JOINT ARMAMENTS
FORUM & EXHIBITION

“Balancing Armament Innovation and Readiness Improvements within Budget Constraints”

MAY 12-15, 2014
WWW.NDIA.ORG/MEETINGS/4610

PHOENIX CONVENTION CENTER • PHOENIX, AZ

EVENT #4610
JOINT ARMAMENTS FORUM, EXHIBITION & TECHNOLOGY DEMONSTRATION
MAY 12-15, 2014 › PHOENIX CONVENTION CENTER › PHOENIX, AZ

FORUM ANNOUNCEMENT
The purpose of the Joint Armaments Forum, Exhibition & Technology Demonstration is to bring together the government and industry communities to participate in presentations and exhibits representing activities supporting the evolving requirements, technologies, systems, and ongoing production. Tutorial sessions addressing key topics of interest in requirements, ITAR, program management, etc., to the Armaments community.

TUTORIALS
The Joint Armaments Forum Tutorial Sessions are focused to topics related to DoD requirements, program management, ITAR, or specific technologies that impact the current and future Armament community. The sessions have been chosen to address subjects relevant to the challenges of requirements, program management, and systems/technology today. Lead by subject matter experts, the tutorials communicate topic information and status and enables a discussion within the group to consider the implications for government and industry. Participation in these sessions is an opportunity to learn, understand, challenge, and discuss key areas of interest. The results provide benefits to strengthen the government and industry understanding of a topic impacting the evolving industrial base and capability objectives. Tutorial dialogue among attendees is the focus to share views and discuss paths forward.

SMALL ARMS PROGRAM
“Small Arms System Advances in Times of Diminishing Resources”
Facing terrorist forces from MOUT to the open battlefield, American forces – both military and law enforcement alike – require the best equipment available. In a time of budget constraints, only through the efforts of the government and industry working together on a wide range of technology focus areas, will the tools necessary to support our soldiers, sailors, airmen and marines be realized.

These focus areas range from incremental enhancements to fielded legacy small arms systems to enabling technologies, such as fire control improvements, use of robotics and digitization of small arms systems on the battlefield, and others. The Small Arms Program seeks to bring together government and industry, manufacturers and users to support this objective for the military and law enforcement communities.

GUNS, AMMUNITION, ROCKETS & MISSILES PROGRAM
“Expanding the Warfighter’s Capability Through Technology Investment”
The Guns, Ammunition, Rockets & Missiles Program focus areas include (but are not limited to) medium and large-caliber direct and indirect fire technologies, armament subsystems for air, land and sea applications, energetics, precision munitions, the integration of gun systems, rockets and missiles onto platforms and the modeling and simulation of guns, ammunition, rockets and missile components, subsystems, assemblies and systems.

UNCONVENTIONAL EMERGING TECHNOLOGY ARMAMENT SYSTEMS PROGRAM
“A 360-Degree View of Unconventional and Emerging Armaments: New Capability for Affordable Response”
The Unconventional Emerging Technology Armament Systems Program focus areas include (but are not limited to) electromagnetics, lasers, high-power microwave, non-lethal counter-personnel and counter-material, hypersonic, sensor defeat (including spectrum denial), and other emerging armament technologies. This program addresses matters of enabling technologies, integration, analysis and simulation, training, mission application, operational considerations and safety across the technology focus areas. This program’s scope defeat technologies across the full spectrum from non-lethal to full lethality and scalable effects against personnel, structures and equipment.
**Track Themes**

The following are the objectives and outcomes expected from attending the breakout sessions.

**Directed Energy: HPM, Lasers, EMP, Acoustics**
- **Session Objective:** Education of DE for force application and force protection
- **Session Outcome:** Greater understanding of novel, emerging technologies for minimizing collateral effects and projecting force

**Modeling & Simulation**
- **Session Objective:** Education of state-of-the-art methods and techniques for modeling armament systems
- **Session Outcome:** Improved understanding of simulation techniques and capabilities for engineers and program managers

**EM Rail Gun and Projectiles**
- **Session Objective:** Identification of capability gaps for affordable armaments
- **Session Outcome:** Guidance for government and industry investments

**Armament Systems**
- **Session Objective:** Identification of system solutions to warfighter needs
- **Session Outcome:** Improved understanding of armament system capabilities for engineers and program managers

**JNLWD Advanced Planning Briefing to Industry**
- **Session Objective:** JNLWD communication to industrial partners and DoD labs
- **Session Outcome:** Seeding government and industry participation

**Non-Lethal Technology**
- **Session Objective:** Investments in affordable non-lethal response
- **Session Outcome:** Compendium of current developments for combat NL scalable response

**Small Arms Weapons**
- **Session Objective:** Communicate cost reducing technologies to coincide with diminishing resources
- **Session Outcome:** Affordable cost reducing technology outlined

**40MM Grenade Cartridges**
- **Session Objective:** Define improvement in Small Arms Ammunition effectiveness
- **Session Outcome:** Enabling technology outlined

