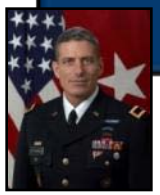
Project Manager Soldier Weapons
Program Overview
NDIA

15 May 2012

COL Scott C. Armstrong
Project Manager Soldier Weapons

Program Executive Office Soldier

PEO
BG Paul A. Ostrowski



Command Sergeant Major (PEO)
CSM Bernard C. McPherson

Executive Officer (PEO)
MAJ Beire Castro

Executive Office Manager (PEO)
Katherine Wilks

Chief of Staff
Kurt Frulla

Acquisition Policy
Jerry Varela

Resources Management
Mark Conley

Operations & Communications
Tom Coleman

System Integration
Kathy Gerstein

DPEO
Mary J. Miller

Executive Assistant (DPEO)
Peggy Blakeney

ASA(ALT) Soldier Maneuver Systems (SMS) Directorate

COL Gerry Davis, Director SMS
David Nelson Deputy Director
(SWAR) – MAJ Mike Kovacs
(SPIE) – Kate Keith
(SSL) – James Lewis
(SW) – Shelby Stevens

Project Manager
Soldier Weapons
COL Armstrong

DPM Soldier Weapons
Fred Coppola

- PM Individual Weapons
- PM Crew Served Weapons

Project Manager
Soldier Warrior
COL Riggins

DPM Soldier Warrior
Bill Brower

- PM Air Soldier
- PM Ground Soldier

Project Manager
Soldier Protection and Individual Equipment
COL Cole

DPM Soldier Protection and Individual Equipment
David Super

- PM Soldier Clothing & Individual Equipment
- PM Soldier Protective Equipment

Project Manager
Soldier Sensors and Lasers
COL Foster

DPM Soldier Sensors and Lasers
Lloyd Luedtke

- PM Soldier Maneuver Sensors
- PM Soldier Precision Targeting Devices

BG Paul A. Ostrowski, PEO Soldier

Notable Assignments

- Assistant Deputy for Acquisition and Systems Management ASA (ALT)
- XO to the CDR, SOCOM
- Director, Operational Test and Evaluation, (later PEO for Special Programs, SOCOM)
- PM, Counter proliferation, SOCOM
- Systems Acquisition Manager, SOCOM
- Legislative Fellow, later Project Leader, REF, Office of the Secretary of the Army, and OIF
- CDR, SF Operational Detachment, B Co. Later, S-3, 1st Bn, 7th SF Group (Airborne), Fort Bragg

Education

- United States Military Academy, BS – Geography
- Naval Postgraduate School, MS – Systems Acquisition Management
- National Defense University, MS – National Resource Strategy

