



NDIA

FUTURE FORCE CAPABILITIES

CONFERENCE & EXHIBITION

Armaments, Robotics, Munitions and EOD

September 19 - 22 | Austin, TX | [NDIA.org/FutureForce22](https://www.ndia.org/FutureForce22)

TABLE OF CONTENTS

WHO WE ARE	3
EVENT INFORMATION	4
AGENDA	5
BREAKOUT SESSIONS	8
SPONSOR DESCRIPTIONS	10
LIVE FIRE DEMONSTRATION	18
ABSTRACT SUMMARIES	18
POSTER PRESENTERS	22
BIOGRAPHIES	25
CONVENTION CENTER MAP	28
EXHIBITORS	29



NDIA

WHO WE ARE

The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the safety and security of our nation. NDIA's membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. For more than 100 years, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensuring our warfighters have the best training, equipment, and support. For more information, visit NDIA.org

NDIA | CAREER CENTER

Connecting Talent with Great Opportunities

This latest member benefit of the National Defense Industrial Association offers qualified defense and national security professionals and employers an intuitive platform to identify the next best opportunity or candidate. With single-sign-on, quick and advanced searches, job alerts, career resources, pre-screen questionnaires, success tracking, and more, the NDIA Career Center is the defense industry's premier resource for career growth and advancement.

Log in and complete your profile today at Jobs.NDIA.org



GET INVOLVED

Learn more about NDIA's Divisions and how to join one at NDIA.org/Divisions



ARMAMENTS DIVISION

WHO WE ARE

The Armaments Division provides a forum for industry, military, and government personnel to address issues in order to ensure a superior armament system capability today and in the future. The Division addresses armament operational needs and requirements, approaches and concepts, system integration, weapons, munitions, fire control, and logistic support. Attention is given to total systems, technology application, and state-of-the-art advancements in technology.

LEADERSHIP AND COMMITTEES

Brian Berger

Division Chair

Bruce Webb

Division Vice Chair

Steve Faintich

Small Arms Committee Chair

Alan Kull

UEA Committee Chair

Matt Phillips

GARM Committee Chair

COL Leo Bradley, USA (Ret)

EOD Committee Chair



MUNITIONS TECHNOLOGY DIVISION

WHO WE ARE

The Munitions Technology Division works to maintain the open exchange of technical information among government and industry programs and technical managers. In addition, the Division identifies changes and trends in policy, guidance, and organizational functions that affect the development, production, maintenance, and demilitarization of munitions. The Division is comprised of two sections, Fuze and Insensitive Munitions & Energetic Materials, and one advisory group, the Industrial Committee of Ammunition Producers.

LEADERSHIP AND COMMITTEES

Nick Perry

Division Chair

COL Moises (Mo)

Gutierrez, USA (Ret)

Division Vice Chair

Don McLaughlin

Munitions Conference Chair



ROBOTICS DIVISION

WHO WE ARE

The Robotics Division focuses on security-related robotics technology, covering the development, acquisition, application, integration, and sustainment of unmanned ground systems to improve warfighters' capabilities and survivability. The Division sponsors the Ground Robotics Champion and Ground Robotics Technology Innovator Awards.

LEADERSHIP AND COMMITTEES

Matt Dooley

Division Chair

David Thomas

Division Vice Chair

EVENT INFORMATION

LOCATION

Conference Location
Austin Convention Center
500 E Cesar Chavez St
Austin, TX 78701

Live Demo Location
Reveille Peak Ranch
105 Co Rd 114
Burnet, TX 78611

WIFI

Network: Austin Convention Center

REAL-TIME Q&A



Slido is an audience engagement platform that allows users to crowd-source top questions to drive meaningful conversations and increase crowd participation. Participants can up-vote the questions they would most like to hear discussed. Simply tap the thumbs-up button to up-vote a question. Top questions are displayed for the moderator and speaker to answer. Ask your question in sessions by going to Slido! Event code: **NDIAFFC22**

MOBILE APP



Make the most of your time at the 2022 Future Force Capabilities Conference and Exhibition with the event app available on the App Store for Apple devices and Google Play for Android devices. by searching "2022 Future Force Capabilities."

Download this FREE app for complete access to: Agenda | Clickable Floorplan | Exhibitor Listing | Slido | Social Media | Speakers | Timely "Buzz" Event Updates. Build your personal itinerary, contact exhibitors by directly accessing their websites, and more! Whether logged into the event mobile app on your computer or mobile device, your Expo Plan and Itinerary will always be in sync!



SURVEY AND PARTICIPANT LIST

You will receive via email a survey and list of participants (name and organization) after the conference. Please complete the survey to make our event even more successful in the future.

EVENT CONTACT

Meredith Mangas, CMP
Associate Director, Meetings
(703) 247-9467 | mmangas@NDIA.org

George Webster
Program Manager, Divisions
(703) 247-9491 | gwebster@NDIA.org

Sarah O'Hanley
Associate Director, Exhibits & Sponsorships
(703) 247-9460 | sohanley@NDIA.org

Andrew Peters
Associate Director, Meetings
(703) 247-2572 | apeters@NDIA.org

SPEAKER GIFTS

In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

HARASSMENT STATEMENT

NDIA is committed to providing a professional environment free from physical, psychological and verbal harassment. NDIA will not tolerate harassment of any kind, including but not limited to harassment based on ethnicity, religion, disability, physical appearance, gender, or sexual orientation. This policy applies to all participants and attendees at NDIA conferences, meetings and events. Harassment includes offensive gestures and verbal comments, deliberate intimidation, stalking, following, inappropriate photography and recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention. Participants requested to cease harassing behavior are expected to comply immediately, and failure will serve as grounds for revoking access to the NDIA event.

EVENT CODE OF CONDUCT

NDIA's Event Code of Conduct applies to all National Defense Industrial Association (NDIA), National Training & Simulation Association (NTSA), and Women In Defense (WID) meeting-related events, whether in person at public or private facilities, online, or during virtual events. NDIA, NTSA, and WID are committed to providing a productive and welcoming environment for all participants. All participants are expected to abide by this code as well as NDIA's ethical principles and practices. Visit [NDIA.org/CodeOfConduct](https://www.ndia.org/CodeOfConduct) to review the full policy.

ANTI TRUST STATEMENT

The NDIA has a policy of strict compliance with federal and state antitrust laws. The antitrust laws prohibit competitors from engaging in actions that could result in an unreasonable restraint of trade. Consequently, NDIA members must avoid discussing certain topics when they are together at formal association membership, board, committee, and other meetings and in informal contacts with other industry members: prices, fees, rates, profit margins, or other terms or conditions of sale (including allowances, credit terms, and warranties); allocation of markets or customers or division of territories; or refusals to deal with or boycotts of suppliers, customers or other third parties, or topics that may lead participants not to deal with a particular supplier, customer or third party.

AGENDA

MONDAY, SEPTEMBER 19

- 12:00 – 7:00 pm** **REGISTRATION**
4TH STREET LOBBY, AUSTIN CONVENTION CENTER
- 2:00 – 3:00 pm** **ARMY FUTURES COMMAND CAPABILITY BRIEFING – MISSILES**
ROOM 18B-C, LEVEL 4, AUSTIN CONVENTION CENTER
Hunter Blackwell
Deputy Capability Area Lead-Fires, U.S. Army DEVCOM Aviation & Missile Center
- 3:00 – 4:00 pm** **ARMY FUTURES COMMAND CAPABILITY BRIEFING – NEXT GENERATION TECHNOLOGIES FOR ROBOTICS**
ROOM 18B-C, LEVEL 4, AUSTIN CONVENTION CENTER
Dr. Brett Piekarski
Chief Scientist, Computational & Information Sciences Directorate, U.S. Army DEVCOM Army Research Laboratory
Dr. Elias Rigas
Mechanical Engineer, U.S. Army DEVCOM Army Research Laboratory

TUESDAY, SEPTEMBER 20

- 7:00 am – 6:30 pm** **REGISTRATION**
4TH STREET LOBBY, AUSTIN CONVENTION CENTER
- 7:00 – 8:00 am** **NETWORKING BREAKFAST**
4TH STREET LOBBY, AUSTIN CONVENTION CENTER
- 8:00 – 8:15 am** **OPENING REMARKS**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
The Hon. David L. Norquist
President & CEO, NDIA
- 8:15 – 9:15 am** **KEYNOTE SPEAKER**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
LTG Thomas Todd III, USA
Deputy Commanding General, Acquisition & Systems Management, Chief Innovation Officer, U.S. Army Futures Command
- 9:00 am – 6:30 pm** **EXHIBIT HALL OPEN**
EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER
- 9:15 – 9:45 am** **NETWORKING BREAK**
EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

9:45 – 10:35 am

GUEST SPEAKER PANEL

BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER

Chris Grassano

Deputy Program Executive Officer, Armaments & Ammunition
Moderator

Anthony Sebasto

Acting Director, U.S. Army Futures Command Armaments Center

Scott Adams

Program Manager, Ammunition, Marine Corps Systems Command

Nathan Hawley

Director, Munitions and Logistics Readiness Center, U.S. Army Joint Munitions Command

10:35 – 11:20 am

WHY NOT HYPERSONIC WEAPONS?

BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER

Dr. Mark Lewis

Executive Director, Emerging Technologies Institute (ETI)

11:20 am – 12:30 pm

NETWORKING LUNCH

EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

4:55 – 6:30 pm

NETWORKING RECEPTION

EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

WEDNESDAY, SEPTEMBER 21

7:00 am – 4:55 pm

REGISTRATION

4TH STREET LOBBY, AUSTIN CONVENTION CENTER

7:00 – 8:05 am

NETWORKING BREAKFAST

4TH STREET LOBBY, AUSTIN CONVENTION CENTER

8:05 – 8:15 am

OPENING REMARKS

BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER

The Hon. Micheal J. Bayer

Vice Chairman, NDIA Board of Directors

8:15 – 9:00 am

KEYNOTE SPEAKER

BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER

Col Corey Beaverson, USAF

Prototyping & Experiments Directorate, Office of the Under Secretary of Defense for Research & Engineering (OUSD(R&E))

9:00 am – 3:00 pm

EXHIBIT HALL OPEN

EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

9:00 – 9:30 am

NETWORKING BREAK

EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

- 9:30 – 10:15 am **KEYNOTE SPEAKER**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
- H.E. Oleksii Reznikov**
Minister of Defence, Ukraine
Virtual
- Major General Volodymyr Havrylov**
Deputy Minister of Defense, Ukraine
- 10:15 – 10:40 am **MODERN TRENDS & DEVELOPMENTS IN WEAPONS THREATS**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
- Dan Shea**
General Director, Phoenix Defence
- 10:40 - 10:45 am **MAYOR'S WELCOME**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
- The Hon. Micheal J. Bayer**
Vice Chairman, NDIA Board of Directors
Introducer
- Steve Adler**
Mayor of Austin, Texas
- 10:45 – 11:45 am **AWARDS PRESENTATION**
BALLROOM D, LEVEL 4, AUSTIN CONVENTION CENTER
- | | |
|--|--|
| Glock, Inc.
The Ambrose Industry Award | Dr. Brett Bagwell
The Hathcock Award |
| Mark McFadden
The Chinn Award | Robert Wheeler
The Trifiletti Award |
- 11:45 am – 1:00 pm **NETWORKING LUNCH**
EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER

THURSDAY, SEPTEMBER 22

- 10:00 am **DEPARTURE FROM AUSTIN CONVENTION CENTER**
- 11:30 am **ARRIVE AT REVEILLE PEAK RANCH**
- 11:30 am – 12:30 pm **LUNCH PROVIDED BY LARUE TACTICAL**
- 12:30 – 4:00 pm **ATTENDEE SECURITY BRIEF AND DEMO**
- 2:00 pm **EARLY BUS DEPARTURE TO AUSTIN CONVENTION CENTER**
- 4:00 pm **DEPARTURE TO AUSTIN CONVENTION CENTER**