**Emerging Technology - Sensors, Power, Payloads, Platforms and Autonomy**
- **Session Objective:** Providing the building blocks for future affordable armaments capabilities
- **Session Outcome:** Gain understanding of opportunities for reducing armaments system costs through smart technology applications

**Indirect Fire**
- **Session Objective:** Identification of state-of-the-art long range fire support capabilities
- **Session Outcome:** Improved understanding of state-of-the-art long-range fire support capabilities for engineers and program managers

**Emerging Materials Applications for Armaments**
- **Session Objective:** Explanation of how materials, as building blocks for low-cost armaments, reduce system lifecycle cost
- **Session Outcome:** Updated materials science education from current developments

**Warheads & Energetics**
- **Session Objective:** Identification of state-of-the-art warhead and energetics component technologies
- **Session Outcome:** Improved understanding of state-of-the-art warheads and energetics capabilities for engineers and program managers

**Fire Control**
- **Session Objective:** Define fire control technology to improve first round hit capability, reducing the number of rounds required to mitigate target
- **Session Outcome:** Enabling technology roadmaps outlined

**Direct Fire Systems**
- **Session Objective:** Identification of state-of-the-art conventional direct fire solutions for medium and large caliber applications
- **Session Outcome:** Improved understanding of state-of-the-art direct fire capabilities and performance for engineers and program managers

**Small Arms Ammunition**
- **Session Objective:** Define improvement in small arms ammunition effectiveness
- **Session Outcome:** Enabling technology outlined

**Rockets & Missiles**
- **Session Objective:** Identification of state-of-the-art rocket and missile solutions for fire support
- **Session Outcome:** Improved understanding of state-of-the-art rocket and missile capabilities and performance for engineers and program managers
MONDAY, MAY 12, 2014

8:00 AM - 3:00 PM  EXHIBITOR MOVE-IN - WEST HALL 1
8:00 AM - 7:00 PM  REGISTRATION
2:15 PM - 3:45 PM  SESSION I TUTORIALS
                   BREAKOUT A: Cryogenic Derived Vacuum Thermal Isolation for Firearm & Electronics Integration
                   ROOM 126A
                   ▶ Mr. Howard Kent, Armor Development Group, LLC
                   BREAKOUT B: Weapon System Dispersion Estimation via Sensitivity Factors and Error Budget Build-up
                   ROOM 126B
                   ▶ Mr. Jeff Siewert, Arrow Tech Associates, Inc.
                   BREAKOUT C: ARDEC's Technology Development Process: “Knowing What to Do and When to Do it”
                   ROOM 126C
                   ▶ Mr. Mark Serben, U.S. Army ARDEC
3:45 PM - 4:00 PM  NETWORKING BREAK
4:00 PM - 5:30 PM  SESSION II TUTORIALS
                   BREAKOUT A: Human Effects Modeling
                   ROOM 126A
                   ▶ Mr. James Simonds, The Human Effects Center of Excellence at Brooks Air Force Base
                   BREAKOUT B: 2014 ITAR Update and Status Review of ITAR Basics
                   ROOM 126B
                   ▶ Mr. Jason Wong, Firearms Law Group
                   BREAKOUT C: Small Caliber International Ballistics and Failure Analysis
                   ROOM 126C
                   ▶ Mr. Jeff Conover, Defense Contract Management Agency
5:30 PM - 7:00 PM  NETWORKING RECEPTION - WEST HALL 1
6:00 PM

***MANDATORY DEMONSTRATION/RANGE SAFETY MEETING (DEMONSTRATORS ONLY). MEET AT 6:00PM AT THE ENTRANCE TO EXHIBIT HALL
TUESDAY, MAY 13, 2014