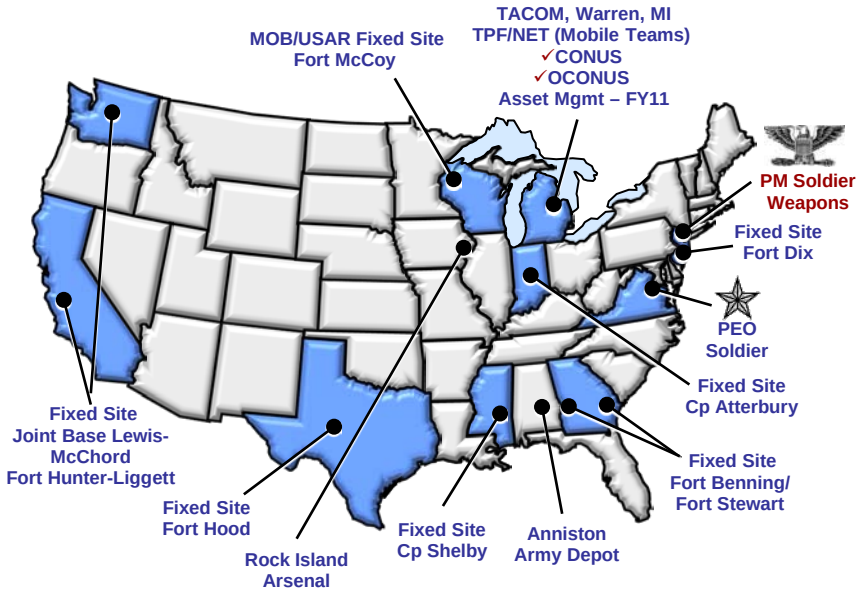
Notable Awards

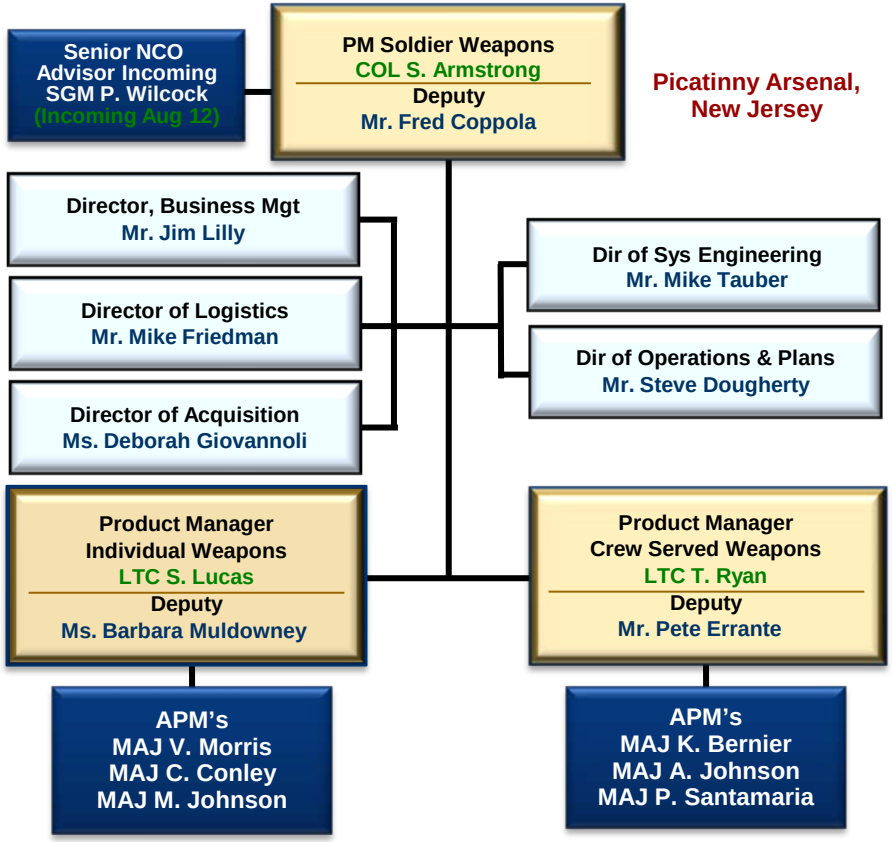
- Defense Superior Service Medal
- Bronze Star Medal
- Defense Meritorious Service Medal (with Oak Leaf Cluster)
- Meritorious Service Medal (with Oak Leaf Cluster)
- Army Commendation Medal (with 2 Oak Leaf Clusters)
- Joint Service Achievement Medal (with Oak Leaf Cluster)

New PEO Soldier Logo

New PEO Soldier Coin

Project Manager Soldier Weapons Mission and Organization





Afghanistan

Eight
Forward Sites

Kuwait

One
Forward Site

PM SOLDIER WEAPONS

Vision

Provide premier Soldier weapons systems enabling battlefield dominance.

Mission

Develop, acquire, field and sustain dominant Soldier weapons for the Army through effective and efficient management throughout the acquisition life cycle.
Be immediately responsive to the Soldiers' wartime requirements.

Values

Loyalty, duty, respect, selfless service, honor, integrity, personal courage

Warfighter focus, teamwork, professionalism

PM Soldier Weapons Programs

Current

M16A4
Rifle

M68
Close Combat Optic (CCO)

M24
Mini Binocular

M25
Stabilized Binocular

M4
Carbine

M4 w/ M203
Grenade launcher

M320
Grenade Launcher Mounted on M4

M320
40mm Grenade Launcher Stand-alone

M4 w/ M26
Modular Accessory Shotgun System (MASS)

M26
Modular Accessory Shotgun System (MASS) Stand-alone

M110
Semi-Automatic Sniper System (SASS)

M14
Enhanced Battle Rifle (EBR)

XM2010
Enhanced Sniper Rifle (ESR)