BREAKOUT SESSIONS

TUESDAY, SEPTEMBER 20

	Robotics Matt Dooley, Division Chair	Small Arms Steve Faintich, Committee Chair
	Level 4, Room 18A	Level 4, Ballroom D
12:30 – 12:50 pm		
12:50 – 1:10 pm	Universal Common Controller Panel COL Andy Boston, USA (Ret) Consultant/Principal, Multi-Domain Consulting LLC <i>Moderator</i> Colin Brodmerkel Director, Business Development, Tomahawk Robotics MAJ Cory Wallace, USA Robot Combat Vehicle Lead, Next Generation Combat Vehicle Cross-Functional Team Matt Dooley Chair, NDIA Robotics Division	PM Soldier Lethality Session COL Scott Madore, USA Product Director, Soldier Lethality, U.S. Army <i>Moderator</i> David Oatley Product Director, Crew Served Weapons, U.S. Army Barbara Muldowney Deputy Product Manager, Individual Weapons, U.S. Army LTC Joshua Headley, USA Product Manager, Next Generation Weapons, U.S. Army
1:10 – 1:30 pm		
1:30 – 1:50 pm		Joint Service Small Arms Synchronization Team Gus Funcasta Chief, Joint Service Small Arms Program Office, Armaments Center, U.S. Army DEVCOM, U.S. Army Futures Command <i>Moderator</i> MAJ Marcus Farmer, USA Maneuver Capabilities & Integration Directorate (MCDID), U.S. Army Futures Command Christopher Woodburn Deputy, Maneuver Branch, Marine Corps Capabilities Development Directorate LCDR Werner Reschmeier, USN Surface Warfare Weapons Branch, OPNAV N96C Christopher Graham Deputy Chief, Use of Force Office, Office of Specialized Capabilities, Headquarters U.S. Coast Guard Eugene Rooker Deputy Program Manager, SOF Lethality, USSOCOM
1:50 – 2:20 pm	24534 Rapid Development of Secure Robotic Platforms Dr. Hal Aldridge Chief Executive Officer, Secmaton	
2:20 – 3:10 pm	NETWORKING BREAK EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER	

GARM/Munitions Matthew Phillips, GARM Committee Chair Don McLaughlin, Munition Conference Planning Chair	UEA/GARM/EOD Alan Kull, UEA Committee Chair Matthew Phillips, GARM Committee Chair Leo Bradley, EOD Committee Chair
Level 4, Room 18B-C	Level 4, Room 18D
JPEO A&A Summary Chris Grassano Deputy Program Executive Officer, U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24726 Evolving Armament Systems to Support Multi-Domain Operations Jonathan Ross Director, Strategy & Market Intelligence, Marvin Engineering Co., Inc.
JPEO A&A Assured Munitions Gene Conner Director of Integration (DOI), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24706 Hypersonic Aerial Gunnery Ammunition Dr. Ronald Barrett Professor, University of Kansas
Overview of PM MAS LTC Paul Santamaria, USA Product Manager, Medium Caliber Ammunition, U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24735 Non-Lethal Counter-Personnel Tactical Robotic Energetic Delivery Systems (TREDS) John Chapman Chief Executive Officer, Liberty Dynamic
Overview of PM CAS COL Leon Rogers, USA Project Manager, Combat Ammunition Systems (PM-CAS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A) Jason Fultz Chief Engineer, Project Manager - Combat Ammunition Systems (PM-CAS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24826 Modernized GPS and Digital Anti-Jam Contributions to the Range and Lethality Challenge to MDO/JADO Justin Wymore Customer Requirements Manager, BAE Systems, Inc.
Overview of PM CAS COL Leon Rogers, USA Project Manager, Combat Ammunition Systems (PM-CAS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A) Jason Fultz Chief Engineer, Project Manager - Combat Ammunition Systems (PM-CAS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24496 Advanced Textiles Bring a New Level of Comfort & Performance to EOD Personal Cooling Systems James McLaughlin Strategic Business Development, Kennon Products, Inc.
NETWORKING BREAK EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER	

	Robotics Matt Dooley, Division Chair	Small Arms Steve Faintich, Committee Chair
	Level 4, Room 18A	Level 4, Ballroom D
3:10 – 3:30 pm	24742 Person Tracking, Re-Identification, and Threat Detection by Autonomous Unmanned Systems Within Complex Urban Environments Dr. Matt Brown Principal Engineer, Kitware	Joint Service Small Arms Program (JSSAP) Office Session 24729 The Theory Behind DEVCOM Armaments Center's Gelatin Terminal Assessment Process Kenneth Hohnecker Mechanical Engineer, U.S. Army DEVCOM-AC
3:30 – 3:50 pm	24743 AFRL Autonomous Collaborative Enabling Technology LtCol Lawrence Ware, USAF Autonomous Collaborative Enabling Tech, Air Force Research Laboratory	JSSAP Overview Gus Funcasta Chief, Joint Service Small Arms Program Office, Armaments Center, U.S. Army DEVCOM, U.S. Army Futures Command Moderator
3:50 – 4:10 pm	24829 Robotic System for Maneuvering Munitions with Military Vehicles Dr. Adam Brant Project Manager, RE2 LLC	Joint Service Small Arms Program FY22 Project Portfolio Update Terence Rice Armament Center, Joint Small Service Small Arms Program Office, U.S. Army DEVCOM 24700 Determining Representative Travel Distances for Small Arm Ammunition Shawn Spickert-Fulton Analyst/Engineer, Small Caliber Ammunition Technology Development

GARM/Munitions Matthew Phillips, GARM Committee Chair Don McLaughlin, Munition Conference Planning Chair	UEA/GARM/EOD Alan Kull, UEA Committee Chair Matthew Phillips, GARM Committee Chair Leo Bradley, EOD Committee Chair
Level 4, Room 18B-C	Level 4, Room 18D
Overview of PM-CCS LTC Isaac Cuthbertson, USA Product Manager, Terrain Shaping Obstacles (TSO), Close Combat Systems (PM-CCS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	24838 Lone Wolf: Weaponized Quadrupled Unmanned Ground Vehicle (Q-UGV) Bhavanjot Singh Advisor, Networked Lethality, AFC DEVCOM-AC
The Army Ammunition Plant Modernization Plan COL Jason Bohannon, USA Deputy Project Director, Joint Services, U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)	Overview of PM-CCS EOD Portfolio Michael Burke Product Manager, Demolitions and Counter Measures, Close Combat Systems (PM-CCS), U.S. Army Joint Program Executive Office Armaments & Ammunition (JPEO A&A)

SPONSOR DESCRIPTIONS



LIVE FIRE DEMONSTRATION SPONSOR

KGM Technologies is the largest designer and manufacturer of weapon suppressors in the country. We are protecting the hearing of shooters everywhere and significantly enhancing the capability of our war-fighters. Our patented technologies and advanced manufacturing methods have allowed KGM to set the new standard of suppression. Additional information can be found at www.kgm-tech.com.



REGISTRATION & LANYARD SPONSOR

For decades, Northrop Grumman has protected U.S. forces and our allies by designing, developing and delivering weapons of increasing complexity and capabilities for expanded missions and domains. We continue to build upon that legacy to pioneer weapons that consistently outmatch the range, speed, precision and firepower of fielded enemy weapon systems, with the parameters of current platforms in mind.

Northrop Grumman's weapon solutions define possible from tip-to-tail, integrating legacy capabilities with innovative technology for the toughest missions with increased survivability, speed to the field, and affordability at the forefront.



LIVE FIRE DEMONSTRATION SUPPORTING SPONSORS

GENERAL DYNAMICS Ordnance and Tactical Systems

TUESDAY RECEPTION SPONSOR

General Dynamics Ordnance and Tactical Systems is a global systems developer and manufacturer of munitions, weapons and tactical systems across the entire air, land, and sea battle spectrum. It is the purpose of GD-OTS to empower the United States Armed Forces and its Allies through readiness and innovation to protect what is most important, the warfighter. We are dedicated to our people, our products and our processes to ensure that every day we are Delivering the Best to the Best™



REGISTRATION BAG SPONSOR

Geissele Automatics, founded by William Geissele in 2004, is an American firearms and firearms parts manufacturer located in North Wales, Pennsylvania.

The company first entered the civilian market by manufacturing trigger mechanisms for the AR15 rifle. While we haven't lost touch with our humble beginnings, we have evolved and now also manufacture firearms for sport shooting, hunting, and personal defense.

Geissele is also committed to servicing the Department of Defense, law enforcement agencies, and our allies around the world. Our first trigger, the Hi-Speed National Match, was originally designed for target shooting and the CMP and NRA Hi-Power Rifle competition, but was found to have U.S. Military applications and, in 2005, we received a request from the DoD to build a select-fire trigger like the Hi-Speed National Match trigger. Geissele then designed and built the Super Select-Fire trigger, which was adopted by entities in the U.S. Special Operations community and became their trigger of choice for M4 carbine-based weapons.

Using state of the art machine technology and the most modern materials, we engineer, develop, and produce solutions to meet the unique and complicated needs of the modern-day warfighter.

In short, We are Weaponmakers® committed to excellence in everything we do.

	Robotics Matt Dooley, Division Chair	Small Arms Steve Faintich, Committee Chair
	Level 4, Room 18A	Level 4, Ballroom D
4:10 – 4:30 pm	24835 Emerging Armament Technologies for Unmanned Systems Lucious Taylor IV Chief Engineer, Naval Surface Warfare Center	NATO Panel Mark McFadden JSSARI Chairman, U.S Head of Delegation to NATO Dismounted Soldier Systems, Weapons & Sensors Subgroup <i>Moderator</i> Adam Jacob Chairman, NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) - Suppressor Team of Experts Matthew Kretlow U.S. Army Representative to NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) Dr. David Dye U.S. Navy Crane Representative to NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) Aldo Sulga Netherlands Representative to NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) Dr. Mark Thoreson U.S. Navy Representative to NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) John Yoshida Canadian Head of Delegation to NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG)
4:30 – 4:50 pm	24723 Supervised Autonomous Function Executive: An Autonomy Enabler Dean Barten Senior Principal Engineer, MTSI	
4:50 – 4:55 pm	Closing Remarks Matt Dooley Chair, NDIA Robotics Division	Closing Remarks Steve Faintich Chair, NDIA Small Arms Committee

GARM/Munitions Matthew Phillips, GARM Committee Chair Don McLaughlin, Munition Conference Planning Chair	UEA/GARM/EOD Alan Kull, UEA Committee Chair Matthew Phillips, GARM Committee Chair Leo Bradley, EOD Committee Chair
Level 4, Room 18B-C	Level 4, Room 18D
IBAT Presentation & Demo Rob Roy President, Decision Science Incorporated LaDonna Schneller IBAT Program Manager, Decision Science Incorporated	Closing Remarks Matthew Phillips Chair, NDIA GARM Committee
Closing Remarks Don McLaughlin President, T-Worx Technologies	

SPONSOR DESCRIPTIONS (CONTINUED)



PERFECTION

TUESDAY LUNCH SPONSOR

As a global leader in firearms manufacturing, GLOCK provides quality firearms to military, law enforcement, and civilians worldwide. For 36 years in the United States, GLOCK products have become a favorite among many by offering a polymer-based pistol featuring the renowned Safe-Action System. Being a global leader in the industry, GLOCK's dedication to quality, innovation, and the pursuit of perfection continues to surpass the needs of loyal customers. For more information, visit us.glock.com.



WEDNESDAY BREAKFAST SPONSOR

Nammo is a technology-driven aerospace and defense company specializing in high-performance solutions for customers. As a leading provider of ammunition and rocket motors for military and civilian customers around the globe, Nammo operates through four business units: Commercial Ammunition, Small and Medium Caliber Ammunition, Large Caliber Systems, and Aerospace Propulsion. The company's portfolio of products includes, but is not limited to: polymer-cased ammunition, true fire-from-enclosure shoulder-launched munitions (M72 FFE), scalable offensive hand grenades, large scale propellant production, and composite solutions.