7:00 AM - 6:30 PM  REGISTRATION
7:00 AM - 8:00 AM  NETWORKING CONTINENTAL BREAKFAST
8:00 AM - 5:00 PM  GENERAL SESSION - ROOM 120D
8:00 AM - 8:15 AM  Welcome Remarks
  ▶ Mr. Dave Broden, President, Broden Resource Solutions, LLC; NDIA Armaments Division Chairman
8:15 AM - 8:35 AM  Keynote Address
  ▶ Honorable Janice Brewer, Governor, State of Arizona
8:35 AM - 9:15 AM  Keynote Address
  ▶ BG David Bassett, USA, Program Executive Officer, Ground Combat Systems
9:15 AM - 9:55 AM  Keynote Address
  ▶ BG John McGuiness, USA, Program Executive Officer, PEO Ammunition
9:55 AM - 10:35 AM Keynote Address
  ▶ RDML Bryant Fuller, USN, Deputy Commander, Ship Design, Integration and Naval Engineering, Naval Sea Systems Command
10:35 AM - 11:00 AM NETWORKING BREAK
11:00 AM - 11:30 AM Budget and DoD Policy Review
  ▶ Lt Col Robert Levinson, USAF (Ret), Senior Defense Analyst, Bloomberg Government
11:30 AM - 12:00 PM Armament Cyber Considerations
  ▶ Mr. Erik Graham, Security Architect, General Dynamics
  ▶ Mr. Brett Scott, CTO, LiveSquare Security
12:00 PM - 12:30 PM Defense Consortia: A Proven Way to Rapidly Develop and Deploy New Armament Capability in Today’s Environment
  ▶ Mr. Gary Schneider, Chair, National Armament Consortium Executive Committee
12:30 PM - 1:30 PM NETWORKING LUNCHEON - ROOM 120BC
1:30 PM - 2:15 PM ARDEC Technology Vision
  ▶ Ms. Barbara Machak, Executive Director, ESIC, ARDEC
2:15 PM - 3:00 PM Keynote Address
  ▶ COL Michael Coolican, USMC, Director, Joint Non-Lethal Weapons Directorate, U.S. Marine Corps
3:00 PM - 3:15 PM NETWORKING BREAK
3:15 PM - 3:45 PM PM MAS
  ▶ COL Paul Hill, USA, U.S. Army Project Manager, Maneuver Ammunition Systems
3:45 PM - 4:15 PM Operation Chromium
  ▶ MSG Jarion Halbisengibbs, USA, 10th Special Forces Group A, Fort Carson Colorado
4:15 PM - 4:45 PM Metal Fever, Beyond Lead Poisoning
  ▶ Mr. Jim Schatz
4:45 PM - 5:00 PM Award Presentation
5:00 PM - 6:30 PM NETWORKING RECEPTION - WEST HALL 1
<table>
<thead>
<tr>
<th>Time</th>
<th>Small Arms Systems</th>
<th>Unconventional Emerging Armaments</th>
<th>Guns, Ammunition, Rockets &amp; Missiles</th>
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<tbody>
<tr>
<td>8:00</td>
<td><strong>PM Soldier Weapons - Room 126A</strong>&lt;br&gt;Session Chair: COL Scott Armstrong, USA, PM Soldier Weapons</td>
<td><strong>Non-Lethal and Enabling Technologies - Room 126C</strong>&lt;br&gt;Session Chairs: Mr. George Orrison, Metal Storm USA&lt;br&gt;Mr. Brian Sullivan, Rheinmetall&lt;br&gt;Mr. Bryan Bockman, Rocky Mountain Scientific Laboratory&lt;br&gt;Dr. Chester Wilson, American Strategic Technologies</td>
<td><strong>Room 127A</strong>&lt;br&gt;PM-CAS Activities&lt;br&gt;COL Willie Coleman, USA, Combat Ammunition Systems</td>
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<td>PM Soldier Weapons Panel&lt;br&gt;COL Scott Armstrong, USA, PM Soldier Weapons&lt;br&gt;LTC Shawn Lucas, USA, PM Soldier Weapons&lt;br&gt;LTC Paul Alessio, USA, PM Soldier Weapons&lt;br&gt;SFC Jason Dorwart, USA, PM Soldier Weapons</td>
<td>Non-Lethal Directed Energy Gaps and Investments&lt;br&gt;Mr. David Law, JNLWD</td>
<td><em>Room 127A</em>&lt;br&gt;PM-CAS Activities&lt;br&gt;COL Willie Coleman, USA, Combat Ammunition Systems</td>
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<td>8:30</td>
<td><strong>JSSAP Session - Room 126A</strong>&lt;br&gt;Session Chair: Mr. Joel Goldman, U.S. Army ARDEC</td>
<td>16573 — ARDEC Non-Lethal Overview&lt;br&gt;Mr. Fareed Choudhury, U.S. Army ARDEC</td>
<td><em>Room 127A</em>&lt;br&gt;PM-CAS Activities&lt;br&gt;COL Willie Coleman, USA, Combat Ammunition Systems</td>
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<td>Joint Service Small Arms Synchronization (JSSAST) Activities&lt;br&gt;Mr. Joel Goldman, U.S. Army ARDEC&lt;br&gt;Mr. John Edwards, U.S. Army ARDEC&lt;br&gt;Dr. Barton Halpern, U.S. Army ARDEC</td>
<td>16573 — ARDEC Non-Lethal Overview&lt;br&gt;Mr. Fareed Choudhury, U.S. Army ARDEC</td>
<td>PM-CAS Activities&lt;br&gt;COL Richard Hornstein, USA, Close Combat Systems</td>
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<td>9:30</td>
<td><strong>Human Effects Modeling, JNLWD</strong>&lt;br&gt;Mr. James Simonds, The Human Effects Center of Excellence at Brooks Air Force Base</td>
<td><strong>Medium Caliber and Tank Ammunition Overview</strong>&lt;br&gt;COL Paul Hill, USA, U.S. Army Project Manager, Maneuver Ammunition Systems</td>
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<td>10:00</td>
<td><strong>15485 — Augmented Reality: Improving Soldier-Weapon System Performance with Modest Improvements in Dual-Use Technology</strong>&lt;br&gt;Mr. Bryan Bockmon, Rocky Mountain Scientific Laboratory</td>
<td><strong>Medium Caliber and Tank Ammunition Overview</strong>&lt;br&gt;COL Paul Hill, USA, U.S. Army Project Manager, Maneuver Ammunition Systems</td>
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<td><strong>Break</strong></td>
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<td>11:00</td>
<td><strong>Small Arms Industry Panel - Room 126A</strong>&lt;br&gt;Session Chair: Mr. Brian Berger, General Dynamics, OTS-Canada</td>
