Group
<b>Presentation:</b>	<i>Ranges &amp; Targets Operations,  Instrumentation and Labs (RTOIL)  Group Overview [CUI: Distribution C]</i>
<b>Start Time:</b>	4:30 p.m.
<b>Presenter(s):</b>	Dr. Jeremy Werner, OSD, DOT&E, SIPET, Chief Scientist
<b>Presentation:</b>	<i>Anti-Submarine Warfare Using Bayesian  Inference-Based AI and Data Fusion</i>
<b>Start Time:</b>	5:00 p.m.
<b>Presenter(s):</b>	Kyle Edwards, Meteorologists, NAWCWD Point Mugu Sea Range
<b>Presentation:</b>	<i>Atmospheric Buoy Development for  LASER T&amp;E at the Point Mugu Sea Range</i>



### SESSION 3: MDO T&E, from Models to Mission

📍 Seaward

Chair: **Zoe Henscheid**, MITRE

Start Time:	3:30 p.m.
Presenter(s):	Dr. Jeremy Werner, OSD, DOT&E, SIPET, Chief Scientist
Presentation:	<i>New Concepts for Joint Test &amp; Evaluation for Multi-Domain Operations</i>
Start Time:	4:00 p.m.
Presenter(s):	Shane Shaneman, & Mike Mattarock, National Security & Defense, Carnegie Mellon University
Presentation:	<i>Enabling Decision Dominance through Distributed AI: A Transformational Challenge for T&amp;E</i>
Start Time:	4:30 p.m.
Presenter(s):	Dr. Jason Daly, Department Chief Engineer, MITRE
Presentation:	<i>Joint Test and Evaluation in a Multi-Domain Operations Environment</i>
Start Time:	5:00 p.m.
Presenter(s):	Florence Reeder, Principal AI Engineer, MITRE
Presentation:	<i>T&amp;E of Complex AI-Enabled Systems (AIES)</i>



#### GET CERTIFIED

*The Newly Revised*

#### Test & Evaluation Professional (CTEP) Certification Program

##### Offering Two Levels of Certification:

##### Foundational certification

will be awarded to candidates with a Baccalaureate Degree and 1 year of relevant T&E work experience (or equivalent) and successfully pass the Foundational exam.

##### Practitioner certification

will be awarded to candidates with a Baccalaureate Degree and 3 years of relevant T&E work experience (or equivalent) and successfully pass the Practitioner exam.

### SESSION 4: Leveraging Commercial Capabilities to Support Distributed Testing and Experimentation in a Multi-Domain Environment

📍 Salon I/II

Chair: **Colonel (USA, Ret) Michael Gonzales**, TRMC

Start Time:	3:30 p.m.
Presenter(s):	Josh Davis, Project Analyst Consultant, Giesler LLC & Patricia Giesler, President & CEO, Giesler, LLC
Presentation:	<i>Halo - A Connectivity Solution for Austere Environments</i>
Start Time:	4:00 p.m.
Presenter(s):	Dr. Brian Barritt, CTO, Aalyria Technologies & Ian Eishen, Director of Global Public Sector, Aalyria Technologies
Presentation:	<i>MDO Dynamic Network Orchestration</i>
Start Time:	4:30 p.m.
Presenter(s):	Dave Sink, Director Army BD, Tactical Data Links, L3Harris Technologies
Presentation:	<i>Link16 Enables Sensor to Shooter Capabilities with Extended Ranges</i>
Start Time:	5:00 p.m.
Presenter(s):	Dr. Kevin "Cuz" Cousin, NNData Corporation
Presentation:	<i>Enhancing LVC-Based Testing and Evaluation With AI-Generated Scenarios</i>

5:30 p.m.

#### NETWORKING RECEPTION



*Scan QR code to read Technical  
Abstract Descriptions*

# AGENDA

## Thursday, July 20

8:00 a.m.  
Salon I/II

**Kenny Sanchez,**  
Technical Chair

8:15 a.m.

**Tom Dowd,** (SES) Director,  
Ranges & Target Operations,  
Instrumentation and Labs, Naval  
Air Warfare Center, Weapons  
Division “*Naval Air Warfare  
Center Weapons Division LVC  
Strategy for MDO Testing*”

9:00 a.m.

**Vernita Harris,** (SES) Director,  
Electromagnetic Spectrum  
Enterprise Policy & Programs,  
Department of Defense Chief  
Information Officer  
“*Electromagnetic Spectrum is  
the Connective Tissue Linking  
all Domains*”

9:45 a.m.

**James Amato,** (SES) Executive  
Technical Director/Deputy to the  
Commander, U.S. Army Test and  
Evaluation Command  
“*Test and Evaluation  
Modernization*”

10:30 a.m.

**BREAK WITH THE EXHIBITORS**

11:00 a.m.