Nammo is engaged in designing, developing and testing new technologies to enhance existing platforms and systems including long range precision fires; ammunition that's effective in all environments; hybrid rocket engines; and critical ejection seat pyrotechnic components. With decades of experience Nammo also manages complex projects to safely and securely complete demilitarization processes in an environmentally responsible manner.

With the United States division headquartered in Arizona and the corporate headquarters in Norway, Nammo has more than 2,700 employees; operates 28 manufacturing and production sites; and has a presence in 12 countries

	Robotics Matt Dooley, Division Chair	Small Arms Steve Faintich, Committee Chair
	Level 4, Room 18A	Level 4, Ballroom D
1:00 – 1:20 pm	<p style="text-align: center;">24751</p> <p style="text-align: center;">Gesture Control for Small UAS and UAV Systems</p> <p style="text-align: center;">Pete Moutsatson Vice President, Business Development, Pison Technology</p>	<p style="text-align: center;">Suppressor Session</p> <p style="text-align: center;">Adam Jacob Chairman, NATO Dismounted Soldier Systems (DSS)/Weapons and Sensors SubGroup (WSSG) Suppressor Team of Experts <i>Moderator</i></p>
1:20 – 1:40 pm	<p style="text-align: center;">24734</p> <p style="text-align: center;">One Size Fits None: Integrating Unmanned Systems From the Bottom Up</p> <p style="text-align: center;">Bryan Clark Senior Fellow, Hudson Institute</p>	<p style="text-align: center;">Bang or Pop</p> <p style="text-align: center;">Dr. Michelle Swearingen U.S. Army Corps of Engineers, Engineer Research and Development Center, Construction Engineering Research Laboratory</p>
1:40 – 2:00 pm	<p style="text-align: center;">24813</p> <p style="text-align: center;">Free Space Optics (FSO) Lightwave Non-RF Data Communications for Robotic Systems in RF Denied Environments</p> <p style="text-align: center;">Dr. Leo Volfson President, Torrey Pines Logic, Inc.</p>	<p style="text-align: center;">Effects of Sound on the Human Ear</p> <p style="text-align: center;">Ruth Foutz U.S. Army Public Health Center</p>
2:00 – 2:20 pm	<p style="text-align: center;">24822</p> <p style="text-align: center;">Lethal and Non-Lethal Launchers with Variable Trajectory Grenades for Robotic Systems</p> <p style="text-align: center;">Howard Kent Chief Executive Officer, Armor Development Group LLC</p>	<p style="text-align: center;">Human Eye Perception of Flash</p> <p style="text-align: center;">Dr. David Dye NSWC Crane</p>
2:20 – 2:50 pm	<p>NETWORKING BREAK EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER</p>	

GARM/Munitions Matthew Phillips, GARM Committee Chair Don McLaughlin, President, T-Worx Technologies	UEA/GARM Alan Kull, UEA Committee Chair Matthew Phillips, GARM Committee Chair
Level 4, Room 18B-C	Level 4, Room 18D
<p style="text-align: center;">Wall Street Perspective</p> <p style="text-align: center;">Pierre Chao Proteus Capital Solutions</p>	
<p style="text-align: center;">Ukraine Update</p> <p style="text-align: center;">Maj. Gen. Borys Kremenetsky Defense Attaché, U.S. Embassy of Ukraine</p> <p style="text-align: center;">MG Volodymyr Havrylov (Ret) Deputy Minister of Defense, Ukraine</p> <p style="text-align: center;">Denys Kalachov Founder, Association of Ukraine Defense Manufacturers</p>	<p style="text-align: center;">The Emerging Technologies Institute: NDIA's Own Think Tank</p> <p style="text-align: center;">Dr. Mark Lewis Executive Director, Emerging Technologies Institute (ETI)</p>
<p>NETWORKING BREAK EXHIBIT HALL 5, LEVEL 1, AUSTIN CONVENTION CENTER</p>	

	Robotics Matt Dooley, Division Chair	Small Arms Steve Faintich, Committee Chair
	Level 4, Room 18A	Level 4, Ballroom D
2:50 – 3:10 pm	24712 Mission Planning for Multiple Autonomous CBRN Robotic Platforms Kurt Bruck Division Manager, Neya Systems	Small Arms Technology Development Ross Towers Lead for Soldier Lethality CFT (A), U.S. DEVCOM Armaments Center Moderator 24699 Small Arms Point Defense Systems (SAPDS) Matthew Thompson Engineer, NSWC Crane Suppressor Condemnation, Sustainment Dr. Leslie Fleming Engineer, Small Arms Signature Lab, Naval Surface Warfare Center 24824 Advancements in Armor Piercing Ammunition Jay Bell Business Development, UDC USA, Inc. Matthew Young Technical Director, UDC USA, Inc. 24800 Supersonic eXtreme Material Penetrator (XMP) and Subsonic Penetrator (SUB-P) Thomas Campion Sales Director, USA, DSG Technology 24741 Engaging Underwater Threats with Supercavitating Ammunition Torgim Joergensen Senior Vice President, Business Development, DSG Technology 24727 An Alternate Method for Determining Penetration Limit Velocities Using Residual Velocity Data Kenneth Hohnecker Mechanical Engineer, U.S. Army DEVCOM-AC 24722 Full Performance Reduced Range Bullets R2: A Revolutionary Technology for Minimizing Collateral Damage Kevin Sullivan Nostromo, LLC 24769 Dynamic Motion of Carbon Fiber Over-Wrapped Rifle Barrels Timothy Cler Mechanical Engineer, Army Research Laboratory
3:10 – 3:30 pm	24714 Defensive Squad Equipment Transport (DSET). Autonomous Platform for Ground-Based Warfighter Protection, Supply, Navigation, and Evacuation Dr. Brandon Conover Chief Executive Officer, Practical Scientific Solutions, Inc.	
3:30 – 3:50 pm	24740 A Literature Review of Simulation Fidelity and Transfer of Training for Autonomous Vehicles Professor Christopher Johnson Assistant Professor, Embry-Riddle Aeronautical University	
3:50 – 4:10 pm	24508 Air Force Civil Engineer Robotic Applications Steven Bailey Research Engineer, Air Force Civil Engineer Center	
4:10 – 4:30 pm	Closing Remarks Matt Dooley Chair, NDIA Robotics Division	
4:30 – 4:50 pm		
4:50 – 4:55 pm		Closing Remarks Steve Faintich Chair, NDIA Small Arms Committee

	GARM/Munitions Matthew Phillips, GARM Committee Chair Don McLaughlin, President, T-Worx Technologies	UEA/GARM Alan Kull, UEA Committee Chair Matthew Phillips, GARM Committee Chair
	Level 4, Room 18B-C	Level 4, Room 18D
2:50 – 3:10 pm	Legislative Update Jay Brannam Executive Director, Munitions Industrial Base Task Force	24554 Blast Amplifying Projectile Bodies for Medium and Large Caliber Projectiles Robert Folaron Chief Executive Officer, nP Technology LLC
3:10 – 3:30 pm		24721 XM813 Bushmaster Chain Gun & Linkless AHS Technology and its Integration Into the Stryker MCWS Jesse Behrens Senior Principal Systems Engineer, Northrop Grumman Corporation Vince Virga Project Engineer, Nobles Worldwide, Inc.
3:30 – 3:50 pm	Armaments, Robotics, and Munitions from a Threat Perspective MAJ Marc Jason, USA Threat Integration, Headquarters, Department of the Army, G-2	24707 Outgunning the A-10 With an Apache or Fara: New Flight-Safe Discarding Sabot Ammunition for Attack Rotorcraft Dr. Ronald Barrett Professor, University of Kansas
3:50 – 4:10 pm		24832 Assessing Potential Capability Enhancements of Hand Grenades Filled with CL-20 Compared to Current MK3A2 & M67 Hand Grenades Jonathan Geymer Technical Intern, ARA
4:10 – 4:30 pm	Utility of Drones in Modern Warfare Stavros Daskos President, ING Robotic Aviation, Inc.	24833 Highest Performing, Lowest CSWAP MEMS IMU for Precision Guided Munitions Louis Ross Chief Executive Officer, MEI Micro, Inc.
4:30 – 4:50 pm		24720 Introduction to the Dual Feed M230LF/XM914 Chain Gun John Inman Principal Systems Engineer, Northrop Grumman Corporation
4:50 – 4:55 pm	Closing Remarks Don McLaughlin President, T-Worx Technologies	Closing Remarks Matthew Phillips Chair, NDIA GARM Committee

LIVE FIRE DEMONSTRATING COMPANIES

Aero Precision

Explotrain LLC

FN America

HDT Global

HUXWRX Safety Co.

KGM Technologies

Nammo MAC

Radical Firearms/Radical Defense

SureFire, LLC

Trijicon, Inc

ABSTRACT SUMMARIES

EOD

24496

Advanced Textiles Bring a New Level of Comfort & Performance to EOD Personal Cooling Systems

James McLaughlin

Military operations have increased in hot climates where human performance is highly subject to time limitations. Kennon has demonstrated that a better cooling system, designed to the latest science and advanced textile technology, addresses these requirements with a unique design that flows cold carbon dioxide through a scientifically-tailored and channeled vest or bodysuit.

GARM

24554

Blast Amplifying Projectile Bodies for Medium and Large Caliber Projectiles

Robert Folaron

This presentation discusses a molded projectile body application which enhances explosive filler and fragmentation effects.

This presentation summarizes the latest progress in Flight Safe Discarding Sabot (FSDS) ammunition for attack rotorcraft. This new class of aerial gunnery ammunition is shown to possess dramatically more KE on target, greater ranges, flatter trajectories, and tighter CEPs than conventional M50 and PGU-series 20mm ammunition and lower costs than the M789 30mm ammunition as well.

24707

Outgunning the A-10 with an Apache or FARA: New Flight-Safe Discarding Sabot Ammunition for Attack Rotorcraft

Dr. Ronald Barrett

24720

Introduction to the Dual Feed M230LF/XM914 Chain Gun

John Inman

An introduction to the Dual Feed M230LF/XM914 which will allow the operators to carry two different ammunition types. High-level details will be provided on the weapon design, integration requirements, and current development status.



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- 24721**
XM813 Bushmaster Chain Gun & Linkless AHS Technology & its Integration into the Stryker MCWS
Jesse Behrens
 This presentation will discuss the development history of the XM813 as well as its design differences between other Mk44 Bushmaster Chain Guns. A high-level overview of the XM813 integration into the Stryker MCWS turret will be provided. In addition, an overview of Nobles Worldwide linkless ammunition handling technology will be presented.
- 24832**
Assessing Potential Capability Enhancements of Hand Grenades Filled with CL-20 Compared to Current Mk3A2 & M67 Hand Grenades
Jonathan Geymer
 Potential capability enhancement of grenade filled with CL-20 contrasted with conventional fill grenades.

- 24833**
Highest Performing, Lowest CSWaP MEMs IMU for Precision Guided Munitions
Louis Ross
 Description of the first chip-scale, multi-axis MEMs inertial sensor system platform for precision guided munitions.