<td>15538 — NATO Nonlethal Capabilities&lt;br&gt;Mr. John Edwards, U.S. Army ARDEC</td>
<td><strong>Super Guns: Most Formidable Guns in the Modern World</strong>&lt;br&gt;Mr. David Smith, U.S. Army ARDEC</td>
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<td>Small Arms Industry Panel&lt;br&gt;Mr. Tom Lopez, FNH USA, LLC&lt;br&gt;Mr. Matthew Hemenez, Sure Fire, LLC&lt;br&gt;Mr. George Kontis, Knight’s Armament Company&lt;br&gt;Mr. Gabe Bailey, Beretta USA Corp. (Invited)</td>
<td>15538 — NATO Nonlethal Capabilities&lt;br&gt;Mr. John Edwards, U.S. Army ARDEC</td>
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<td>16545 — New Solutions and Capabilities Enabled by Supercavitating Ammunition&lt;br&gt;Mr. Richard Morgan, DSG Technology</td>
<td>15538 — NATO Nonlethal Capabilities&lt;br&gt;Mr. John Edwards, U.S. Army ARDEC</td>
<td><strong>Super Guns: Most Formidable Guns in the Modern World</strong>&lt;br&gt;Mr. David Smith, U.S. Army ARDEC</td>
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<td>12:00</td>
<td><strong>Lunch - Room 120BC</strong></td>
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<td>Time</td>
<td>Small Arms Systems</td>
<td>Unconventional Emerging Armaments - U.S. Only</td>
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<td>1:00</td>
<td><strong>Small Arms Weapons</strong>&lt;br&gt;Room 126A&lt;br&gt;Session Chair: Mr. Charles Zeller, NSWC, Crane</td>
<td><strong>Laser and High-Power RF Directed Energy - Room 126C</strong>&lt;br&gt;Session Chairs: Mr. Jeff Widder, Battelle&lt;br&gt;Mr. Ryan Hoffman, ONR</td>
<td><strong>Modeling and Simulation</strong>&lt;br&gt;Room 127A&lt;br&gt;Session Chairs: Mr. Jeff Caratelli, Alcoa Defense&lt;br&gt;Mr. Mark Serben, U.S. Army ARDEC</td>
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<td><strong>Small Arms Ammunition</strong>&lt;br&gt;Room 126B&lt;br&gt;Session Chair: Dr. Dion Serben, NAVSEA</td>
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<td><strong>Ammunition - Room 127B</strong>&lt;br&gt;Session Chairs: Mr. Jeff Siewert, Arrow Tech Associates&lt;br&gt;Mr. Howie Wendt, NSWC Dahlgren</td>
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<td>1:00</td>
<td>16511 — A New Approach to Understanding Small Arms Recoil&lt;br&gt;Mr. George Kontis, Knight’s Armament</td>
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<td>16529 — Design Solutions for the Elimination of Case Mouth Waterproofing in Small-Caliber Ammunition&lt;br&gt;Mr. Jonathan Gill, ATK</td>
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<td>1:20</td>
<td>15470 — Cryogenic Derived Vacuum Thermal Isolation for Firearm &amp; Electronics Integration&lt;br&gt;Mr. Howard Kent, Armor Development Group, LLC</td>
<td>16533 — 7.62mm Cased Telescopied Ammunition&lt;br&gt;Mr. Paul Shipley, AAI Corporation</td>
<td>16549 — Multiaxial Gun Fluid Flow Modeling and Experimentation&lt;br&gt;ARDEC&lt;br&gt;Mr. Anthony Cannone, U.S. Army ARDEC</td>
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<td>16546 — Extended Range Subsonic Penetrator Ammunition&lt;br&gt;Mr. Richard Morgan, DSG Technology</td>
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<td>16549 — ARDEC Computational Based Engineering Capabilities and their Validation Tools&lt;br&gt;Dr. Don Carlucci, U.S. Army ARDEC</td>
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<td>16527 — Mk316-M40A5 Accuracy Interaction Study&lt;br&gt;Mr. Jeff Siewert, Arrow Tech Associates, Inc.</td>
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<td>16549 — ARDEC Computational Based Engineering Capabilities and their Validation Tools&lt;br&gt;Dr. Don Carlucci, U.S. Army ARDEC</td>
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<td>2:00</td>
<td>16531 — The LWMMG .338 - From Invention to Maturation&lt;br&gt;Mr. Matthew Diehl, General Dynamics - OTS</td>
<td>16547 — Improved 12.7 mm (.50 Cal) Multi Purpose (Mk211) Anti-materiel Concept&lt;br&gt;Ms. Andreas Gaarder, Nammo Raufoss AS</td>
<td>15439 — 25x137mm APEX Ammunition for F-35&lt;br&gt;Mr. Vegard Sande, Nammo Raufoss AS</td>
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<td>2:20</td>
<td>15474 — Accelerometer-Based Reliability &amp; Condition-Based Maintenance System For Firearms&lt;br&gt;Mr. Howard Kent, Armor Development Group, LLC</td>
<td>16542 — Small Arms Ammunition Tactical Effectiveness&lt;br&gt;Mr. Fredrik Erninge, Nammo Raufoss AS</td>
<td>16537 — Advanced Lethality and Accuracy System for Medium Caliber (ALAS-MC)&lt;br&gt;Mr. Michael LeFante, U.S. Army ARDEC</td>
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<td>2:20</td>
<td>15474 — Accelerometer-Based Reliability &amp; Condition-Based Maintenance System For Firearms&lt;br&gt;Mr. Howard Kent, Armor Development Group, LLC</td>
<td>16548 — Understanding Risk in Acceptance Testing&lt;br&gt;Mr. Sam Mason, ATK</td>
<td>15432 — MK38 Mod 2 Coaxial Machine Gun Presentation&lt;br&gt;Mr. Jim McConkie, NSWC Dahlgren</td>
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<td>2:40</td>
<td>15495 — Expanding the Armed Forces Capability through Turreted Mortar Systems&lt;br&gt;Mr. Jukka Tainen, Patria Land Systems</td>
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**Break**
## Small Arms Systems