M107
Long Range Sniper Rifle

M240L
Medium Machine Gun

M249
Squad Automatic Weapon (SAW)

Rifle Combat Optic (RCO)

M240B
Medium Machine Gun

MK19
Grenade Machine Gun

M145
Machine Gun Optic

M153
Common Remotely Operated Weapon Station (CROWS)

M2
.50 Caliber Machine Gun

M2A1
.50 Caliber Machine Gun

Developmental

XM25
Individual Semi-Automatic Airburst System (ISAAS)

XM806
Lightweight .50 Caliber Machine Gun

XM205
Lightweight Tripod

Future

Subcompact

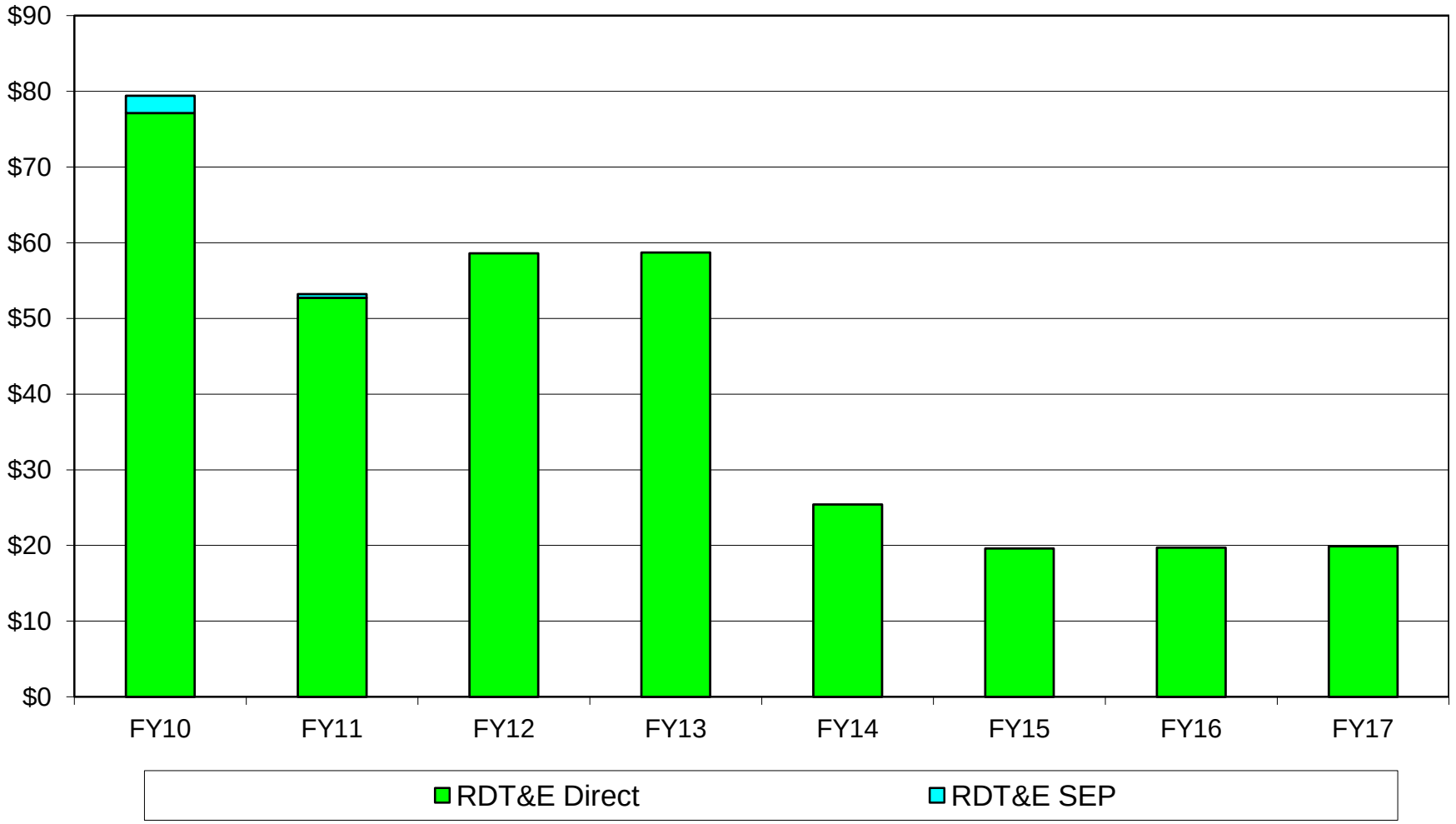
Carbine

Light Machine Gun

Precision Sniper Rifle

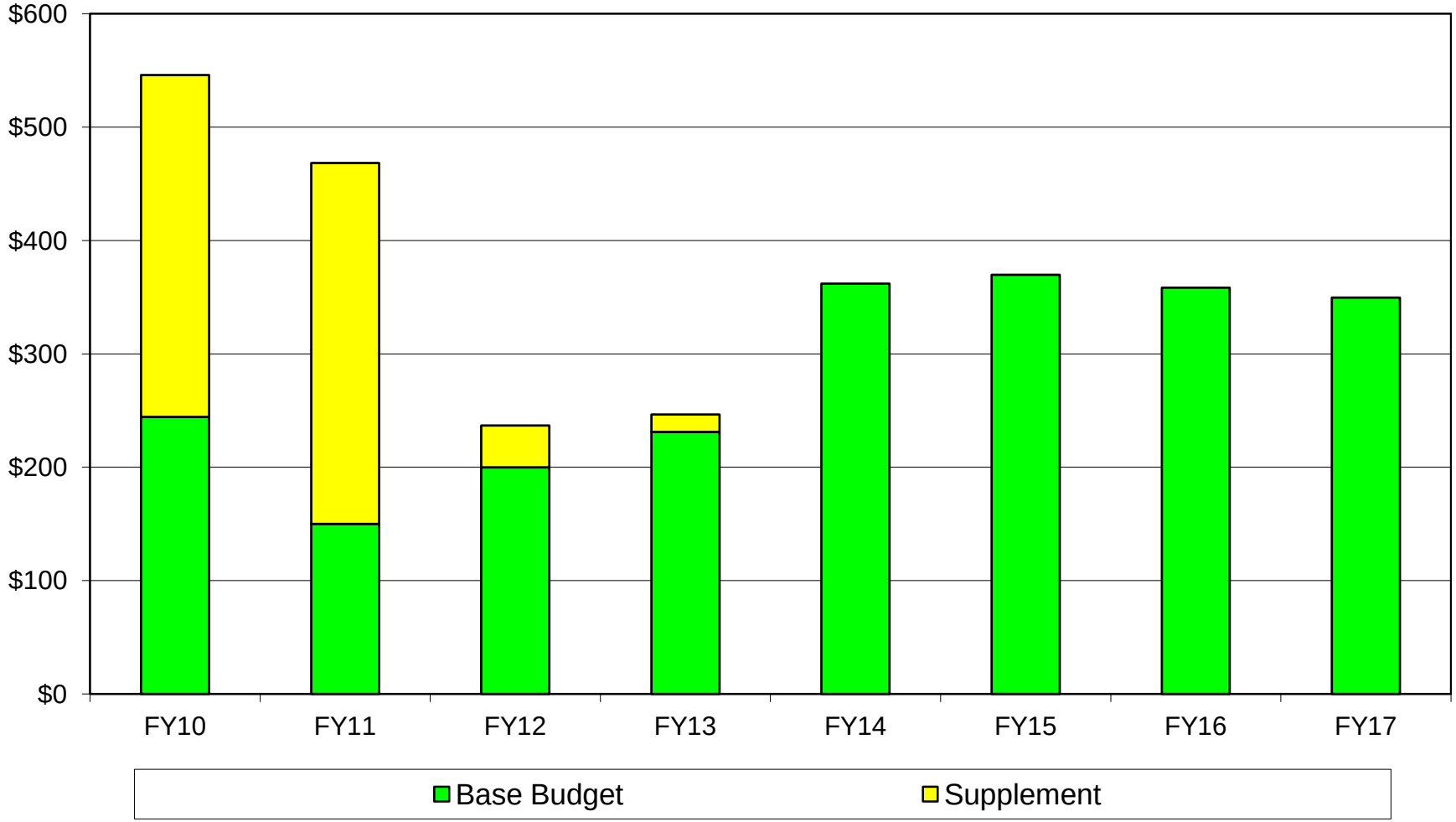
"Provide premier Soldier weapons systems enabling battlefield dominance"