ROBOTICS

- 24508**
Air Force Civil Engineer Robotic Applications
Steven Bailey
 This presentation will inform the audience about the Air Force Civil Engineer Center Airbase Technology Branch's mission; capability areas; and robotics research, development, test, and evaluation efforts which support Air Force explosive ordnance disposal and civil engineer airmen performing airfield damage repair.
- 24534**
Rapid Development of Secure Robotic Platforms
Dr. Hal Aldridge
 The operational applications of robotic systems and their software complexity are evolving rapidly necessitating a renewed emphasis on required cybersecurity standards to operate in contested environments. This presentation will discuss DevSecOps and cybersecurity challenges unique to robotic systems and the new technologies available to enable rapid development and cybersecurity certifications/Authority to Operate.
- 24712**
Mission Planning for Multiple Autonomous CBRN Robotic Platforms
Kurt Bruck
 Neya Systems has been developing a mission planning software suite to task and coordinate fleets of autonomous air and ground CBRN vehicles.
- 24714**
Defensive Squad Equipment Transport (DSET): An Autonomous Platform for Ground-Based Warfighter Protection, Supply, Navigation & Evacuation
Dr. Brandon Conover
 A robotic, autonomous platform prototype showcases capabilities in Warfighter protection under fire, personnel re-supply, navigational assistance, and emergency evacuation. A unique drivetrain has been coupled with computer vision and robotics resulting in a force multiplier for ground-based units.
- 24723**
Supervised Autonomous Function Executive: An Autonomy Enabler
Dean Barten
 Certification of autonomous vehicle behavior can be greatly enabled if an independent safety net is placed around the vehicle.
- 24734**
One Size Fits None: Integrating Unmanned Systems from the Bottom Up
Bryan Clark
 Realizing the benefits of unmanned systems requires an approach for integrating them into teams that establish their tactics, networks, and force compositions in mission time.
- 24740**
A Literature Review of Simulation Fidelity & Transfer of Training for Autonomous Vehicles
Professor Christopher Johnson
 There is ample research that details the effectiveness of simulation for training human operators for the cognitive demands of high-risk work environments. However, more research is needed to guide practitioners in using simulation to train and test artificial intelligence for autonomous agents such as robotic vehicles, so we conducted a literature review to consolidate what has been published to date on the topic, the details of which are provided herein along with suggestions for filling gaps in the literature.
- 24742**
Person Tracking, Re-Identification & Threat Detection by Autonomous Unmanned Systems within Complex Urban Environments
Dr. Matt Brown
- 24743**
AFRL Autonomous Collaborative Enabling Technology
LtCol Lawrence Ware, USAF
 Autonomous Collaborative Enabling Technologies (ACET) Integrates technologies across AFRL to support Autonomous Collaborative Platform Mission concepts as well as Multi-Domain Collaboration.

24751

Gesture Control for Small UAS and UAV Systems

Pete Moutsatson

Gesture control of small unmanned systems is gaining favor over manual control to enable enhanced situational awareness for warfighters.

24813

Free Space Optics (FSO) Lightwave Non-RF Data Communications for Robotic Systems in RF Denied Environments

Dr. Leo Volfson

Radio frequency (RF) control systems currently used on unmanned systems, representing everything from Predator drones to EOD unmanned ground vehicles, are vulnerable to barrage and deception electronic warfare degradation.

FSO systems operate with impunity in radio-frequency (RF) denied, contested and congested environments, and when RF is undesired, i.e. covert operations, EMCON, or personnel or asset safety during fuel and ordnance transfer.

Such a system would support cooperative sensing functionality via FSO similar to how the F35 uses such sensing over Link 16. Our system could be used as a Non-RF 'Link 16' for Robotics in a denied environment.

24822

Lethal & Non-Lethal Launchers with Variable Trajectory Grenades for Robotic Systems

Howard Kent

Addressing Five To 400 Meters With Gas, Smoke, Non-Lethal, HE and AP Grenades

24829

Robotic System for Maneuvering Munitions with Military Vehicles

Dr. Adam Brant

RE2 LLCs' Robotic Ammunition Maneuvering System (RAMS) is a robotic manipulation system being developed as a solution for alleviating the heavy-lift burden for soldiers within Self-Propelled Howitzer Systems during fire missions

24835

Emerging Armament Technologies for Unmanned Systems

Lucious Taylor IV

Army Futures Command (AFC)/Combat Capabilities Development Command (DEVCOM)/Armament Center (AC) and Naval Surface Warfare Center, Crane are collaborating in the ongoing Joint Tactical Unmanned Armaments Working Group (JTUAWG). The working group is a network of Army and Navy Laboratories that collaborate to develop small/miniature weapons for smaller Unmanned Systems in the land, air, and sea domains. This multi-domain capability will ultimately save friendly lives by giving small combat units the ability to conduct armed reconnaissance, and optionally engage the enemy with scalable effects, and without exposing warfighters to enemy fire.

SMALL ARMS

24699

Small Arms Point Defense Systems (SAPDS)

Matthew Thompson

The Small Arms Point Defense System project is evaluating multiple enabling technologies for crew-served weapons to improve warfighter performance against small, maneuvering targets.

24700

Determining Representative Travel Distances for Small Arms Ammunition

Shawn Spickert-Fulton

This presentation will look at the effect of drag on max range estimates for training ammunition

24722

Full Performance Reduced Range Bullets R2: A Revolutionary Technology for Minimizing Collateral Damage

Kevin Sullivan

A new small caliber ammunition with reduced range, reduced ricochet using a eutectic core.

24727

An Alternate Method for Determining Penetration Limit Velocities Using Residual Velocity Data

Kenneth Hohnecker

This presentation will demonstrate an alternative method for determining penetration limit velocities of small arms projectiles from test data. The method uses the residual velocity of the projectile after penetrating the target in order to obtain a more accurate limit velocity prediction as compared to traditional binary regression models (i.e., methods that only record penetration or no penetration).

24729

The Theory Behind DEVCOM Armaments Center's Gelatin Terminal Assessment Process

Gavin McFarland

This presentation will provide the theory behind how DEVCOM AC dissects, analyzes, and assesses terminal data from gelatin block testing.

24741

Engaging Underwater Threats with Supercavitating Ammunition

Torgrim Joergensen

DSG's patented supercavitating ammunition is designed to initiate a cavitation bubble at its nose which reduces the skin friction drag on the supercavitating round, allowing the bullet to travel at high speed through the water. Additionally, the use of tungsten material allows this ammunition to offer exceptional armor piercing capability against multi-layer structures, structures of unique materials, and improved body armor materials.

24769

Dynamic Motion of Carbon Fiber Over-Wrapped Rifle Barrels

Timothy Cler

Testing barrel whip and dispersion correlations of Carbon Fiber over-wrapped barrels.

24800

Supersonic eXtreme Material Penetrator (XMP) and Subsonic Penetrator (SUB-P)

Thomas Campion

DSG's patented supersonic "eXtreme Material Penetrator (XMP)" ammunition is designed to defeat hard targets. These projectiles have a very high Ballistic Coefficient and are very accurate (Sub 1 MOA). The SUB-P version is the same projectile loaded for subsonic performance.

24824

Advancements in Armor Piercing Ammunition

Jay Bell

UDC has been working on advanced Armor Piercing Projectiles in 308 to 338 Calibers.

UEA

24706

Hypersonic Aerial Gunnery Ammunition

Dr. Ronald Barrett

This presentation summarizes the latest progress in hypersonic ammunition for fixed- and rotary-wing attack aircraft. This new class of aerial gunnery ammunition is designed to cut times of flight and CEP dramatically while maintaining extremely flat trajectories and high levels of KE on target while introducing no increase in recoil forces to the airframe.

24726

Evolving Armament Systems to Support Multi-Domain Operations

Jonathan Ross

Our focus is on the continued evolution of armament solutions to support multi-domain operations by providing operators with the flexibility to configure platforms to safely carry and release multiple stores types and increase stowed kills.

24735

Non-Lethal Counter-Personnel Tactical Robotic Energetic Delivery Systems (TREDS)

John Chapman

TREDS (Tactical Robotic Energetic Delivery System) is an energetic payload delivery system for integration on small tactical vehicles/ platforms and small manned and unmanned systems (UxS). A multi-mission payload capability fosters discretion and pinpoint accuracy with optimized system size, weight, and power consumption.

24826

Modernized GPS and Digital Anti-Jam Contributions to the Range and Lethality Challenge to MDO/JADO

Justin Wymore Sr.

This presentation will discuss the role of precision geolocation in achieving weapons lethality at extended ranges and with autonomous loitering munitions; the trade space between the guidance, navigation, and control (GNC) components required to achieve that precision; define and distinguish absolute precision PNT; define the Radio Frequency (RF)-challenged conditions impacting the effectiveness of GPS-based PNT solutions; and present a model by which to understand, prioritize, and defeat those threats.

24838

Lone Wolf: Weaponized Quadrupeled Unmanned Ground Vehicle (Q-UGV)

Bhavanjot Singh

Weaponized Small Quadrupeled Unmanned Ground Vehicles (Q-UGVs) can help provide lethality and significant capability enhancement over difficult terrain and small spaces.

POSTER PRESENTERS

24494

Scorpion Mobile Mortar System

Michael Cherry

Director of Product Development

Scorpion Mobile Mortar system is a fully digital, INSANELY FAST mobile mortar system that revolutionizes how mortars are used on the battlefield. This 81mm/120mm interchangeable mortar system has a shoot and scoot capability that fires eight rounds on target (from park to drive away) in under two minutes.

24497

Zinc EPR Slug

Tyler Holland

5.56mm APO, DEVCOM-AC

Feasibility study to investigate potential materials that can be used to replace copper as the primary material for slugs in lead free ammunition. Performance impacts related to this change are analyzed.

24539

Eliminating Threading For Medium Caliber Projectile Assembly With Advanced Adhesives

Harry Arnon

CEO, Hernon Manufacturing, Inc.

Threads need structures to fit into better dedicated to fragments and energetics. Whenever you thread on a nut to a bolt or stud, you sacrifice the areas of the thread height and supporting structures behind the threads in your internal volume package.

24542

Countering The Root Cause Behind Barrel Erosion With Nano-Particulate Refractory Metals

David Tubb

CEO, TUBB Precision, Inc.

A Barrel Treatment That Does More Than Treat The Symptoms Of Barrel Erosion And Wear

24547

Advanced Condition Based Maintenance Retrofits For Ammunition Production.

Howard Kent

CEO, Armor Development Group LLC.

We're not talking predicting the future by analyzing the past: It's about affordable real time networked parametric monitoring.

24550

Dual Purpose Armor Penetrating And Personal Defense Handgun Ammunition

Cameron Hopkins

CEO, Super Vel Ammunition, Inc.

Defeating threats wearing soft body armor and highly effective without armor.

24553

Frangible Ammunition For Explosive Ordnance Disposal Missions:

Sueax Larreau

Director Of Ammunition, Maxim Defense Ammunition

Frangible ammunition for explosive ordnance disposal missions because sometimes you want more than one shot.

24570

The Fastest Way For Governments Around The World To Obtain US Military Standard Ammunition

Jerry Luger

International Sales, OLIN Winchester

An educational introduction to commercial sales from Icaap and second source manufacturers.

24573

Rapid Deploying Shoulder Support Speed Bar For Spade Grip Weapons:

Howard Kent

CEO, Armor Development Group LLC.

Rapid deploying shoulder support speed bar for spade grip weapons: the same functionality as the MK93 mount version, except for the rest of us.

24579

Variations in bolt face and extraction forces in small caliber weapon systems due to cartridge case material

Raymond Chaplin

Mechanical Engineer, CCDC-AC

A study on the impact on bolt face and extraction forces due to changes in cartridge case materials. Brass, Polymers, and high strength steel cases are compared.

24581

The More Bang For Your Research Buck: Piggyback Testing Review Board Proposal

Howard Kent

Consultant, Armament Mechanical LLC

Because why not test multiple non-conflicting items at once?

24634

Robotic TRAP T-360 Ultra-Light ROWS

John Warner

Strategic Account Manager, IEC INFRARED SYSTEMS / PRECISION REMOTES

The T-360 is a lightweight remotely operated weapon system used on robotic UGV, LTAV, APC, and MRZR to increase lethality and soldier fire suppression accuracy.