**3:00**

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<tr>
<th>Session</th>
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<tbody>
<tr>
<td>Small Arms Ammunition Room 126B</td>
<td>Continued</td>
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<td>15472 — VENOM - Optical Crosswind Measurement Device / xWINDS - Sniper Training System / Zero Lens - NV Device</td>
<td>Mr. Alex Davies, QinetiQ</td>
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<td>16576 — Developments in .50cal Short Range Training Ammunition</td>
<td>Mr. Luis de Sousa, General Dynamics OTS - Canada</td>
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<td>U.S. Only</td>
<td>Keynote Speaker — ONR Railgun Program and OSD Land-Based Railgun Demonstration Program LCDR Jason Fox, USN, Office of Naval Research</td>
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<tr>
<td>Non-Lethal - Room 126B</td>
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<td>16543 — Assessing Bullet Terminal Effects</td>
<td>Mr. Alex Davies, QinetiQ</td>
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<td>16577 — Development of IR Tracer</td>
<td>Mr. Pierre Lemay, General Dynamics OTS - Canada</td>
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<tr>
<td>Modern Trends &amp; Development in Global Ordnance</td>
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<td>Modern Trends: Snapshots from the LMO World Tour 2013</td>
<td>Mr. Dan Shea, Long Mountain Outfitters, LLC</td>
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**4:00**

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<tr>
<td>16559 — Conceptual Scalable Non-Lethal Ballistic System Built with Existing and Developmental Hardware</td>
<td></td>
<td></td>
<td>Mr. Jeff Widder, Battelle</td>
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## Unconventional Emerging Armaments - U.S. Only

**3:00**

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<th>Chair</th>
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<tbody>
<tr>
<td>Rail and Gun Projectile U.S. Only - Room 126C</td>
<td>Continued</td>
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<td>16561 — Defeating Magnetic Interference on the Battlefield, How Multiple Sensory Inputs are Enabling Lightweight Robust Weapon Pointing for Mortar Fire Control Systems</td>
<td>Mr. Ralph Tillinghast, U.S. Army ARDEC</td>
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<td>16557 — Applying Systems Thinking Principles to Indirect Fire Control Software Development</td>
<td>Mr. Ross Arnold, U.S. Army ARDEC</td>
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<td>16564 — ARDEC Fuze Technology Overview</td>
<td>Mr. Evan Young, U.S. Army ARDEC</td>
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## Guns, Ammunition, Rockets & Missiles

**3:00**

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<tr>
<td>Armament Systems - Room 127A</td>
<td>Continued</td>
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<td>15480 — How DoD Munitions Programs Might Be Affected By Rising Raw Material Costs</td>
<td>Mr. Rosario Lo Cascio, U.S. Army ARDEC</td>
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<td>16544 — Mortar Light-Weighting Technologies</td>
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<td></td>
<td>Mr. David Smith, U.S. Army ARDEC</td>
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**3:40**

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Location</th>
<th>Chair</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missiles and Rockets - Room 127B</td>
<td></td>
<td></td>
<td>15528 — Selecting a Precision Munition: Balancing Cost with Operational Considerations</td>
<td>Mr. Jon Peoble, Raytheon Company</td>
</tr>
</tbody>
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**4:00**

<table>
<thead>
<tr>
<th>Session</th>
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<tbody>
<tr>
<td>16557 — Advanced Capability Extended Range Mortar (ACERM)</td>
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<td>Mr. Luke Steelman, NSWC Dahlgren</td>
<td></td>
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</tbody>
</table>
### SMALL ARM SYSTEMS BREAKOUT SESSIONS