RDT&E Funding Profile
(millions of dollars)



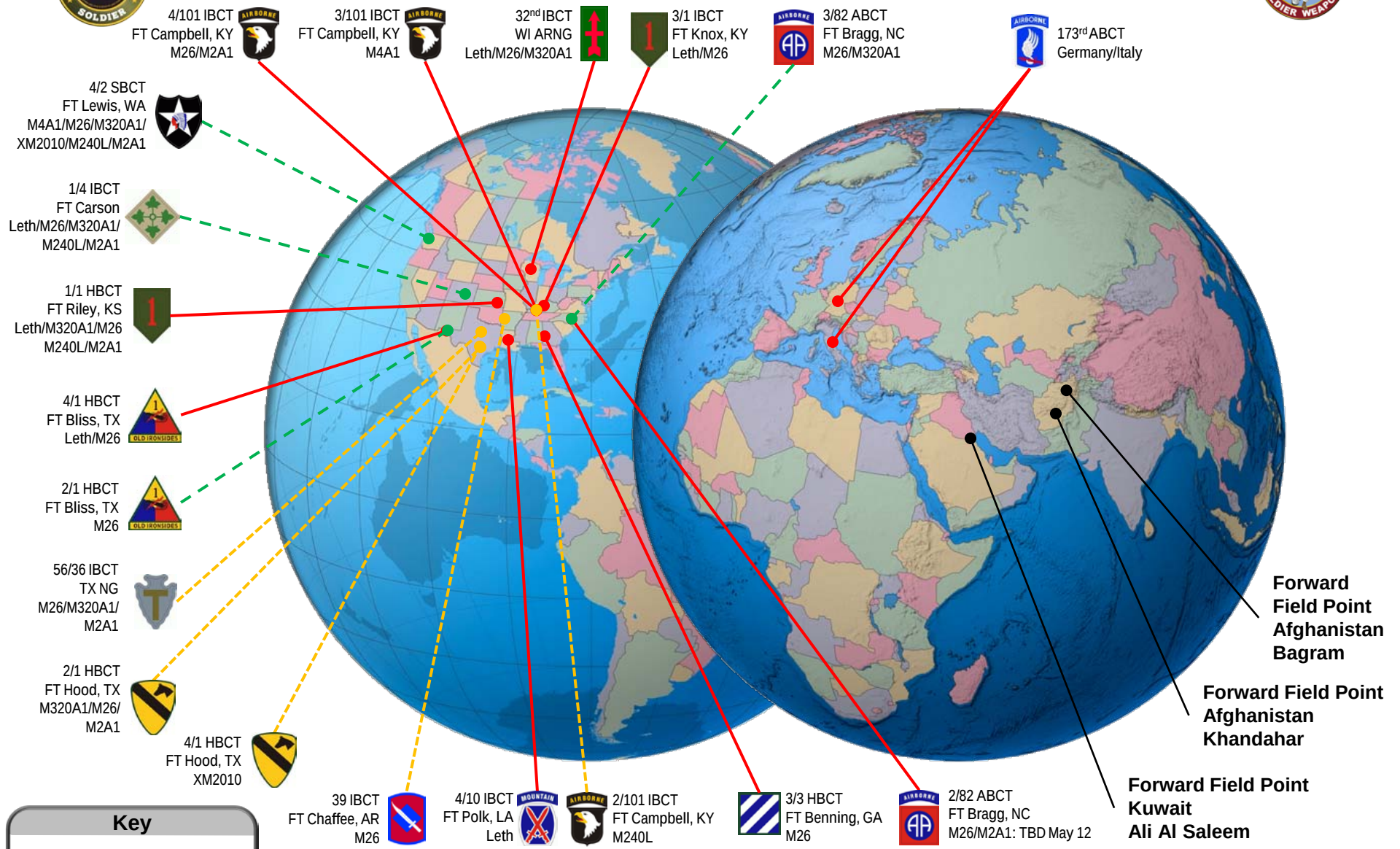
FY10-12 Actual Funding. FY13 PB/FY14 POM

Production Funding Profile
(millions of dollars)