24687

Combat Optimized Ballistic Remote Armament (COBRA)

Alexander Smith
U.S. Army, CCDC AC

COBRA is a purpose built remote weapon station designed with size, weight, and power as key considerations.

24688

5.56mm Single Barrel Externally Powered Weapon for Remotely Operated Systems

Alexander Smith
U.S. Army, CCDC AC

US Army DEVCOM Armaments Center has been working with McNally Industries LLC to develop a lightweight single barrel externally powered 5.56mm weapon for arming small remotely operated ground and aerial platforms.

24702

PATCH: Encrypted, Off-Grid Texting, Geolocation & Activity Monitoring

Maeve Garigan
CEO, Roper

PATCH is a waterproof, body-worn device that is styled as a US flag patch. Packed with next generation AI-enabled sensor technology, PATCH provides leap-ahead capability in automated identification friend or foe (IFF), situational awareness and secure tactical communication, and is the result of three years of internal research and development, with multiple peer-reviewed technical papers published and patents filed.

24703

Infrared search and track (IRST) for long-range, wide-area detect and avoid (DAA) on small unmanned aircraft systems (sUAS)

Dr. Stephen Snarski
Director, Autonomous Systems, Modern Technology Solutions, Inc.

This paper describes ongoing research and development work demonstrating the potential for airborne long-range infrared target detection (infrared search and track, IRST) to meet critical requirements for small unmanned aircraft systems (sUAS) detect and avoid (DAA).

24705

Hexavalent Barrel Chrome Replacement

Zachary Torigian
Weapons Engineer, U.S. Army DEVCOM-AC

The purpose of this brief is to present the challenges, toxicity concerns, methodology and preliminary data from the US Army Hexavalent Barrel Chrome Replacement effort to the defense community. The presentation will illustrate the need for hexavalent chrome alternatives for small arms. The brief will contain technical content related to ongoing developments by both the USG and industry to develop alternate coatings, platings, and/or surface treatments to replace hexavalent chrome.

24708

Lightweight, Heat-Emissive Design for Extending Barrel Life

Kenneth Decker
Business Development/Operations, TacomHQ

Using geometric structuring to dissipate heat, lighten, accurize, and prolong the service life of small arms barrels.

24710

Compact Lightweight Freeform GRIN Optics for Small Arms Fire Control

LTC Robert Dionisio, USA (Ret)
DEVCOM-AC

The government is designing freeform gradient-index (GRIN) optics that will enable a reduction in the number of lens elements required to reproduce color-corrected imagery to benefit squad, crew-served, and sniper fire-control systems by reducing the size, weight, and complexity of the optics used in fire-control systems.

24711

Catalyst-Pathfinder Program - Soldier Inspired Innovation

LTC Robert Dionisio, USA (Ret)
DEVCOM-AC

The Army is creating close working relationships between soldiers and universities in order to harness the creativity and technical skills of the nation's academic institutions to help the Army create better and faster solutions to real problems.

24718

HIMARS Guardian

Mike Sparks
Inventor

Force multiplication of MLRS ground mobile systems to deploy and thrive against enemy Surveillance Strike Complexes (SSCs). We interdict them; they don't evict us.

24719

Pressure Discriminating Cartridge Chamber

Brian Hoffman
Chief Engineer, NSWC Crane Weapons Systems Division

The pressure discriminating cartridge chamber allows for reliable passive system response to the inadvertent use of higher-pressure ball ammunition encountered during training activities or other firing events expecting the use of lower-pressure blank ammunition.

24724

Wheel Placement Reasoning in Rugged Off-road Terrain

Andrew Capodiec
Director of Robotics, Neya Systems, LLC

Neya is advancing the state of the art in off-road planning by developing wheel and track placement reasoning modules that enable Robotic Combat Vehicles (RCVs) to navigate rugged off-road terrain.

24728

Improving the Machinability of Refractory-Lined Gun Barrels

Dr. Jason Davis
Mechanical Engineer, NSWC Crane

Early results of a study focused on using a recently discovered mechanochemical effect to assist in the rifling of refractory-lined gun barrels.

24732

Rizse Autonomous Inspection Drone (RAID) for Fixed-Wing Aircraft

Colby Harvey
CEO, Rizse

The Rizse Autonomous Inspection Drone (RAID) is an air system that utilizes a 3D LiDAR and high-resolution camera to inspect fixed-wing aircraft in 20 percent of the current manual processes. The data is processed through an Artificial Intelligence system to locate and classify the damage type, enabling faster turn-around time for maintenance events.

24733

Artificial Intelligence Automated Malicious Location Detection Solution

Angela Henderson
Founder & CEO, RescueTrek Corp.

The SMARTExit Sign is an enhanced Artificial Intelligence Situational Awareness solution. It is a game-changer in tracking and accountability for safety and response during an Active Shooter scenario.

24737

NSWC-Crane Small Arms Flash Signature Kit

Dr. Leslie Flemming
Engineer, Naval Surface Warfare Center Crane

NSWC-Crane has an updated flash kit that takes advantage of additive manufacturing and commercial off-the-shelf components. The hardware and software package are available via a CRADA with NSWC-Crane.

24739

Supervised Autonomous Function Executive: An Autonomy Enabler

Dean Barten
Senior Principal Engineer, MTSI

Certification of autonomous vehicles would be enabled if a independent safety net was provided.

24744

Methods for Evaluating Blowback in Suppressed Weapon Systems

Jonathan VanBurskirk
R&D Engineer, NSWC Crane

A poster summarizing methods for measuring the increase in blowback provided by the addition of a suppressor on a weapon system

24745

Novel Small Arms Projectiles

Jonathan VanBurskirk
R&D Engineer, NSWC Crane

A poster covering various novel projectile technologies being explored in NSWC Crane's Small Arms Emerging Technologies Branch.

24746

Autonomous Refueling

Ben Bosma
Principal Engineer, Modern Technology Solutions, Inc.

A Method and Apparatus for Autonomous Air to Air and Air to Ground Refueling.

24748

Triton gen III Autonomous Underwater and Surface Vehicle (AUSV)

Jeffrey Williams
Vice President, Ocean Aero

Ocean Aero has pioneered a dual-modality and environmentally powered Autonomous Underwater and Surface Vehicle (AUSV). This unique capability offers customers a payload agnostic platform which can be deployed far from any designated operational area, navigate, and avoid detection along the route, perform its mission and return.

24762

Collins Aerospace Multi-function Modular Seeker Technology

Gary Willenbring
Senior Principal Systems Engineer, Collins Aerospace

Collins Aerospace is progressing the development of a modular seeker architecture composed of capability building blocks made possible through standard interfaces across the modules. This approach leverages technology across weapon platform applications creating value for the customer through reduced funding and technical risk. Customers implementing our technical solution allows new development programs to get to field testing faster with significantly lower risk.

24821

A Different Twist On 338 AP Penetration And Accuracy

Robert Folaron
CEO, nP Technology LLC

Leveraging Match Accuracy Developments To Improve Armor Penetrating Rounds

24825

High Accuracy 40mm Grenade Concept

Jay Bell
Business Development, Lake City Group

Applying rifle and cannon caliber projectile accurizing techniques to the 40mm grenade family.

BIOGRAPHIES



LTG THOMAS TODD III, USA

Deputy Commanding General, Acquisition and Systems Management, Chief Innovation Officer, U.S. Army Futures Command

LTG Thomas H. Todd III began his service as the Deputy Commanding General

for Acquisition and Systems and the Chief Innovation Officer at U.S. Army Futures Command in July 2020.

In these executive roles, he is responsible for technology integration and capabilities development in the Army's research laboratories and centers. He previously served in numerous roles as Special Assistant for Acquisition and Systems Management to the Commanding General, U.S. Army Materiel Command, Program Executive Officer for Army Aviation, Deputy Commanding General of Research, Development and Engineering Command, Senior Commander of Natick Soldier

Systems Center, and Modernization Advisor to the Director, Army Capabilities Integration Center. Todd led Army and Joint programs at all echelons, delivering advanced capabilities to soldiers, joint services, other government agencies, and over 60 foreign allied nations. He developed and delivered advanced capabilities CH-47F, H-60M, H-60V, AH-64E, Improved Turbine Engine, MQ-1C Gray Eagle ER, UH-72 Lakota, EMARSS-E, and the Black Hawk Aircrew Trainer. His joint assignments include: Defense Contract Management Agency Special Programs Multi-Service Team, Chief of Contracts, Joint Task Force Bravo, Honduras. Operationally, he served with A Co 3/501st Aviation Regiment in the Republic of Korea and 4th Squadron, 6th Cavalry Brigade, Fort Hood, TX. Todd is

a 1989 graduate of The Citadel. He is an honor graduate of the Army's Initial Entry Rotary Wing training and a graduate of the Kiowa and Black Hawk Maintenance Test Pilot courses. He holds Masters of Science degrees in Contract Management and Strategic Studies from the Florida Institute of Technology and the U.S. Air War College, respectively. His awards and badges include the Legion of Merit (2 Oak Leaf Cluster), the Defense Meritorious Service Medal, the Meritorious Service Medal, the Joint Service Commendation Medal and other Army and joint commendations and awards. He is an Air Assault graduate and a Senior Army Aviator, rated in the UH-1 Iroquois, OH-58 A/C Kiowa, UH-60 A/L/M Black Hawk and CH-47 D/F Chinook.



DR. MARK LEWIS

Executive Director, Emerging Technologies Institute (ETI)

Dr. Mark J. Lewis is the Executive Director of NDIA's Emerging Technologies Institute (NDIA ETI), a non-

partisan think tank focused on technologies that are critical to the future of national defense. ETI provides research and analysis to inform the development and integration of emerging technologies into the defense industrial base.

Prior to this position, Lewis was the Director of Defense Research & Engineering in the Department of Defense (DoD), overseeing technology modernization for all Services and DoD Agencies, as well as the acting Deputy Under Secretary of Defense for Research & Engineering. In that role, he was the Pentagon's senior-most scientist, managing a \$17B budget that included DARPA, the Missile Defense Agency, the Defense Innovation Unit, the Space Development Agency, Federally Funded Research and Development Centers (FFRDC), and the Department's basic and applied research portfolio.

From 2012 to 2019, Lewis was the Director of the Science and Technology Policy Institute, an FFRDC that supported the Executive Office of the President and other Executive Branch agencies in the formulation of national science and technology policy. Lewis is a professor emeritus at the University of Maryland, where he served as the Willis Young, Jr., Professor and Chair of the Department of Aerospace Engineering until 2012. A faculty member at Maryland for 25 years, Lewis taught and conducted basic and applied research in the fields of hypersonic aerodynamics, advanced propulsion, and space vehicle design and optimization. Best known for his work in hypersonics, Lewis's research has spanned the aerospace flight spectrum from the analysis of conventional jet engines to entry into planetary atmospheres. From 2004 to 2008, Lewis was the Chief Scientist of the U.S. Air Force, the principal scientific adviser to the Chief of Staff and Secretary of the Air Force. As the longest-serving Chief Scientist in Air Force history, his primary areas of focus included hypersonics, space launch,

energy, sustainment, advanced propulsion, basic research, and workforce development. From 2010 to 2011, he was President of the American Institute of Aeronautics and Astronautics.

Lewis attended the Massachusetts Institute of Technology, where he received his Bachelor of Science in Aeronautics and Astronautics, Bachelor of Science in Earth and Planetary Science (1984), and Master of Science (1985) and Doctor of Science (1988) in Aeronautics and Astronautics. He is the author of more than 320 publications and has been an adviser to more than 60 graduate students. In addition, he has served on various boards for NASA and DoD, including two terms on the Air Force Scientific Advisory Board. He is also a recipient of the USAF Exemplary, Meritorious, and Exceptional Civilian Service Awards, and of the Secretary of Defense Outstanding Public Service Award, among others.