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Chair:</th>
<th>Location</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:20</td>
<td>Mr. Brian Berger, General Dynamics, OTS-Canada</td>
<td>Room 126A</td>
<td>Weapon Auxiliary Equipment - Room 126A</td>
</tr>
<tr>
<td></td>
<td>Mr. Doug Cox, Mixed Signal Integration</td>
<td></td>
<td>15656 — Energy Harvesting for Illuminating Sights</td>
</tr>
<tr>
<td>9:40</td>
<td>Mr. Howard Kent, Armor Development Groups, LLC</td>
<td>Room 126A</td>
<td>15471 — Suppressor Incorporating Natural Sound Production Auditory Camouflage on Firing</td>
</tr>
<tr>
<td></td>
<td>Mr. Christopher Perhala, Battelle</td>
<td></td>
<td>16504 — 40mm Low Velocity Extended Range Air-Burst Munition System - Minimum Investment For Maximum Potential</td>
</tr>
<tr>
<td>10:00</td>
<td>Mr. Jonathan Piazza, General Dynamics</td>
<td>Room 126B</td>
<td>16516 — Next Generation Fire Control System</td>
</tr>
<tr>
<td></td>
<td>Mr. Helge Stadheim, Nammo Raffossa AS</td>
<td></td>
<td>16510 — 40mm Door Breaching Munition Concept Study</td>
</tr>
<tr>
<td>10:20</td>
<td>Mr. Christopher Perhala, Battelle</td>
<td>Room 126B</td>
<td>16556 — Low-cost Air Burst System Expands the Role of the MK19 40mm Grenade Launcher</td>
</tr>
</tbody>
</table>

### TECHNOLOGY DEMONSTRATION

- Session Chairs: Mr. Sal Fanelli, Marine Corps Systems Command and Mr. Jim Schatz
- 11:15 AM - 4:00 PM
- Board Buses
- En Route To Technology Demonstration - Lunch Provided On Bus
- 12:30 PM - 12:45 PM
- Mandatory Range Safety Briefing (All Attendees and Demonstrators Must Attend)
- 12:45 PM - 4:00 PM
- Technology Demonstration @ Cowtown Firing Range, Peoria, AZ
- 4:00 PM
- Depart For Phoenix Convention Center

### CO-LOCATED EVENT:

Co-located with this event is CyberWest: The Southwest Cyber Security Summit, also located at the Phoenix Convention Center, CyberWest is co-hosted by AFEI (an NDIA affiliate), Embry-Riddle Aeronautical University, and the Center for Aviation and Aerospace Leadership. The focus of this event is Building for the Future and features lectures and workshops on key cybersecurity topics. Attendees at both events are welcome to walk the exhibit hall floor and network during luncheons and receptions.
ADDITIONAL AUTHORS

15439 Ms. Eva Friis
15470 Mr. Trevor Shaw
Mr. Aarne Reid
15471 Mr. Mark Walker
Mr. Ashley Tilling
15472 Mr. Greg Hays
15474 Mr. Karl Lewis
Mr. Michael Change
15482 Mr. Tom Flaherty
15492 Ms. Laurel Dillon
Mr. Bill O’Meara
15528 Mr. Jerry Schlabach
Mr. Dan Tulloh
16495 Mr. Kari Reunamäki
16510 Mr. Jason Paugh
16516 Mr. Glenn Rossier
Mr. Theodore Bloomhardt
Mr. Craig Pepper
Mr. Gary Sander
16524 Mr. Rick Wright
16527 Mr. Sal Fanelli
16529 Mr. John Westbrook
16533 Mr. Ben Cole
16537 Mr. Jeff Hart
Mr. Sam Koo
Mr. Gary Milcheck
Mr. Gary Fleming
16540 Dr. Donald Carlucci
Dr. Jennifer Cordes
Mr. James Kalinowski
Mr. Nigel Gray
16543 Mr. Dan Hammond
Mr. Matt Haverty
Dr. Nicholas Lynch
Mr. Matt Westlake
16547 Mr. Kim Dahl
16549 Mr. Daniel Cler
Dr. Laurie Florio
16557 Mr. Spencer Rouen
16559 Mr. Chris Perhala
16561 Mr. Mike Wright
16564 Ms. Karen Amabile
16565 Mr. Thomas Nealis
16570 Mr. Mike Wright
16799 Mr. Michael McQuage

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EXHIBITING COMPANIES

Updated as of 4/30/14

Aimpoint, Inc. 212
Aimpoint is the leading manufacturer of high quality electronic red-dot sights.

AMREL 117
AMERICAN RELIANCE (AMREL) manufactures the ROCKY line of rugged laptops, tablets, and handhelds, which are designed to operate in the harshest environments. Our MIL-STD 810G/461F certified platforms integrate devices for communications, data collection, logistics, and other applications. We customize, design, prototype, and deliver your solution faster than any competitor.

AMTEC Corporation 312
AMTEC Corp, Janesville, Wisconsin - A National Defense Corp Company. A system prime contractor and sole US supplier of 40mm ammunition and fuzing, as well as other mechanical fuzes and firing device systems and subsystems for the US Government and as a subcontractor to other US and allied nation defense contractors.

Arrow Tech 310
Arrow Tech Associates provides analytical support to customers worldwide with capabilities including: aerodynamics, aerostability, trajectory and firing tables, interior ballistics, rocket motor design, dispersion and in-bore balloting, structural analyses, and Guidance and Control Prototyping.