**Fred D. Taylor, Jr.,** Vice President,  
Space & Cyber Applications, Viasat  
Government Systems  
“*Dynamic Data Transport  
Diversity for MDO*”

11:45 a.m.

**Chris Klug,** Director, Multi-Domain  
Test Force, United States Air Force  
“*Securely Scaling Multi-Domain  
Test*”

12:30 p.m.

**LUNCH**

1:30 p.m.

Technical Sessions



Follow us on LinkedIn

## SESSION 5: Qualitatively Advancing Test Infrastructure

Salon IV

Chair: **Joel Babbitt,** Viasat

**Start Time:** 1:30 p.m.

**Presenter(s):** Greg Norton, Director of RF Environment  
Generation, Viasat

**Presentation:** *Realistic RF Stimulation*

**Start Time:** 2:00 p.m.

**Presenter(s):** Steve Karsten, General Manager, Advanced  
Networks and Cyber Solutions, Viasat

**Presentation:** *Next Generation Connectivity Capabilities*

**Start Time:** 2:30 p.m.

**Presenter(s):** Tom Jessee & Dave Dwyer, Viasat  
Government Systems

**Presentation:** *Resilient SATCOM for Ground and Airborne  
Ranges*

**Start Time:** 3:00 p.m.

**Presenter(s):** Robert Brown, Vice President of Strategic  
Business Development-Trusted Connections,  
Viasat Government Services

**Presentation:** *Ensuring Always-Available Connectivity for  
Test Ranges*

## SESSION 6: AI & ML Battle Management

Salon V

Chair: **Kevin Gross,** Director, Threat Target Systems,  
NAWCWD Point Mugu

**Start Time:** 1:30 p.m.

**Presenter(s):** Carlos Godoy, Naval Undersea Warfare  
Center

**Presentation:** *Classification of Threat Submarines Based  
on Active Acoustic Scattering  
[CUI: Distribution C]*

**Start Time:** 2:00 p.m.

**Presenter(s):** Kelechi Nwachukwu & Dr. Kofi Nyarko,  
Morgan State University

**Presentation:** *Synchronized Analysis of Video, Imagery,  
and Audio (SAVIA)*

**Start Time:** 2:30 p.m.

**Presenter(s):** Vernon “Chester” Guenther, BrainGu

**Presentation:** *The Enabling Capabilities of DevSecOps  
Platforms and Mission Apps*

**Start Time:** 3:00 p.m.

**Presenter(s):** Austin Ruth, GTRI

**Presentation:** *Rapid Experimentation and Machine  
Learning at the Edge*

## SESSION 7: Challenges & Solutions for MDO Test/ Training Planning & Execution in an Extended Range Environment

📍 Seaward

Chair: **Kent Pickett**, MITRE

Start Time:	1:30 p.m.
Presenter(s):	Gregory Tauer, CUBRC, Inc.
Presentation:	<i>Generating Insights from Test and Evaluation Data (GIFTED)</i> [CUI: Distribution C]
Start Time:	2:00 p.m.
Presenter(s):	Kevin Gupton, University of Texas Applied Research Lab [CUI: Distribution C]
Presentation:	<i>Multi Variate Data Workbench (MVDW)</i>
Start Time:	2:30 p.m.
Presenter(s):	Kathy Smith, GBL
Presentation:	<i>Multivariate Algorithms for Optimized Test Heuristics and Realtime Analysis (MAOTHRA)</i>
Start Time:	3:00 p.m.
Presenter(s):	Sunil Samtani, Peraton Labs
Presentation:	<i>Using Analytics for Testing Data Discovery System (ATTENDS) for Zero-Day Anomaly Detection and Root Cause Analysis</i>



## SESSION 8: MDO Tools in an Extended Range Environment

📍 Salon I/II

Chair: **Eddie Lucero**, KBR

Start Time:	1:30 p.m.
Presenter(s):	Larry Bunch, Florida Institute for Human and Machine Cognition
Presentation:	<i>T&amp;E Data Observatory</i>
Start Time:	2:00 p.m.
Presenter(s):	Charles Barba, CHI Systems, Inc.
Presentation:	<i>4D Visual Analytics Platform</i>
Start Time:	2:30 p.m.
Presenter(s):	Tim Fountain, Rohde & Schwarz
Presentation:	<i>Testing for Coexistence in Crowded and Contested RF Environments</i>
Start Time:	3:00 p.m.
Presenter(s):	Jeff Tolleson, PeopleTec
Presentation:	<i>RAPID: Redstone Test Center's Approach to Integrating Army Modernization into an MDO Environment</i>

3:30 p.m.

**BREAK WITH EXHIBITORS**

## CLOSING KEYNOTE

📍 Salon I/II

4:00 p.m.

**George Rumford**, (SES)  
Test Resource Management  
Center (TRMC)  
[CUI: Distribution C]

5:00 p.m.