COL COREY BEAVERSON, USAF

Director of Mission Prototypes, Office of the Under Secretary of Defense for Research and Engineering, Prototyping and Experiments Directorate)

Colonel Corey Beaverson currently serves as the Director of Mission Prototypes

under the Office of the Under Secretary of Defense for Research and Engineering, Prototyping and Experiments Directorate, and leads the execution of Foreign Comparative Technology programs.

Beaverson served as commander, 47th Cyberspace Test Squadron, Joint Base San Antonio, TX. The squadron conducts test and evaluation of offensive and defensive cyber weapon systems and evaluates the resiliency and survivability of other weapon systems vital to executing the core functions of the Air Force in a cyber-contested environment.

He enlisted in the Air Force in 1992 as a signals intelligence analyst and was granted a Reserve Officer Training Corps Scholarship in 1995.

Following commissioning, Beaverson served as a measurement and signatures intelligence analyst supporting operations Allied Force, Northern Watch, Southern Watch, and Enduring Freedom. Later, he served in various flight test engineer capacities supporting E-3C,

T-38A, C, KC-135R, KC-10A, C-5M, C-17A, YAL-1, F-16C/D, F-35A, and electronic warfare tests.

As an engineer assigned to B-1B maintenance, he deployed in support of operation Enduring Freedom as Officer in Charge of an aircraft maintenance recovery team to return a B-1B to flying status following a Class-A mishap and damage sustained during combat operations. Later, he served as Operations Officer during the Airborne Laser first chemical carry, first light-in-flight, and system demonstration. Additionally, he was a member of the initial government cadre that transitioned F-35A operations from the contractor facility to Edwards AFB, CA; in this capacity he assisted with the delivery of the first three aircraft and conducted elevated-risk flight sciences and envelope expansion testing.

He served as the Operations Officer at the Benefield Anechoic Facility where he was responsible for antenna pattern measurements, electromagnetic interference compatibility tests, and classified electronic warfare tests. Additionally, Beaverson was responsible for the development, operations and maintenance of the Digital Integrated Air Defense System model, an F-16 systems

integration laboratory, and F-35 manned flight simulators. He was then selected to serve as an Operating Location commander responsible for classified electronic warfare test capabilities.

While assigned to the Pentagon, he directed the planning, programming, budgeting, and security of Special Access Programs for a \$3.8 billion dollar investment over the Future Years Defense Program. Additionally, Beaverson served as the Program Element Monitor for advanced weapon technologies and was the primary Air Force interface to Congress, the Office of the Secretary of Defense, Combatant Commanders and other services on the joint development of advanced weapons capabilities.

Serving as a Detachment commander at Hanscom AFB, MA, he guided test and evaluation involvement within command & control, intelligence, surveillance, reconnaissance, and nuclear command, control, and communications acquisition activities across three Program Executive Officer's portfolios valued at more than \$31 billion dollars. Beaverson has more than 380 hours flying time in 28 different aircraft types.



H.E. OLEKSII REZNIKOV

Minister of Defence, Ukraine

H.E. Oleksii Reznikov is a Ukrainian lawyer and has served as the Minister of Defence of Ukraine

since November 2021.

From 1984 to 1986, Reznikov served in the Airborne Parachute Troops of the USSR Air Force. In 1991 he co-founded the brokerage company Galicia Securities. From 1999 – 2002 he served as the Deputy Chairman of the Center for the Development of Ukrainian Legislation in Kyiv.

In 2000 he established the law firm Pravis, that was later merged in 2006 with the law firm Magister and Partners, named the foremost law firm in Russia and the CIS. In 2011-2014, he served as Head of Litigation

Practice at Egorov, Puginsky, Afanasiev and Partners. He served as an attorney and partner at Magisters.

In 2008-2014, he served in various capacities at the Kyiv City Council. On June 2014, he was elected Deputy Mayor – Secretary of Kyiv City Council VII. From 2015 to 2016, he was the Head of the Ukrainian National delegation to the Congress of Local and Regional Authorities of the Council of Europe, and Deputy Chairman of the Mayor of the Anti-Corruption Council.

He served as a Member of the Reformation Team for the Decentralization, Local Government and Regional Policy of the Ministry of Regional Development, Construction, and Communal Services of Ukraine; and as an advisor to Kyiv City's Mayor.

From April 2016 to September 2018 he served as Deputy Head of the Kyiv City State Administration, exercising power through the Kyiv City State Administration on the implementation of state policy in the areas of local self-government, domestic policy, international relations, tourism, advertising, protection of cultural heritage, education, culture, social protection, youth and sports. He was responsible for the implementation of reforms in the areas of decentralization, local government and other areas of life of the city of Kyiv.

In November 2018, he renewed his legal practice as a partner at the law firm, Asters. He specialized in alternative dispute resolution, including: expert opinions, negotiation, facilitation, conciliation, mediation, fact-finding, preliminary

independent assessment, pre-trial dispute resolution sessions and preparation of settlement agreements.

In 2005 and in 2019 he served as a member of the Supervisory Board of the State Savings Bank of Ukraine, or JSC Oschadbank.

In September 2019, he represented Ukraine in the working subgroup on political issues of the Trilateral Contact Group regarding a settlement to the war in Donbas. In March 19, 2020 he became a member of the National Security and Defence Council of Ukraine. On May 5, 2020 he was appointed as the first deputy of the Ukrainian delegation to the Trilateral Contact Group.

On March 4, 2020 he was appointed as Deputy Prime Minister, Ministry for Reintegration of the Temporarily Occupied Territories of Ukraine. And on November 4, 2021, Reznikov was appointed as Minister of Defence of Ukraine.



DAN SHEA

General Director, Phoenix Defence

Dan Shea is a U.S. Army veteran who has been involved in military small arms and defense

contracting for over 45 years. Shea is a certified government expert on small arms, and a Master Armorer certified as an

armorer instructor on the following weapons systems: M16 series, AK47 series, M203, GP25, M249/MK46, M240, M60 series, M2HB, MK19, NSV, PKM, DShK, KPVT, RPG7, Carl Gustav M3 84mm, AGS-17/ BGA-30, M134 Minigun, most shoulder-fired or tripod-mounted weapons systems. Shea designed and implemented the 1997

and 1999 Silencer trials. He founded Long Mountain Outfitters, LLC, a small arms specialty sales and training company in Henderson, NV. He has served as the Editor-In-Chief and Technical Editor of Small Arms Review for the past 27 years and the newer, international Small Arms Defense Journal for 14 years.

EMERGING TECH HORIZONS



An ETI Podcast

Listen in as our nation's security experts share their personal takes on the latest defense technology.

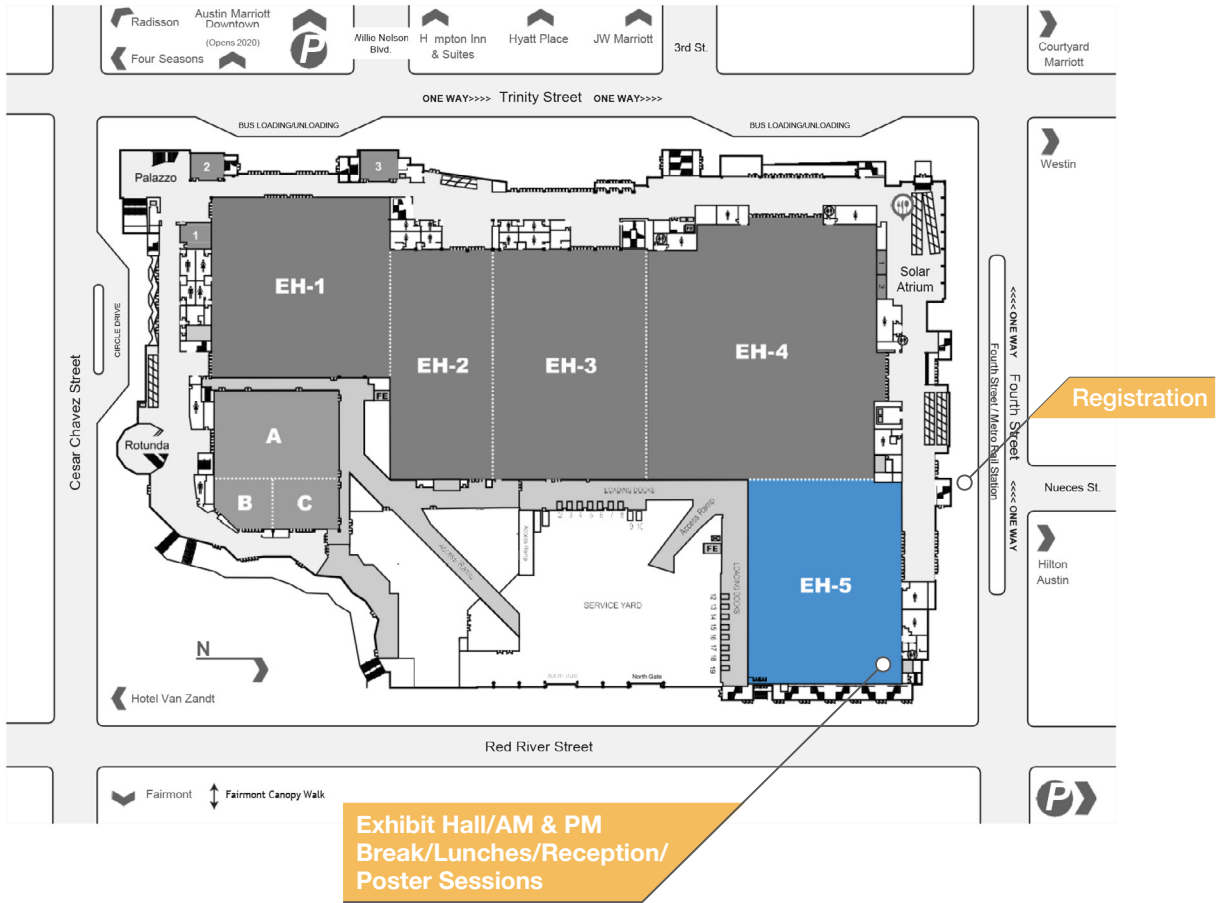
Hosted by our resident expert Dr. Mark Lewis, Executive Director of NDIA's new Emerging Technologies Institute, our brand-new podcast takes a deep dive into how technology will shape the future of warfare.