Barrett 107
Headquartered in Murfreesboro, Tennessee, Barrett is the world leader in large-caliber rifle design and manufacturing. Our products are used by civilian sport shooters, law enforcement agencies, the United States military and more than 73 State Department approved countries across the world.

BCN Technical Services, Inc. 304
Bliss, Clearing, Niagara Company (BCN Technical Services) has been a world leader in small caliber manufacturing equipment since the late 1800’s. Bliss provides service, parts, complete rebuilds, and brand new, state of the art solutions for small caliber ammunition manufacturing. We are able to provide an entire line for manufacturing, or any simple solution. With on-site engineering and project management, we are ready to be your manufacturing partner!

Chemring Ordnance 109
Chemring Ordnance is a center of excellence for the design, development and production of ordnance, pyrotechnic products, and other munition components for military, homeland security, and first responders. We manufacture all types of 40mm low and high velocity ammunition; pyrotechnic marking, signalling, and tactical illumination devices; battlefield effects simulators; hand grenade fuzes and other ammunition components such as large caliber electronic primers.

Colt Defense, LLC 215
Colt rifles and carbines are the only 5.56mm weapon systems in the world that have been truly battle-tested under every condition that may be encountered on the diverse battlefields of the 21st century. The example established by the U.S. Armed Forces and the armed forces of more than 90 other nations around the world confirms that Colt offers weapons, which significantly increase the field readiness as well as the operational, tactical and strategic capabilities of a country’s Armed Forces.

DSG Technology 319
The company has developed supercavitating products in 5.56mm, 7.62mm and 12.7mm and has supplied to various special ops communities.

Eclipse Defense Technologies 111
Eclipse Defense Technologies has developed a line of variable velocity launchers in 37mm and 40mm which are powered by compressed air and available with smooth or rifled bores. They are capable of launching rifled and fin stabilized projectiles at velocities matching the range to target, effectively reducing risk of injury.

ENSINGER 316
We can call on our many years of experience in a vast array of industrial sectors to find the optimum solution for your specific application. We design and manufacture semi-finished and finished products as well as complete assemblies tailored exactly to your individual requirements.

FNH USA, Inc. 116
FNH USA, LLC is a U.S. subsidiary of FN Herstal S.A., a global leader in the development and manufacturing of high-quality firearms for the military, law enforcement and commercial markets. A pioneer in innovative firearm technology since the days of John M. Browning, FN supplies customers in more than 100 countries worldwide. Based in McLean, VA with manufacturing operations in Columbia, SC, FNH USA is responsible for all U.S. based sales and marketing.

General Dynamics-OTS 204
General Dynamics Ordnance and Tactical Systems produces large, medium, and small caliber ammunition, artillery projectiles, mortar weapons and components as well as extruded and BALL POWDER® propellants. In addition, GD-OTS manufactures components for missiles, rockets and bombs; provides LAP services for a variety of munitions; and designs and produces warheads.
GLOCK, Inc.  
GLOCK pistols are the perfect combination of reliability and accuracy. Their high-tech engineering and construction create a handgun that can stand up to more punishment any conditions can generate.

Heckler & Koch  
Heckler & Koch is the world’s premier small arms systems company and a major supplier to global military and federal law enforcement agencies. An innovative leader in design and manufacturing, Heckler & Koch provides technologically advanced firearms, logistical support, training and specialized services with the highest standards of innovation and reliability. Heckler & Koch’s well known range of weaponry includes MP5, MP7, G36, HK 416, USP, P2000, P30 and HK45.

ITT Enidine  
ITT Enidine designs and manufactures shock and vibration mounts for numerous Defense and Aerospace applications such as Recoil Management, Blast Mitigation and Vibration Dampening. Specifically designed for these applications, our expertise ensures all products are compliant with military standards. Our extensive knowledge and experience enables us to provide our customers with superior analysis, products, services and support.

Kistler Instrument Corporation  
Kistler Instrument will exhibit its full line of piezoelectric sensors to include dynamic ballistic pressure sensors for various ballistics applications, along with high g accelerometers for recoil, shock & vibration. Featured Product (2014) 6217A ballistics pressure sensor, high sensitivity, 2000 bar (30 kpsi) range. Ideal sensor for mortars, launchers, flare guns, side air bag and more. Technical, applications engineers are also available at the booth for your specific applications.

Kratos Defense & Security Solutions, Inc.  
Kratos is a leading provider of advanced engineering, public safety and security systems, IT services, and warfighter solutions for the federal government, state and local agencies and commercial applications. We leverage our intellectual and technical strengths to provide our customers with leading edge professional services and solutions for mission success.

Lancer  
Lancer’s Advanced Weapons & Components group is a team of engineers and manufacturing experts committed to providing innovative material solutions to warfighter and peace officers. The group provides advanced material solutions to the military and law enforcement community that make weapons and tools lighter, safer and more effective.