FY10-12 Actual Funding. FY13 PB/FY14 POM

PM SW BCT Fieldings May 12 – Jul 12



Key

- May 12 Fielding
- Jun 12 Fielding
- Jul 12 Fielding

World Wide Responsive Support to Soldiers

As of 1 May 2012

PM Soldier Weapons Management Priorities

- Program execution
  - Cost, schedule, performance
- Obligations & disbursements
- Quality
  - Production issue mitigation
- Competitive environment
- Stakeholder relationship

PM Crew Served Weapons
LTC Thomas Ryan

15 May 2012

COL Scott C. Armstrong
Project Manager Soldier Weapons

PM Crew Served Weapons Programs

Current

M153
Common Remotely Operated Weapon Station (CROWS)

M2A1
.50 Caliber Machine Gun

M240L
Medium Machine Gun

M2
.50 Caliber Machine Gun

M240B
Medium Machine Gun

M249
Squad Automatic Weapon (SAW)

MK19
Grenade Machine Gun

M24
Mini Binocular

M25
Stabilized Binocular

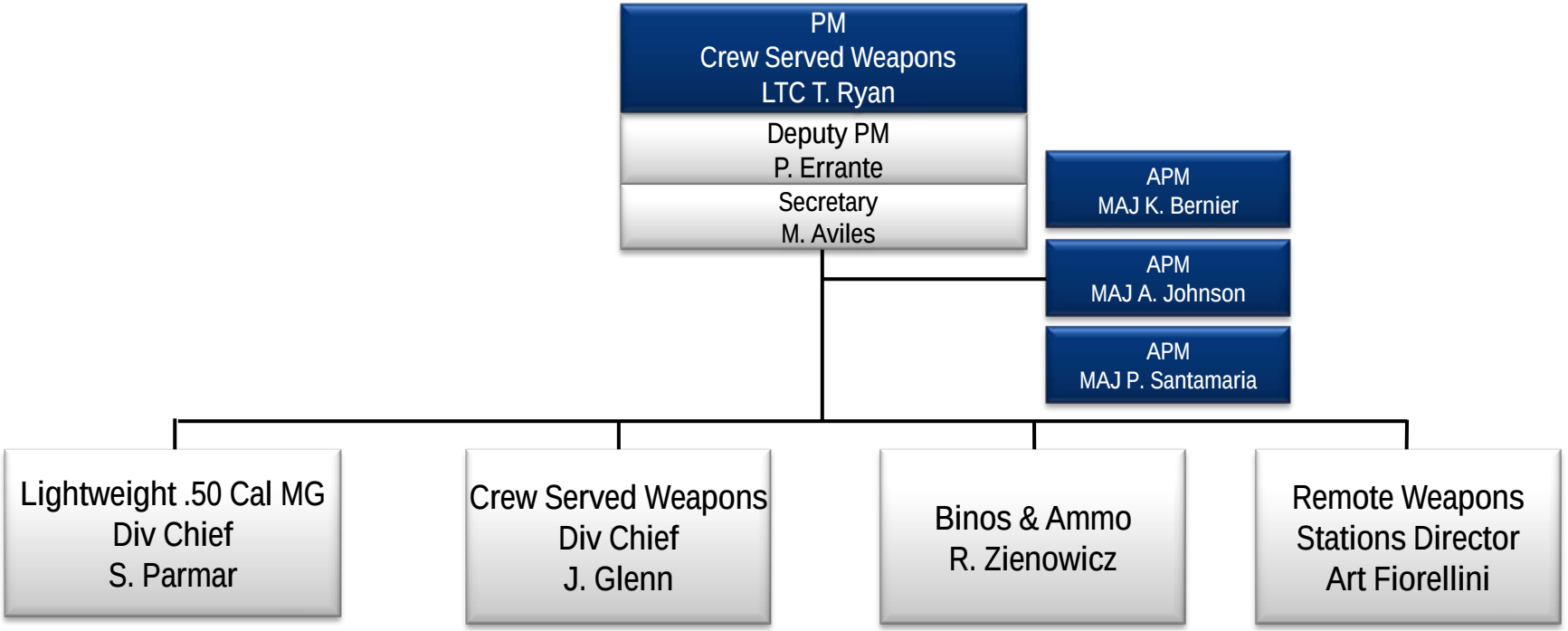
M145
Machine Gun Optic

Developmental

XM205
Lightweight Tripod

XM806
Lightweight .50 Caliber Machine Gun

Product Manager Crew Served Weapons



M240L 7.62mm Medium Machine Gun

Description

- This “Army’s Greatest Invention 2010” winner evaluated high performance, lightweight material alternatives and alternate manufacturing methods in fabricating major M240B components

