



INDUSTRY DAY 2016



Fort Benning, Home of the MCoE

Lethality Branch

MAJ Jason Bohannon – Branch Chief
Mr Matt Walker – Deputy Branch Chief

12 April 2017



Agenda



Fort Benning, Home of the MCoE

Welcome & Introductions

- Lethality Branch Functional Areas and POCs
- Lethality Mission
- Joint Service Support
- Government Partners
- SWEAT
- Small Arms Capabilities
- Firepower Capabilities
- SAAC
- DOTC

Presenters

MAJ Jason Bohannon
Mr Matt Walker

Questions

Breakouts with Subject Matter Experts



Lethality Branch



Fort Benning, Home of the MCoE

MAJ Jason Bohannon
Lethality Branch Chief
jason.d.bohannon.mil@mail.mil
(706)545-5039

Mr. Matt Walker
Lethality Branch Deputy
matthew.c.walker3.civ@
(706)545-7226

VACANT
Small Arms Section Chief

PROJECT NCO

SFC James Robinson
james.o.robinson16.mil@
(706)545-2841

VACANT
Firepower Section Chief

SMALL ARMS

FIREPOWER

Individual Weapons

Mr. Daryl Easlick
Close Effects
daryl.a.easlick.ctr@
(706)545-2972

Mr. Ken Caruthers
Intermediate Effects
kenneth.v.caruthers.ctr@
(706)545-4999

Mr. Steve Howard
Fire Control, Volume Effects
and Nonlethal
steven.r.howard8.ctr@
(706)545-2459

Mr. Bill Morgan
Indirect Effects
william.e.morgan.ctr@
(706)545-4195

Mr. Eric Stebner
Precision Effects
eric.w.stebner.ctr@mail.mil
(706)545-1725

Ammunition

Mr. John Amick
Small Cal Programs
john.w.amick.ctr@
(706)545-5013

Mr. Styles Underwood
Small Cal Programs
styles.e.underwood.ctr@
(706)626-8614

Mr. Richard Reed
40mm Programs
richard.reed.ctr@
(706)545-4658

Future Technologies

Mr. Al Self
JSSAP LNO
alton.l.self.ctr@
(706)545-3181

MORTARS

Mr. Alex Wright
Mortar Systems
alexander.w.wright.ctr@
(706)545-4959

Mr. Bruce Pitts
Mortar Ammunition
bruce.p.pitts.ctr@
(706)545-6855

**Close Combat
Missile Systems**

Mr. Rob Zimdahl
TOW Missiles
George.r.zimdahl.ctr@
(706)545-1294

Mr. Francis Brissett
Javelin Weapon System
francis.m.brissett.ctr@
(706)545-4867

**Shoulder Launched
Munitions and
Soldier Munitions**

Mr. Warren Turner
Shoulder Launched
gamaliel.turner.ctr
(706)545-4744

Mr. John Ryan
Grenades
john.j.ryan74.ctr
(706)545-6978

**B-LOS
(Precision Effects)**

Mr. Rick Hairston
LMAMS
Richard.k.hairston2.ctr@
(706)545-1076

US Government

Contractor

Required – 13 Off, 14 Enl, 11 Civ Authorized – 5 Off, 1 Enl, 1 Civ Assigned – 2 Off, 2 Enl, 1 Civ

Maneuver Center of Excellence - Team of Soldiers, Families, and Civilians from the Best Army in the World!

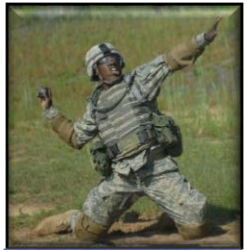


Lethality Mission



Fort Benning, Home of the MCoE

Serve as the DOD proponent for Small Arms Systems, Mortars, Close Combat Missile Systems, Beyond Line of Sight Systems, Shoulder Launched Munitions, Soldier Handheld Munitions, and Tactical Nonlethal weapon systems.