**Workshop Concludes**



# ITEA IS EDUCATION



*Reach your goal and gain your  
Professional Education Units*

## Short Courses

- › Cybersecurity and Information Assurance
- › DOE/Advanced Design of Experiments
- › Fundamentals of Test & Evaluation
- › Program Management and Systems Engineering
- › STAT/Scientific Test and Analysis Techniques

## Tutorials

- › A Process for Distributed LVC in T&E
- › Introduction to Cyber Resilience T&E
- › T&E as a Part of Agile Development
- › T&E in a Digital Engineering Environment
- › TRMC Solutions for Test and Training

## Webinars

- › Adaptive Relevant Testing: Accelerating US Air Force Combat Capabilities
- › Best Practices for Addressing New Challenges in Testing and Evaluating Artificial Intelligence Enabled Systems
- › Interoperability T&E
- › T&E in a Digital Engineering Environment
- › Test & Evaluation in a Digital Engineering Enabled World

ONLINE | VIRTUAL | IN-PERSON  
Find us on [SAM.GOV](https://sam.gov)

*The above are examples of ITEA offerings.*

**August 29-31, 2023**  
**Virginia Beach, VA**



# Cybersecurity Workshop

**Securing the Future: Navigating the  
Evolving Threat Landscape**

## Featured Speakers

**Joseph F. Bradley Jr., (SES)**

Cyber Resiliency Office for Weapon Systems (CROWS),  
Air Force Life Cycle Management Center

**Mark Dominguez**

Director, Joint Information Operations Range (JIOR),  
318<sup>th</sup> Cyberspace Operations Group

**Tom Walrond**

Cyber Advisor to Deputy Director for Strategic Initiatives,  
Policy and Emerging Technologies, DOT&E, OSD

**Geoff Wilson**

Program Manager, T&E/S&T Program, Test Resource  
Management Center (TRMC)

## Mobile Capture the Flag Demonstration

by Dr. Jonathan Harris, Lead Cybersecurity Engineer,  
Naval Air Warfare Center Training Systems Division  
& Patrick Lardieri, Technical Director, National Cyber  
Range (NCR) Program, Lockheed Martin



*Showcase your organization's products and services.  
Exhibit & Sponsorships available.*

# REGISTER NOW

Tutorials | Tech Sessions | Speakers | Exhibits



# 2023 EXHIBITORS

## Astro Haven Enterprises

Booth 2

Lake Havasu City, AZ | [www.astrohaven.com](http://www.astrohaven.com)

Astro Haven Enterprises (AHE) engineers System Solutions; enclosures that enhance the performance of the instrumentation and mission ops. Enclosures that can tailor air flow for mechanical and thermodynamic performance; Mobility that doesn't sacrifice precision and accuracy of the instrumentation; Morphing for easy access and viewing down to your feet; Mobility that can hit the public road at any speed or be deployed worldwide in a container. When a roof and a couple of windows is not enough, AHE is outside the box, imagining the performance you can achieve.

## CRFS, Inc.

Booth 7

Chantilly, VA | [www.crfs.com](http://www.crfs.com)

CRFS creates rugged deployable systems to detect, identify and geolocate signals in complex RF environments. We provide end-to-end automated solutions for spectrum management and deconfliction, interference hunting and threat detection, using our intelligent receiver technology, software and advanced analytics. Our RFeye systems are widely deployed by military, intelligence, law enforcement and regulatory agencies. CRFS has offices in the UK and USA, alongside wholly owned production facilities in Cambridge, UK, Virginia and New York. We also have a network of trusted international partners that provide local support to our global customer base.

## Empower RF Systems

Booth 6

Inglewood, CA | [www.empowerrf.com](http://www.empowerrf.com)

Empower RF Systems is an established and technologically superior manufacturer of High Power Solid State RF & Microwave Amplifiers. Band specific and broadband output power combinations are available in CW and pulse. Output power from tens of watts to hundreds of kilowatts, HF to X band.

## Geeks and Nerds (GaN)

Booth 1

Huntsville, AL | [www.geeksandnerds.com](http://www.geeksandnerds.com)

Geeks and Nerds (GaN) is an innovative solution developer. Our motto, Innovate with Purpose™, succinctly defines our commitment to provide solutions and services that positively impact our community and national security. Our innovation encompasses the entire spectrum of engineering and science including research, development, testing, evaluation, and training.