EmergingTechnologiesInstitute.org/Podcast

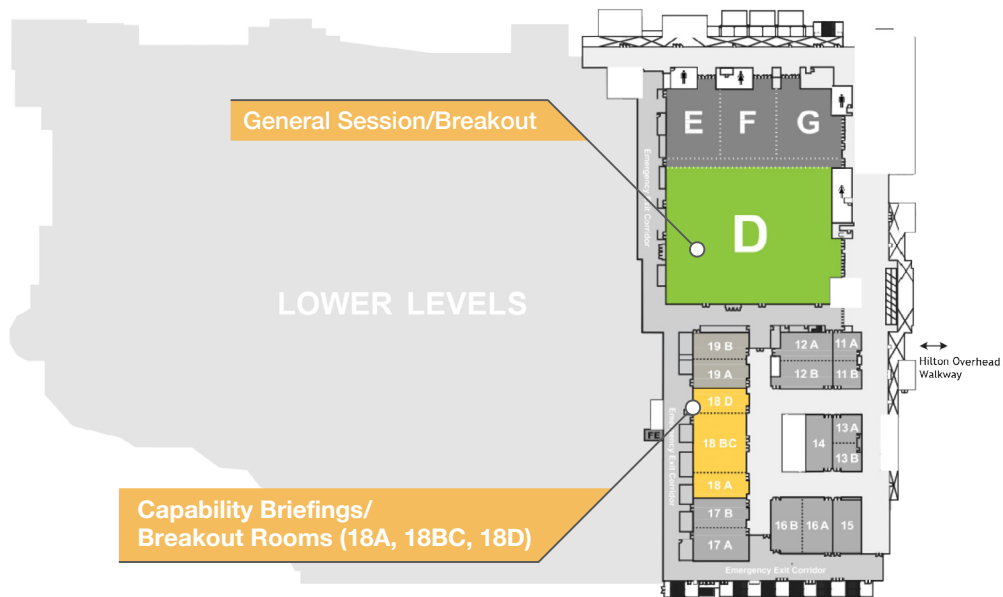


CONVENTION CENTER MAP

FLOOR 1 EXHIBIT HALLS, BALLROOMS AND MEETING ROOMS



FLOOR 4 GRAND BALLROOM, MEETING ROOMS



EXHIBITORS BY COMPANY

As of 9/9/2022

908 Devices	405	Envionics USA	212	National Armaments Consortium ...	523
ACTinBlack US, LLC	413	Explotrain LLC	324	National Defense Industrial Association (NDIA)	515
ADS, Inc.	423	Noble Supply & Logistics	204	NOVO DR Inc.	213
Aero Precision	513	Fjord Defence	210	Otis Technology	314
AimLock	205	General Dynamics - OTS	505	QinetiQ, Inc.	410
Aimpoint Inc.	422	Ghost Robotics	305	Radical Firearms/Radical Defense ..	320
Altaeros	315	HDT Global	214	Small Arms Defense Journal	514
Applied Research Associates (ARA) ..	310	HUXWRX Safety Co.	415	SmartRayVision	522
Barrett	414	KGM Technologies	304	SureFire, LLC	511
Bren-Tronics, Inc.	211	L3Harris	521	Teledyne FLIR	504
CEIA USA	411	LMT Defense	517	The University of Kansas	412
Defense Systems Information Analysis Center (DSIAC)	323	Long Capture	316	Trijicon, Inc.	217
DTC	311	Mistral Inc.	510	UDC USA	407

EXHIBIT HALL FLOORPLAN

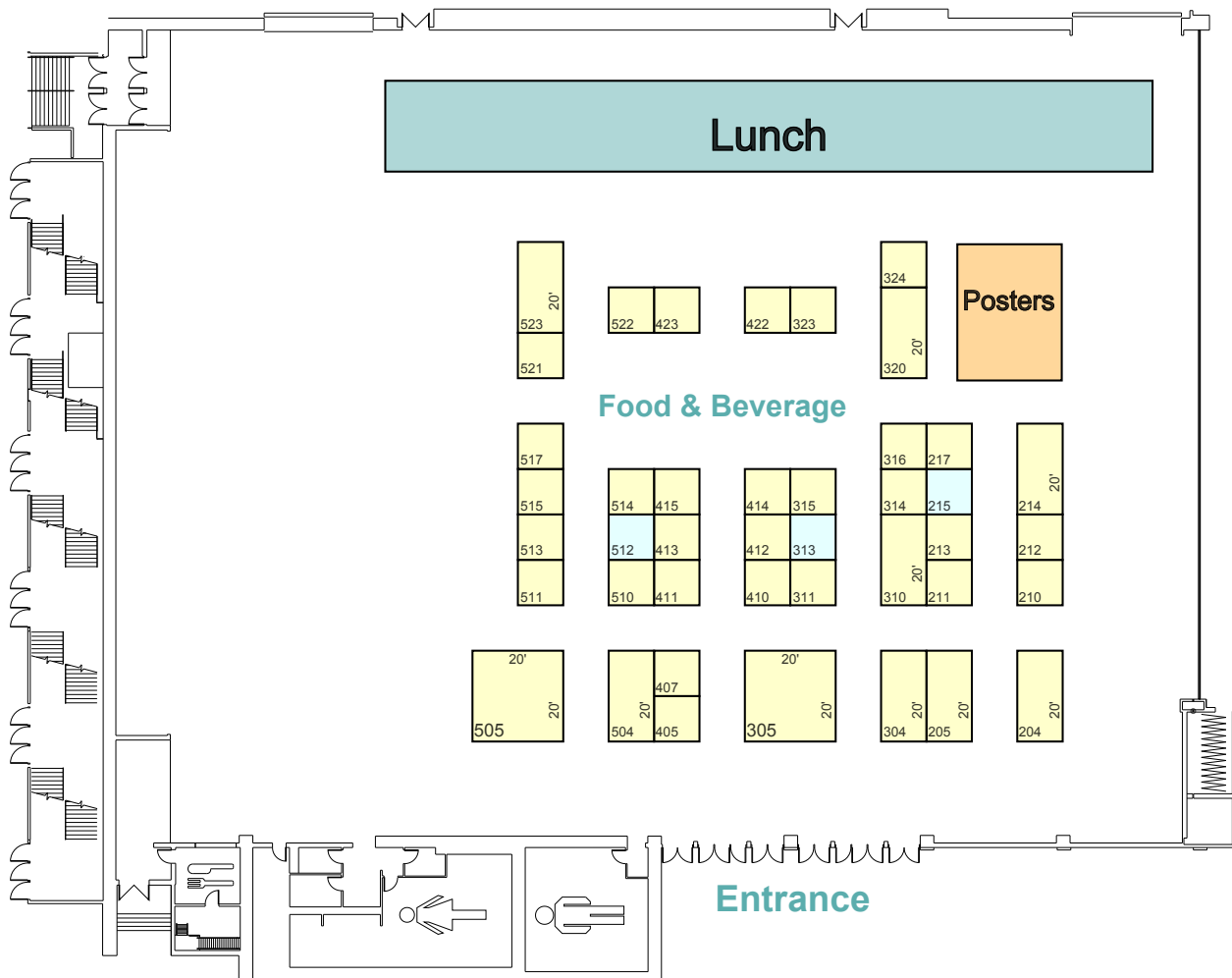


EXHIBIT HALL HOURS

TUESDAY, SEPTEMBER 20

9:00 am – 6:30 pm

WEDNESDAY, SEPTEMBER 21

9:00 am – 3:00 pm

EXHIBITOR DESCRIPTIONS

908 DEVICES

405

908 Devices is democratizing laboratory mass spectrometry with simple handheld and desktop devices. These devices are used at the point-of-need to interrogate unknown and invisible materials and provide quick, actionable answers to address some of the most critical problems in life sciences research, bioprocessing, pharma / biopharma, forensics and adjacent markets.

ACTINBLACK US, LLC

413

ACTinBlack (ACT) is a leading developer and manufacturer specializing in Advanced. Night Vision Optics. In addition to producing high-quality Night Vision Equipment, ACT is a recognized researcher in the field of Night Vision Technologies.

ADS, INC.

423

ADS, Inc. provides equipment, procurement, logistics, and supply chain solutions. We offer access to the largest product and service selection, the broadest array of procurement and contract options, and world-class expertise and support to assist you—every step of the way.

AERO PRECISION

513

Aero Precision is a leading manufacturer in the firearms industry. With roots in Aerospace, our quality and attention to detail are unmatched. When building something that flies, there is no margin for error. Aero always delivers extremely high-quality, American-manufactured rifles and components that your soldiers can count on.

AIMLOCK

205

Specializing in the development of organic autonomous precision strike weapon systems, AimLock enhances speed, accuracy, and reduced cognitive load for deployment of lethal fires from unmanned systems. AimLock's CORE engine offers decision accelerating autonomy in target detection, classification, identification, sensor fusion, and target prioritization, and shortened sensor-to-shooter times.

AIMPOINT INC.

422

Aimpoint red dot sights are trusted by hunters, sport shooters, military, and law enforcement officers around the world. Over 2 million sights have been supplied to the United States military since 1997. Today, Aimpoint is recognized globally as the most rugged, reliable, and efficient electronic sighting system in the world. When your life depends on your equipment, don't settle for anything less.

ALTAEROS

315

Altaeros' autonomous ST-Flex aerostats outperform tethered drones and traditional aerostats without requiring a ground crew for day-to-day operations. Our tactical aerostats are designed to lift heavy payloads (ISR, Radar, Communications & more) for long durations while providing significant OPEX savings.

APPLIED RESEARCH ASSOCIATES (ARA)

310

ARA is an international research and engineering company globally recognized for applying technically-excellent, in-depth and diversified research, engineering, and technical support services to provide answers to complex and challenging problems in the physical sciences. We have a broad range of technical expertise in defense technologies, civil engineering, computer software and simulation, systems analysis, environmental technologies, and blast testing and measurement.

BARRETT

414

Barrett Firearms Manufacturing, Inc. (Barrett) is the world leader in large-caliber and long-range rifle design and manufacturing. Our products are used by civilian sport shooters, law enforcement agencies, the United States military, and over 70 State Department approved countries. The Barrett Quality Management System has received the prestigious ISO 9001:2015 certification for the design and manufacture of firearms, ammunition, and accessories, and to provide training for those systems.

BREN-TRONICS, INC. 211

Supporting the Warfighter and EOD teams for 48+ years, all made in the US. Lithium-Ion batteries for every major military robot platform, small to large ground robots, air and sea. Chargers that get power from solar, vehicles, and other batteries in any climate between -40C / 80C. High power 24V Li-Ion batteries to start/power military vehicles (6T) + high energy power for mobile/fixed silent watch applications (>3 kWh). Winner: Conformal Wearable Battery (CWB) that also uses our ABC charger.

CEIA USA 411

CEIA Ground Search Metal Detectors provide overall superior performance in the areas of detection distance, soil compensation capability, and immunity to external interference. CEIA USA provides nationwide sales, service, and customer support to customers in North America. Dynamic solutions are the foundation of CEIA USA's commitment to customer satisfaction. For more information about CEIA USA, visit www.ceia-usa.com

DEFENSE SYSTEMS INFORMATION ANALYSIS CENTER (DSIAC) 323

The Defense Systems Information Analysis Center (DSIAC) is a component of the U.S. Department of Defense's (DoD's) Information Analysis Center. As an information and knowledge resource for DoD, DSIAC leverages expertise and knowledge from other Government agencies, research laboratories, industry, and academia to help solve the toughest scientific and technical problems of the Defense Systems community.

DTC 311

DTC Communications is the world leader in mission critical communications at the tactical edge. DTC's Software Defined Mesh Radios provide the Warfighter, the Special Forces Operator, and Uncrewed Systems with the greatest performance and reliability. Recently, DTC's IVAS Radio surpassed Industry standards culminating in an \$11.2m award. Spectronic, a DTC Company, is well known in the SOFIC community for world-class Covert Surveillance solutions. We look forward to seeing you at Booth 306.

ENVIRONICS USA 212

Environics has over 30 years of experience in improving CBRN safety around the world with its in-house technologies, and portable and fixed monitoring solutions. Different organizations in over 50 countries, from civil defense and homeland security to the military, have already selected Environics as their partner in CBRN threat detection.

EXPLOTRAIN LLC 324

Explotrain provides patented training and simulation technologies for battlefield effects, C-IED, EOD, live fire, field maneuvers, MOUT, indirect fire, drone-based attacks, and role player augmentation. Technologies include a new UXO and chemical weapon simulation system, MILES compatible propane/OXY and pneumatic powered blast simulator for OPFOR and battlefield FX, long range remote control via dedicated transceiver or tablet-based, and wireless monitoring of high-fidelity EOD/IED training.

NOBLE SUPPLY & LOGISTICS 204

Noble Supply & Logistics is a global supply chain, logistics, mission support, and technology solutions provider for the U.S. military, federal, state, and local governments. The company distributes 13,000 brands of Aerospace, C5ISR, CBRNe, Expeditionary, MRO, and Tactical equipment. Noble streamlines procurement, reducing the cost of readiness while responding to today's challenges rapidly.

FJORD DEFENCE 210

Fjord Defence specializes in a system approach around weapon mounts and customized integration within ground, vehicle and boat applications. We develop weapon accessories with decades of experience, military background, and a user focused organization. We always bring the elements of user friendliness, high precision, low weight, and modularity into our products to deliver something more than «just another piece of equipment». We want to be a recognized as added value to a weapon system.