Joint Service Support



Fort Benning, Home of the MCoE



US Army



Special Operations Command (SOCOM)



US Marine Corps



US Navy



US Air Force



US Coast Guard



Government Partners



Fort Benning, Home of the MCoE



TRADOC



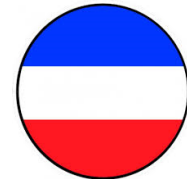
PEO
Ammunition
(973) 724-7116



PEO
Soldier
(703) 704-2802



PEO
Missiles & Space
(256) 313-3411



FORSCOM



Army Capabilities
Integration Center
(757) 788-4280



Combined Arms Center
(913) 238-4537



TRADOC Capability Manager
Infantry Brigade Combat Team
(706) 545-3911



TRADOC Capability Manager
Armor Brigade Combat Team
(502) 624-7955



TRADOC Capability Manager
Stryker Brigade Combat Team
(706) 545-5364



TRADOC
Analysis Centers

Combat Development Offices



Joint Nonlethal
Weapons Directorate
(573) 563-3041



Marine Corps
Combat Development
Command
(703) 614-8610

Army Laboratories



Benet Labs
Watervliet Arsenal
518-266-5627



ARDEC
973-724-4021



AMRDEC
(256) 975-3202



Army Research
Laboratory
(301) 394-3590



Fort Benning, Home of the MCoE

Small Arms



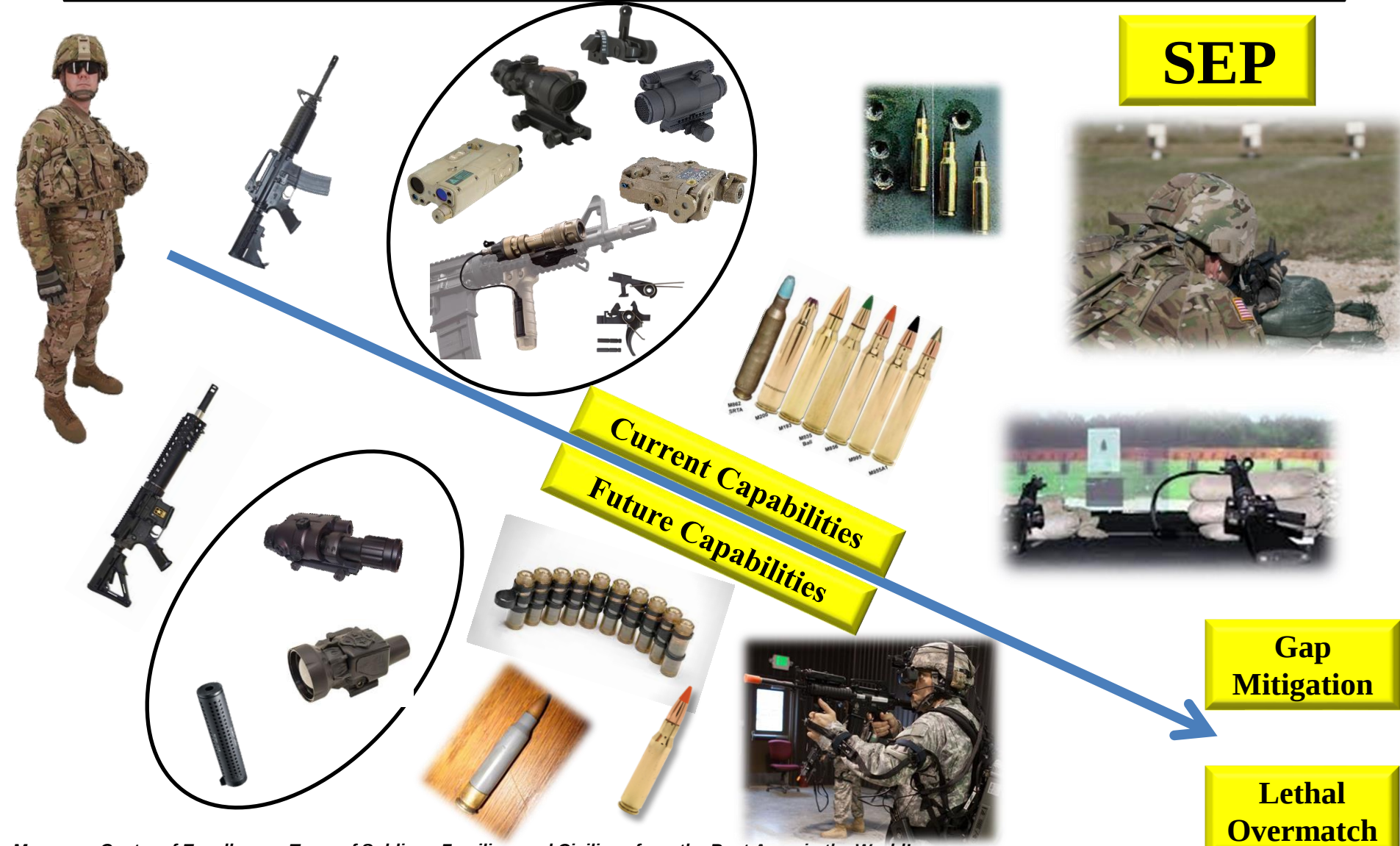
Small Arms Improvement Approach (SWEAT)