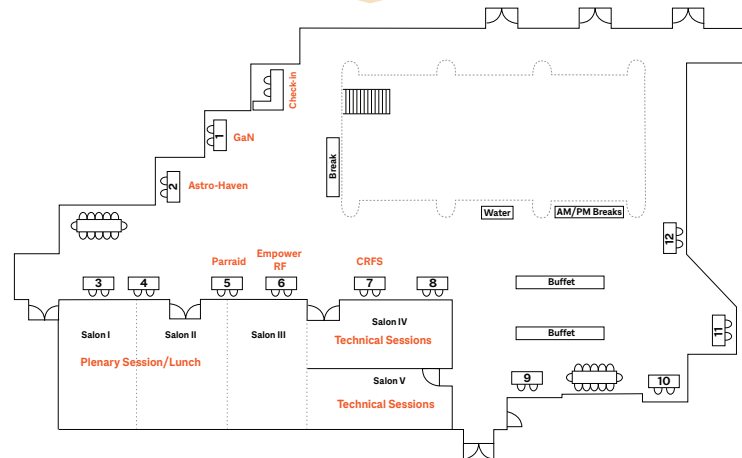
## Parraid, LLC

Booth 5

Hollywood, MD | [www.parraid.com](http://www.parraid.com)

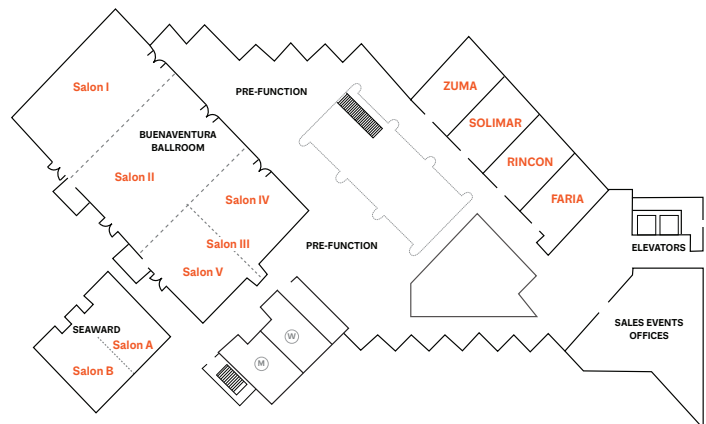
Parraid is a highly regarded, U.S. based technology and engineering company specializing in product solutions for aerospace & ground tactical applications. Our products include telemetry data systems (TDS), deployable tactical systems, and net-centric everything over IP products. Our mission-critical solutions enable our customers to transform, evolve, and modernize.

# MDO 2023 EXHIBIT HALL & MEETING ROOMS



## Exhibitors

Astrohaven	2
CRFS, Inc.	7
Empower RF Systems	6
Geeks and Nerds (GaN)	1
Parraid, LLC	5



## Exhibit Hours

### Wednesday, July 19

- Break with the Exhibitors
- Break with the Exhibitors
- Reception in the Exhibit Hall

9:00 a.m. - 5:00 p.m.

9:30 a.m.

3:00 p.m.

5:30 p.m.

### Thursday, July 20

- Break with the Exhibitors
- Break with the Exhibitors

9:00 p.m. - 4:00 p.m.

10:30 a.m.

3:30 p.m.



40<sup>th</sup> International T&E Symposium:

## Next Generation Test Dominance

December 5-8, 2023 | Destin, FL

### FEATURED SPEAKERS:

**Brig. Gen. Jeffrey Geraghty**, CC, 96<sup>th</sup> TW,  
AFMC, Eglin ABF

**Amy Markowich**, (SES) ED, DAiTA and  
Mission Systems Groups, NAWC-AD

**Dr. Raymond D. O'Toole, Jr.**, (SES) PD,  
Director, Operational T&E

**Brig. Gen. Michael Rawls**, CC, AFOTEC,  
Kirtland AFB

**George Rumford**, (SES) Director,  
Test Resource Management Center

**James Wells**, (SES) Director, Office of T&E,  
Department Homeland Security

### PANEL DISCUSSIONS:

- Artificial Intelligence and Machine Learning
- Digital Engineering in Support of T&E
- T&E in Support of the Agile Development Process

*And more*



Tutorials | Tech Sessions | Networking | Exhibits

## REGISTRATION NOW OPEN

VISIT US AT **BOOTH 7**

# EXTRAORDINARY RF TECHNOLOGY

TRL-9

At CRFS, we are solving tough RF challenges to help you understand and exploit the electromagnetic environment.

- > **SPECTRUM MONITORING & GEOLOCATION**
- > **FIXED DEPLOYMENTS**
- > **TACTICAL & MOBILE DEPLOYMENTS**
- > **IN-BUILDING DEPLOYMENTS**



### TALK TO US

**Jade Long**  
jlong@crfsinc.com

**Keith Higgins**  
khiggins@crfsinc.com



[www.crfs.com](http://www.crfs.com)

**CRFS**

EXTRAORDINARY  
RF TECHNOLOGY

CRFS's RFeye Eco System is already deployed across 40+ countries and by NATO. We're trusted technology partners with Military End-Users, Government Agencies, Space Operators and Test Labs.



[www.itea.org](http://www.itea.org)