Nammo Talley, Inc.  
NAMMO is a world leading developer and supplier of ammunition and ammunition systems, missile and space propulsion products, and demilitarization services. Five Nammo Divisions; Small Caliber, Medium & Large Caliber, Missile Products, Demil and Nammo Talley, together provide our US Army Warfighters with quality, dependable products and services.

National Armaments Consortium (NAC)  
In operation for the last thirteen years, the Department of Defense Ordnance Technology Consortium (DOTC) is a collaborative partnership between the DoD and the National Armaments Consortium that leverages capabilities, development, prototyping and investments of all constituents – Government, Industry and Academia - to rapidly deliver ordnance technology to the warfighter.

Olin-Winchester  
Manufacturer of shotshell, rimfire, centerfire small caliber ammunition, up to and including 5.56mm, 7.62mm, and .50 caliber ammunition and components.

Otis Technology  
Otis Technology is the industry leader in firearms maintenance systems. Otis provides products to the US Military, Hunters, Shooters, and Law Enforcement professionals worldwide. Made in the USA, Otis is Smart Gun Care.

Precision Remotes, LLC  
Precision Remotes manufactures an innovative line of armed and unarmed ultra-light remote weapon platforms. The Company’s flagship products comprise three remote platforms: two site security products (T250DFS and T360FS) and an ultra-light remote weapon product (T360). The products are marketed under the TRAP (Telepresent Rapid Aiming Platform) name.

Remington Arms  
Remington Arms Company, Inc. produces innovative firearm and ammunition solutions for the military, government, and law enforcement markets, and is the largest global commercial supplier of firearms and ammunition to the hunting and shooting sports communities. Remington is part of a family of brands under the Freedom Group, Inc. name. Freedom Group has facilities in twelve US states and produces over 1 million guns and close to 2 billion rounds of ammunition annually.
RUAG Ammotec AG
RUAG Ammotec of Switzerland and RUAG SWISS P - The Sniper’s Choice of special ammo for all your special needs, stands for the most sophisticated ammunition technology. RUAG develops and manufactures high performance standard infantry as well as special applications small arms ammunition and is supplying both Armed Forces and LE worldwide. Be it for training or duty, RUAG also has a wide range of lead-free ammunition including Frangible Ammo. RUAG Ammotec is your reliable partner at all times.

Sierra Bullets
For over 60 years Sierra Bullets has been dedicated to the manufacture of the most accurate bullets in the world. This commitment to performance has established a “Tradition of Precision” for which Sierra is known throughout the world. Visit our website (www.sierrabullets.com) or give us a call (660-827-6300) to learn more!

Small Arms Defense Journal
Now on newstands with a new look... Small Arms Review: a bimonthly publication covering all aspects of civilian, law enforcement, and military small arms. Small Arms Defense Journal: this quarterly publication provides a global perspective on defense industry small arms, accessories, and tactical gear.

Smith & Wesson
Smith & Wesson Holding Corporation (NASDAQ: SWHC) is a U.S.-based leader in firearm manufacturing and design, delivering a broad portfolio of quality firearms, related products and training to the global military, law enforcement, and consumer markets. The company’s brands include Smith & Wesson, M&P and Thompson/Center arms. Smith & Wesson facilities are located in Massachusetts and Maine.

Trijicon
Trijicon manufactures self-illuminating combat optics for Small Arms and Machine Guns to include the Marine Corps’ and Army’s Rifle Combat Optic, the USMC’s Squad Day Optic and Medium Machine Gun Day Optic. The Advanced Combat Optical Gunsight (ACOG) is a Full Mission Profile Optic that provides a distinct aiming point in all environments without having to rely on failure-prone batteries. Our sights include the ACOG, Ruggedized Miniature Reflex, Thermal Weapon Sight, Reflex, and Night Sights.

Tungsten Heavy Powder, Inc.
Tungsten Heavy Powder & Parts (THPP) has been selling high-density tungsten powder for 15+ years. THPP also sells tungsten-carbide penetrators, heavy alloy fragments and subassemblies of any fragments on various substrates, such as silicon, magnesium, aluminum, et al. THPP also specializes in manufacturing the best heavy-alloy long-kinetic penetrator available today.

U.S. Army Research, Development, and Engineering Command (RDECOM)
Based at Picatinny Arsenal, NJ, Redstone Arsenal, AL, and Aberdeen Proving Ground, MD (respectively), the Armament RDE Center (ARDEC), Aviation and Missile RDE Center (AMRDEC), and Army Research Laboratory (ARL) provide critical research and underpinning technologies that support armament developments for Soldier weapons, ground combat vehicles, aircraft, mortars, and field artillery. ARDEC, AMRDEC, and ARL pursue this mission through interactions and collaboration with partners in government, industry, and academia and through a robust internal research and development capability.
EXHIBITOR FLOORPLAN

TECHNOLOGY DEMONSTRATORS
Updated as of 4/30/14

Aimpoint, Inc.
Barrett
Colt Defense, LLC
Eclipse Defense Technologies
FNH USA, Inc.
General Dynamics-OTS
GSA Direct/SRM Arms
Heckler & Koch
Precision Remotes, LLC
Remington Arms