Fort Benning, Home of the MCoE

Soldier + Weapon + Enabler + Ammo + Training = Effect

SEP





Summary of Small Arms Section Desired Capabilities



Fort Benning, Home of the MCoE

Individual Weapons

- Carbine Product Improvements: M4A1 MWO proceeding
- All other improvements pending SA-FC/FWS-i/NGSAR decision points

Sniper Weapons/Accessories and SDM-R

- Precision Sniper Rifle (PSR) CPD approved, pending funding
- Compact Semi-Automatic Sniper System (CSASS) upgrade to M110
 - Formal RFP closed Source Selection in Process, funding pending
- Squad Designated Marksman-Rifle directed requirement pending funding

Pistols/Suppressions/Shotguns

- Modular Handgun System (MHS) XM17 in PVT, pending GAO outcome from protest, Holster and Enabler efforts integrating
- Signature Suppression capabilities for both visual and acoustic signatures
- Tactical Compact Shotgun (TCS) CPD, Standardize M500 in staffing ~30 days

Crew Served Weapons

- Mounted Machinegun Optic for Mounted Machinegun (CPD Approved, RFP for paper proposal scheduled for 4QFY17)
- Mounting solutions to support MG enablers and Fire Control integration (Articulating Rail, MK19 brackets)

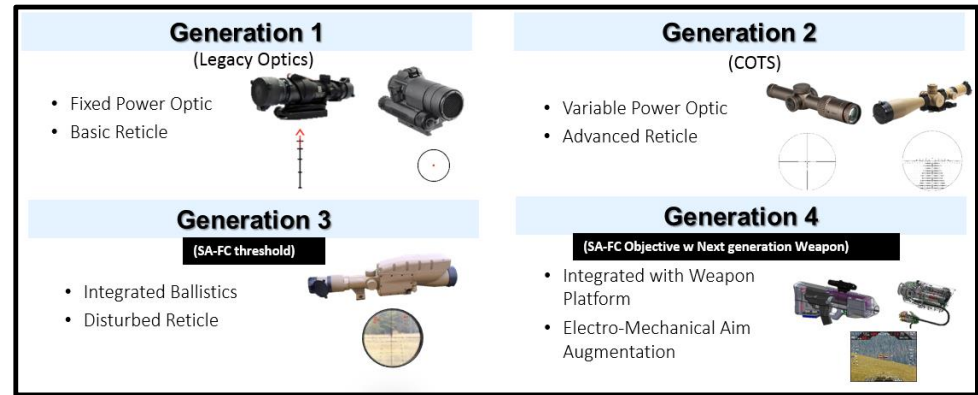
Optics

- Fire Control across all platforms

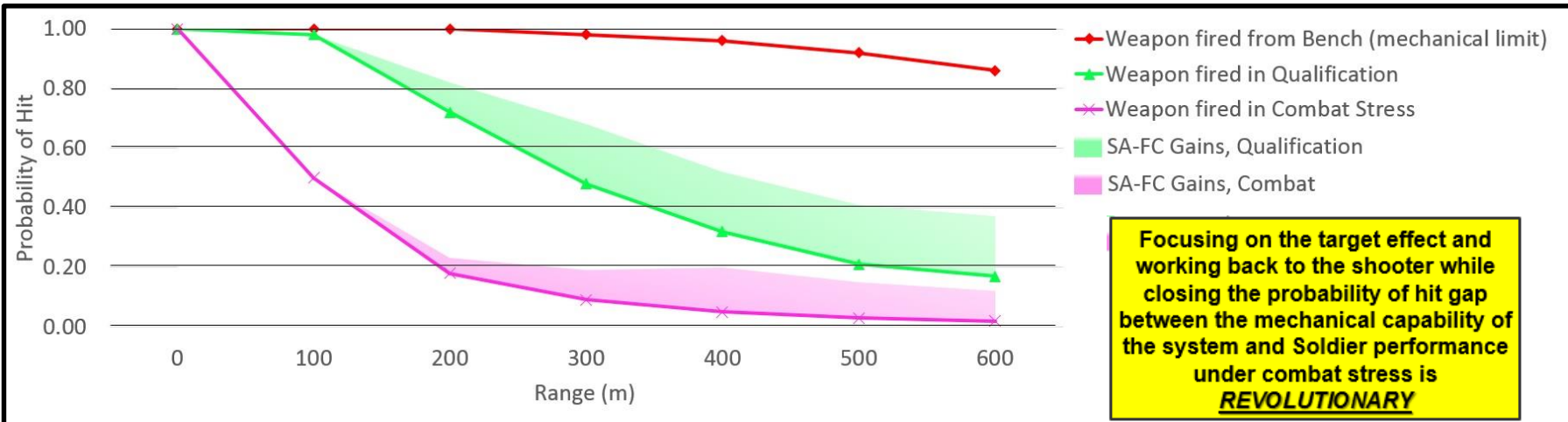