GENERAL DYNAMICS - OTS 505

General Dynamics Ordnance and Tactical Systems is a global systems developer and manufacturer of munitions, weapons and tactical systems across the entire air, land, and sea battle spectrum. It is the purpose of GD-OTS to empower the United States Armed Forces and its Allies through readiness and innovation to protect what is most important, the warfighter. We are dedicated to our people, our products and our processes to ensure that every day we are Delivering the Best to the Best™

GHOST ROBOTICS 305

Ghost Robotics™ is revolutionizing legged robotics and the market for autonomous unmanned ground vehicles (Q-UGVs) used in unstructured terrain and harsh environments. Our Q-UGVs are rugged and unstoppable. Beyond all terrain operation, a core design principle for our legged robots is size-scalability, and reduced mechanical complexity with total software (SDK) control when compared to other legged and traditional wheeled and tracked UGVs on the market.

HDT GLOBAL 214

A provider of highly-engineered mobile military and emergency response solutions, HDT Global is widely recognized for its industry-leading production of state-of-the-art, fully integrated deployable solutions. With advanced systems currently being used by the U.S. and allied military units stationed worldwide, HDT's products include shelter systems, water filtration, environmental control systems, generators, heaters, air filtration devices, and robotics.

HUXWRX SAFETY CO. 415

HUXWRX Safety Co. is the result of years of research, development, and commitment towards the advancement of suppressor systems. The proprietary technology we've designed mitigates sound and flash signature while reducing exposure to toxic fumes without sacrificing weapon functionality. The simplicity and effectiveness of these systems is why armed forces and law enforcement agencies worldwide recognize the benefits of our technology and are adopting HUXWRX as their suppressor standard.

KGM TECHNOLOGIES 304

KGM Technologies is the largest designer and manufacturer of weapon suppressors in the country. We are protecting the hearing of shooters everywhere and significantly enhancing the capability of our war-fighters. Our patented technologies and advanced manufacturing methods have allowed KGM to set the new standard of suppression. Additional information can be found at www.kgm-tech.com

L3HARRIS 521

The large robot supplier for the UK Ministry of Defence and the U.S. Air Force, L3Harris' highly intuitive and ruggedized robotic systems are deployed worldwide to tackle challenging missions so humans don't have to. Offering best-in-class manipulation, unparalleled precision and human-like dexterity, the T7 and T4 push the envelope of robotic capability. By sharing an intuitive haptic controller, our robots streamline operation, reduce training time, and minimize through-life cost.

LMT DEFENSE 517

Est. in 1980, Lewis Machine & Tool Company (LMT®) manufactures M4 type carbines, 7.62 x 51 rifles, and M203 40mm launchers. LMT is 100% US made and an ISO 9001:2015 registered US Govt. GSA contractor. Models include the MWS classified by the UK MOD as the L129A1 DMR and the 5.56 x 45 monolithic rifle with ambidextrous features, classified as the MARS-L, Modular Ambidextrous Rifle System, Light. Our products are currently in service with the US Govt., SOCOM, and 40 countries around the world.

LONG CAPTURE 316

Long Capture promotes the advancement of commercial companies and their technology through government funding programs such as the Small Business Innovative Research (SBIR), Small Business Technology Transfer (STTR), and other strategic opportunities. By leveraging its network of government officials, industry partners, and universities, Long Capture drives growth for clients in the DoD space.

MISTRAL INC 510

Mistral Inc. serves as a "bridge" between the User requirements and innovative, relevant and ready solutions for the challenges faced while out in the field. Continuous analysis of capability gaps and existing technologies enables Mistral to stay ahead of the problems faced by Users today, tomorrow and into the future.

NATIONAL ARMAMENTS CONSORTIUM 523

The National Armaments Consortium (NAC) serves as the industry partner for the Aviation and Missile Technology Consortium (AMTC), the Department of Defense Ordnance Technology Consortium's (DOTC), and the Naval Energetic Systems and Technologies Consortium (NEST). Our robust, transparent, and unique collaboration approach, once considered a novel and unrealistic concept, has evolved into a well-established process through which our DoD stakeholders acquire the innovative Armament technologies needed to maintain U.S. technological superiority.

NATIONAL DEFENSE INDUSTRIAL ASSOCIATION (NDIA) 515

NDIA engages thoughtful and innovative leaders to promote the best policies, practices, products and technology for warfighters and others who ensure the safety and security of our nation. NDIA offers 25 chapters, 27 divisions for corporate involvement, award winning publications, and numerous conferences and trade shows annually. Corporate and individual memberships are available. U.S. government and military are welcome to join free of charge.

NOVO DR INC. 213

NOVO DR Inc. offers the highest image quality in the portable digital radiography industry. The ruggedness and reliability of our systems combined with amazing X-Ray Images make them the best in the market. Our intuitive and easy to use products have been designed and engineered by our incredibly professional and highly experienced team! For more information please visit website: www.novo-dr.com

OTIS TECHNOLOGY 314

Otis Technology is known for manufacturing the most advanced firearms maintenance systems. The superior Breech-to-Muzzle® design combined with unmatched quality has positioned Otis as the gun care system of choice with the US Military, Hunters, Shooters and Law Enforcement professionals worldwide. Made in the USA, Otis Technology is AMERICA'S GUN CARE.

QINETIQ, INC. 410

QinetiQ, Inc. provides cutting-edge technology and revolutionary products to the defense, security and military markets. Our product offerings include tactical land vehicle and aircraft protection, sensors to protect soldiers, unmanned robots in a variety of sizes and with varying capabilities and power and control systems. Customers rely on our products to enhance security, aid in personal safety, streamline operations, increase situational awareness and improve efficiencies.

**RADICAL FIREARMS/
RADICAL DEFENSE** 320

Radical Defense is dedicated to delivering cutting-edge capabilities into the hands of soldiers and Law Enforcement. They provide innovative solutions to battle major issues with modern weapons. The most common issues that we have tackled head on are: Heat, thermal signatures, end user serviceability, longevity and reliability. Radical Defense is a true manufacturer with modern CNC and Additive manufacturing. They are capable of true RND, engineering, manufacturing and full production.

SMALL ARMS DEFENSE JOURNAL 514

Distributed at defense trade shows worldwide, Small Arms Defense Journal is a bimonthly publication focused on small arms, accessories, soldier gear, new products, industry news, and defense trade show reviews. Small Arms Review is a 10 issue publication. Our aim is to provide a forum for all aspects of Class 3 interests and the military small arms industry. Semper Fi highlights the charitable works and fellowship of the Marine Corps League and covers league and chapter events across the U.S.A.

SMARTRAYVISION 522

SmartRayVision Portable EOD X-Ray is designed, developed and manufactured by SharpLogixx LLC. Made in the USA in Green Bay Wisconsin, the SmartRayVision system is the #1 selling EOD kit in the country. SharpLogixx LLC is a leading technology company focused on advanced research and development of X-Ray equipment and specialized software.

SUREFIRE, LLC 511

Located in Fountain Valley, California, SureFire LLC is the leading manufacturer of high-performance flashlights, weapon-mounted lights and other tactical equipment for those who go in harm's way, or anyone who demands the ultimate in quality, innovation and performance. SureFire illumination tools are used by more SWAT teams and elite special operations groups than any other brand. SureFire is an ISO 9001:2015-certified company.

TELEDYNE FLIR 504

Teledyne FLIR's UIS Division comprises the largest global provider of tactical unmanned ground vehicles as well as leading nano and Class-1 unmanned aircraft systems. We design and build the most trusted, rugged, easiest-to-operate drones and robots – from 1.2 ounces to 500 pounds – used to safeguard life and property around the world. Whatever the mission, our advanced platforms are out there every day supporting US and international military, law enforcement, and industrial users.

THE UNIVERSITY OF KANSAS 412

The University of Kansas Aerospace Engineering Department supports advanced weapon system RDT&E via its Aircraft Design Lab. Its investigators claim a number of DoD "firsts," including guided and hypersonic aerial gunnery, Micro Aerial Vehicles (MAVs), and Hovering Missiles. KUAE works with Government labs and corporations to conceive and prove unique weapon systems and licenses critical patents and trade secrets. The Lab has worked for years with all branches of the DoD, DARPA and NASA.

TRIJICON, INC 217

Backed by a limited-lifetime warranty, Trijicon's aiming systems are proven on the range and in the field. As a result, Trijicon has earned the trust of those who are most in need of aiming accuracy and dependability. Our customers include the United States Navy, Marine Corps, Army, Air Force, and United States Special Operations Forces; United States Government, as well as state and local Law Enforcement.

UDC USA 407

UDC produces small & medium caliber ammunition of several types, support munitions and demolition products. UDC is headquartered in Tampa, Florida with offices & facilities in the Kansas City, Missouri, metro area. For 2022 we are introducing a new line of Armor Piercing rounds. UDC specializes in munitions manufacturing, prototyping and testing, full rate production, modernization of legacy weapon systems, and training and equipping of foreign military or indigenous defense forces.



LEADING THE WAY IN ENGAGEMENT, NETWORKING, AND NATIONAL DEFENSE

PLAN AHEAD FOR SUCCESS | 2022 – 23 FEATURED MEETINGS, CONFERENCES, AND EVENTS



FUTURE FORCE CAPABILITIES CONFERENCE & EXHIBITION

September 19 – 22, 2022 | Austin, TX

Autonomous Systems | GARM | Live Fire | Multi-Domain | Small Arms | EOD



25TH ANNUAL SYSTEMS & MISSION ENGINEERING CONFERENCE

November 1 – 3, 2022 | Orlando, FL

Program Management | Security Models | Test & Evaluation | Manufacturing



UNDERSEA WARFARE FALL CONFERENCE*

September 26 – 28, 2022 | Groton, CT

Aviation USW | C4I | Mine Warfare | Undersea Sensors & Vehicles | Warfighter Performance



AIRCRAFT SURVIVABILITY SYMPOSIUM

November 1 – 3, 2022 | Monterey, CA

Combat Survivability | Concealment and Deception | Countermeasures | Urban Warfare | Vulnerability Reduction



WOMEN IN DEFENSE NATIONAL CONFERENCE

September 27, 2022 | Arlington, VA

Pivots and Prospects: Success in the New Normal



33RD ANNUAL NDIA SO/LIC SYMPOSIUM

November 17 – 18, 2022 | Washington, DC

Special Operations Forces | Strategic Competition



PRECISION STRIKE TECHNOLOGY SYMPOSIUM (PSTS-22)* SECRET – NOFORN

October 18 – 20, 2022 | Laurel, MD

Precision Capability | Air & Missile Defense | Technology Advancements



I/ITSEC 2022

November 28 – December 2, 2022 |

Orlando, FL

Simulation | Training | Virtual Reality



2022 INSENSITIVE MUNITIONS & ENERGETIC MATERIALS (IMEM) TECHNOLOGY SYMPOSIUM

October 18 – 20, 2022 | Indianapolis, IN

Energetic Materials | Inensitive Munitions | Munitions Technology



2023 TACTICAL WHEELED VEHICLES CONFERENCE

February 27 – March 1, 2023 |

Columbus, OH

Autonomous Vehicles | Electric Drive | Modernization & Sustainment | Acquisition



2022 JOINT AIA/NDIA INDUSTRIAL SECURITY COMMITTEE CONFERENCE

OCTOBER 24 – 26 | Tucson, AZ

Security Clearance Reforms | Insider Threat Guidance | Cybersecurity Policy



2023 PACIFIC OPERATIONAL SCIENCE & TECHNOLOGY (POST) CONFERENCE

March 6 – 9**, 2023 | Honolulu, HI

Regional Security | Science & Engineering Technology | Technology Engagement

*All Classified | **Partially Classified

VISIT [NDIA.ORG](https://www.ndia.org) FOR MORE INFORMATION ON ALL OF OUR MEETINGS, CONFERENCES, AND EVENTS