Fire Control is target engagement activities that maximize probability of hit and increase lethality

Small Arms Fire Control Threshold capability puts bullets on target faster and more accurately through optical clarity-far target location, environmental sensing, ballistic computation, an adjusted aiming point, and includes diagnostics, prognostics and training capabilities. Strategy is to procure four variants:

- Long Range (LR) precision (sniper)
- Medium Range (MR) precision (sniper)
- Crew served (M240L and M249)
- Squad (squad carbine / rifle)



Small Arms Fire Control Fire P(h) benefits





Summary of Small Arms Section Desired Capabilities (cont.)



Fort Benning, Home of the MCoE

Small Caliber Ammunition

- Reduced weight
- Reduced signature
- Reduced fouling and contaminants
- Improved terminal performance
- Improved intermediate barrier performance

40mm Low Velocity Ammunition

- Increased Range Anti-Personnel (High Explosive Air Burst XM1166): Improved Lethality, Improved Accuracy, Increased Range, and Counter Defilade
- Door Breaching capability (XM1167): Ballistic breach of an existing exterior door
- Short-Range Anti-Personnel (XM1168): Improved Lethality against close range, threat personnel

40mm High Velocity Ammunition

- Improved High Explosive Dual Purpose: Increased lethality, Counter defilade, Improved accuracy



Ammunition



Fort Benning, Home of the MCoE

Lightweight Small Caliber Ammunition (LSCA)

- Reduces Soldier load for one of his heaviest items – ammo
- Drop in solution for existing family of for 5.56mm, 7,62mm and .50 CAL weapons
- No compromise in current capability (e.g. reliability and durability)
- PM-MAS Industry Day 19APR16

One Way Luminescence (OWL) Ammunition

- Increases Soldier survivability by fielding a tracer our adversaries can't readily see
- Drop in solution for existing family of for 5.56mm, 7,62mm and .50 CAL weapons
- Also increases effectiveness of current tracer ammo through advanced design
- Potential to eliminate tracer / ball mixed ammo in the future



Next Generation Squad Weapon(s)



Fort Benning, Home of the MCoE

- First Unit Equipped 2025-2045
- Automatic Rifle, Medium Machinegun, Carbine, SDM (any or all possible)
- Increased chamber pressure, increased muzzle velocity/energy
- Improved Probability of Hit out to 600m
- Improved Probability of Incapacitation
- Lightweight Weapon
- Lightweight Ammo
- Suppressed
- Reduced recoil
- Rounds counter
- Addresses SA CBA/Squad Gaps (precise fire, volume fire, improved operation and maintenance, avoid detection, improve Soldier mobility)



Next Generation Squad Automatic Rifle



Fort Benning, Home of the MCoE

- CDD in HQDA staffing funding in POM
- Replacement for M249 Squad Automatic Weapon by FY 2025
- Precise and Volume Fire Out to 600 meters [Increased P(h)/P(i)]
- Caliber TBD
- Lightweight weapon (12 pounds with bipod, sling, suppressor)
- Lightweight ammo (20% less than comparable brass)
- Capable of suppression (Unable to localize)
- Reduced recoil (Able to control automatic fire)
- Rounds counter (Predictive maintenance)





Fort Benning, Home of the MCoE

Firepower



Summary of Firepower Section Desired Capabilities



Fort Benning, Home of the MCoE

Mortars Systems, Fire Control, and Ammunition

- Precision and Extended Range (HEGM, ERM, FERA)
- Automated Mortar Turret (AMT)
- Automated Remote Capability (ARC)
- Lightweight Fire Control (WULF, NW/LHMBC Integration)
- Enhanced Lethality
- Mortar CBA/JCIDS Status

Nonlethal Munitions

- NL munitions with marking capabilities and extended range (Standoff)
- Individual Nonlethal System (INS) that can deliver NL effects from 0-150 meters (variable velocity, directed energy, etc.)

Shoulder Launched

- Multi-target
- Confined space capability
- Lightweight Systems
- Anti-Personnel
- Increased range against area and personnel targets

Soldier Munitions

- Multipurpose (Frag & Blast) Hand Grenade (Increased Pi and IM Safe)
- Improved Tactical Obscuration Hand Grenade ($\geq$ performance of HC)
- Enhanced Incendiary Hand Grenade (penetrate steel plate $\geq \frac{3}{4}$ ", reduce toxicity, and weight by 35%)



Summary of Firepower Section Desired Capabilities (Cont.)



Fort Benning, Home of the MCoE

Pyrotechnics

- Anti-personnel mine training device (Claymore MILES) Prototype Development
- Rapid assault lane line charge (RALLC) ARCIC validated sent for HQDA staffing
- Battlefield Smoke Pyrotechnics (BSP) CPD scheduled for WWS 4Q17

Close Combat Missile Systems (TOW/ITAS and Javelin)–Multi-target

- Javelin: Development of Lightweight Command Launch Unit (CLU) in progress, estimate FUE 2023, funding in the POM
 - Enhanced Portability for Dismounts, Networked Interoperability, Embedded trainer
- Multi-Purpose Warhead, Dominant Lethality Overmatch
- TOW/ITAS: Networked Interoperability

Next Generation Missile Compatibility

- Currently in HQDA staffing/not currently funded
- Non Line of Sight
- Provides small unit organic, responsive precision fire capability
- Limits collateral damage, capable of last second wave-off
- Limits enemy tactic of using population & terrain as a shield
- Attack at range, from any direction
- Affords protection and standoff
- Precisely engage combatants in complex terrain at standoff ranges
- Soldier-operated missile provides a flight time of 15 minutes and the capability to engage targets out to ranges of 10 KM.



Small Arms Ammo Configuration Study



Fort Benning, Home of the MCoE

Purpose: Provide an updated ammunition system approach to mitigate the capability gaps prescribed in the Small Arms CBA and inform small arms weapons priorities and modernization strategy

Objective: Establish small arms ammunition system attributes and their associated values with defensible analytic evidence. The study evaluated the operational benefit and cost of alternative small arms ammunition capabilities to determine the preferred set of ammunition system attributes that mitigate capability gaps prescribed in the Small Arms CBA.

Emerging Results: Emerging threats require US small arms technologies to provide an order of magnitude increase in small arms capability, proving extensive effects at range, and yielding significant overmatch to Army and Marine squads over threat adversaries.

Final Report due April 2017



The DOTC Enterprise



Fort Benning, Home of the MCoE

DoD Ordnance Community



OSD Charter

OVERARCHING AGREEMENT PROTOTYPE OTHER TRANSACTION



DOTC OTA

National Armaments Consortium



NAC CMA

- OUSD (AT&L) LW&M
- Department of The Army
- Department of the Navy
- Department of the Air Force
- Special Operations Command
- DARPA
- DTRA
- Other Agencies and Departments



- Defense Contractors
- Small Businesses
- Academic Institutions
- Non Profit Organizations
- Not -for-Profit Organizations
- Non-Traditional Defense Contractors

The DOTC Consortium - Partnership to Accelerate Warfighter Superiority



Consortium Benefits



Fort Benning, Home of the MCoE

- **Industry/Academia:**
 - *Power of the Network* with innovative business relationships
 - More visibility and *higher resolution of technology gaps*
 - Open collaboration with Government during requirements development and project definition activities
- **Defense Technology Base:**
 - *Rapid Response* to DoD customer needs
 - Research & development activities focused on demonstration of prototypes for transition to the *Warfighter*



DOTC Scope and Technical Objective Areas

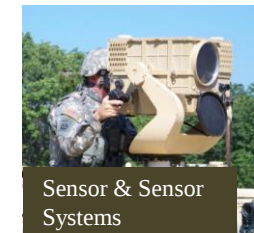
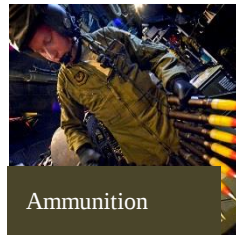


Fort Benning, Home of the MCoE

Directly Relevant to Ordnance

“Ordnance” is the ammunition, armaments, munitions, weapons, systems and related military materiel such as equipment and components that enables the military to achieve combat and mission effectiveness in all warfare environments: air, land, sea, undersea and space. Ordnance to support all of the warfare environments is further defined in the below technology areas:

DOTC Technology Objective Areas

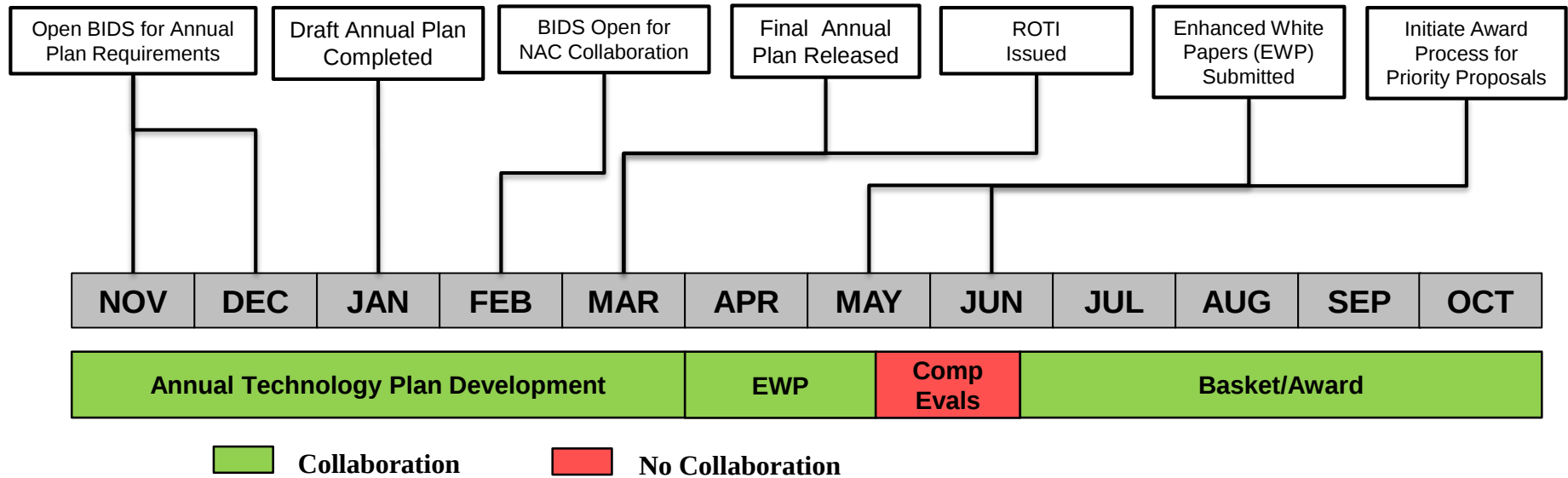




Annual Cycle & Collaboration



Fort Benning, Home of the MCoE



- Early and extended engagement enhances industry, academia, and Government collaboration
- Collaborative processes improves alignment with customer requirements
- Industry and Government collaboratively work SOW and award process

Reduced Workload with Enhanced White Paper Selections



DOTC Points of Contact



Fort Benning, Home of the MCoE



- Government POCs should contact the DOTC Program office directly
- Industry and Academia POCs should contact ATI (Lindsey LePine is listed below) directly to join the NAC. NAC membership cost is \$500/year.
- Visit us at www.nac-dotc.org.

Mr. Donald A. Geiss Jr.
DOTC Program Director
Phone: (973) 724-3386
Email: donald.a.geiss.civ@mail.mil

Mr. Charlie Zisette
NAC Executive Director
Phone: (540) 239-0762
Email: ED@nac-dotc.org

Mr. Jamie Wilson (CTR)
Senior Management Analyst
Phone: (973) 724-2379
E-mail: james.j.wilson.ctr@mail.mil

Mr. George Solhan
NAC Director of Customer Affairs
Phone: (813) 839-0952
Email: DCA@nac-dotc.org

Mr. Michael J. Tauber
JSSAP Research Program Director
Phone: (973) 724-7690
E-mail: michael.j.tauber.civ@mail.mil

Ms. Lindsey LePine
NAC Consortium Mgmt Firm
Phone: (843) 760-3481
Email: naccmf@nac-dotc.org



Closing Remarks



Fort Benning, Home of the MCoE

General Questions

(See SMEs for specifics)

- Fed Biz Ops
- SEP
- CTTSO
- NDIA (1-2 May 17)
- RCO



Fort Benning, Home of the MCoE

Backups



DOTC Vision & Mission



Fort Benning, Home of the MCoE

Vision:

An integration of Government, Industry, and Academia into a single enterprise executing Joint and co-funded initiatives, sharing and developing goals and objectives, resources and assets, and utilizing existing personnel, facilities and equipment

Mission:

To enhance our warfighters' lethality, survivability and combat effectiveness by facilitating the industrial and academic research, development and technology demonstrations needed to advance and expand our military technological superiority

- Rapid technology transfer to the Warfighter
- Advocates a critical mass of world-class technologists
- Leverages government, private industry and academia R&D resources
- Promotes nontraditional defense contractor involvement
- Promotes innovation



DOTC Management Organization

Fort Benning, Home of the MCoE



EXECUTIVE COMMITTEE

GOVT. Co-Chair Mr. Jose Gonzalez

NAC Co-Chair Ms. Diana-Lynn Herbst



AFRL-Eglin COL John Gloystein
AMRDEC Ms. Christi Dolbeer
ARDEC Mr. John Hedderich
ARL Dr. Pat Baker
NAVAIR Mr. Dave Devine
NAWC-CL Ms. Joan Johnson
NSWC-DD Mr. Mike Till
NSWC-IH Mr. Ashley Johnson
SOCOM Mr. Karl Rozelsky

GD-OTS Mr. Joe Buzzett
Leidos Dr. Paritosh Dave
Lewis M&T Mr. Karl Lewis
MS Tech Mr. Kurt Oschman
Nammo Talley Mr. Dan Haun
Orbital ATK Mr. Rollie Dohrn
Penn State Dr. Eric Boyer
Spectra Tech Mr. Dan Hartman

NAC DIRECTORS

NAC Executive Director
NAC Director of Customer Affairs

Mr. Charlie Zisette
 Mr. George Solhan



NAC CONSORTIUM MANAGEMENT FIRM

Program Manager
Contracts Manager
Program Support
Administrative Support

Ms. Dolly Pelto
 Ms. Mica Dolan
 Mr. Shawn Gore
 Ms. Lindsey LePine



OTA MANAGEMENT

Lead Agreements Officer
Agreements Officer
Lead Legal Council
Legal Council
Legal Council

Ms. Kelly Gorman
 Mr. Steven Ghazi
 Ms. Denise Scott
 Mr. Jered Leo
 Ms. Kelly Sledgister-Stehle



PROGRAM OFFICE

Director Mr. Donald A. Geiss Jr.



Senior Management Analyst
Administrative Officer
AOR/Website Management
Lead Financial Analyst
Financial Analyst

Mr. James J. Wilson(CTR)
 Ms. Noel Los
 Ms. Maria C. Gonzalez (CTR)
 Ms. Darlene Hopler
 Ms. Nicole Cohn

TECHNOLOGY MANAGERS

Ammunition (AMM)



Mr. Tim Garry (CTR)
 973-724-9745

Demilitarization (DEM)



Ms. Lynda Ru
 973-724-4288

Joint Insensitive Munitions (JIM)



Mr. Ryan Ordemann
 973-724-8742

Fuzes (FUZ)



Ms. Lynda Ru
 973-724-4288

Enabling Technologies (ENT)



Dr. Jyothi Krishnan
 973-724-9669

Energetic Materials (ENR)



Mr. Ryan Ordemann
 973-724-8742

Protection & Survivability (PAS)



Mr. Killolkumar Parikh
 973-724-9527

Rockets, Missiles, and Bombs (RMB)



Dr. Jyothi Krishnan
 973-724-9669

Warheads/Lethal Mechanisms (WLM)



Mr. Tim Garry (CTR)
 973-724-9745

Weapon Systems (WPN)



Mr. Vinh Vo
 973-724-9380

Directed Energy Warfare (DEW)



Mr. Killolkumar Parikh
 973-724-9527

Sensor & Sensor Systems (SSS)



Ms. Lynda Ru
 973-724-4288

NAVY Liaison



Mr. Butch Burgess
 (CTR)
 813-362-1100

Air Force Liaison



Mr. Devin Swanson
 850-882-8992

SBIR Liaison



Dr. Jyothi Krishnan
 973-724-9669