Capabilities

- At 22.3 lbs., the M240L reduces the Soldier’s combat load by 5 lbs. compared to M240B
- Short barrel and collapsible buttstock allows easier handling and movement of weapon

Status

- Contract Award FEB 12
- More than 40% Fielded

Army Greatest Invention 2010

XM806 .50 Caliber Machine Gun

Description

- Lightweight, 2-man portable, vehicle and ground mounted .50 Cal crew served weapon system

Capabilities

- 40lbs. lighter & 60% lower recoil
- Quick change barrel with fixed headspace and timing
- Fires all .50 caliber service ammunition with M9 links
- Can be dismounted from vehicle platform and remounted on ground mount <30 seconds

Status

- EMD complete
- Pursuing TC-LP, MS-C

M2A1 .50 Caliber Machine Gun

Description

- Upgraded M2s include fixed headspace and timing, Quick Change Barrel & flash hider.
- Two efforts underway to convert all 45,000+ guns in the fleet

1) Fielded M2s will be upgraded at Anniston with kits
2) GDATP to build ~10K full-up M2A1s

- First Unit Equipped August 2011

Capabilities

- Upgrade speeds target engagement and improves survivability and safety by reducing the time required to change the barrel

Status

- Ongoing production
- Pursuing competitions for guns and kits

XM205 Lightweight Tripod

Description

- Lightweight tripod for use on the M2/M2A1, MK19, and XM806 machine guns
- It is a modified commercial product weighing 34-pounds (32% weight savings over the current M3)
- Intended to replace M3 tripod

Capabilities

- Provides integral traverse and elevation mechanism for easier, more accurate target engagement; adjustable traverse limit stop for night time missions; and new lightweight pintle design
- Collapses to less than 50% of the deployed size

Status

- Testing completed
  Pursuing MS – C , TC- S, July 2012
- FUE Dec 2013

XM205 Lightweight Tripod Detail

Weapons Interface

Able to mount:

- M2/M2A1
- MK19 (with use of MK93)
- XM806 (with adapter)

Lightweight Pintle

- Allows more elevation and depression than M3 pintle
- Has a quick release pin

Front leg

- Rotates in 6 degree increments to accommodate all types of height and terrain

Traverse and Elevation (T&E) Mechanism

- Integrated T&E mechanism
- Knobs allow for bold and fine adjustments
- Allows for quicker more accurate target engagement

Traverse Limit Stop

- Adjustable traverse stop enables user to set field of Fire

"King Pin"

Pintle Storage

- Stowage spot for pintle so it will always remain with the tripod

Stability

- Spades on all three feet which allow tripod to dig Into dirt and sand while firing

M153 Common Remotely Operated Weapon Station (CROWS)

Description

- A remotely operated weapon station that allows for day and night operations while under armor and provides precision fire while stationary and on the move.

Capability

- Weapon Suite: MK19, M2, M240, M249
- Four-Axis Targeting System, Three-Axis Vector Stabilization
- Color Day Camera, Thermal, Laser Range Finder
- Auto Scan and Target Reference Point Capability
- Auto Lead /Auto Focus /Auto Tracker

Status

- Achieved ACAT 1C status
- Basis of Issue Plan approved for 11,269 systems (Army and SOCOM)
- Army has taken delivery of over 10,000 systems
- Full and open competition underway for production, sustainment and engineering services
- Contract award anticipated in September 2012
- Planning retrograde of CROWS equipment in Kuwait and Afghanistan

M153 CROWS Fixed Site

Description

- Fixed site mounting kit includes spider stand and base platform, installation hardware, rechargeable battery enclosure with 120VAC charging system, military generator set, operator's station, system cabling, and required manuals

Capability

- Provides ability to monitor an area and target a threat remotely from inside a protected structure
- Supports MK19, M2, M240, M249
- Slew to cue capable
- Three configurations available
- Can be mounted on various surfaces

Status

- First system fielded in JAN 2012
- Production and fielding through 2QFY13

CROWS Escalation of Force (EOF) Kit

Description

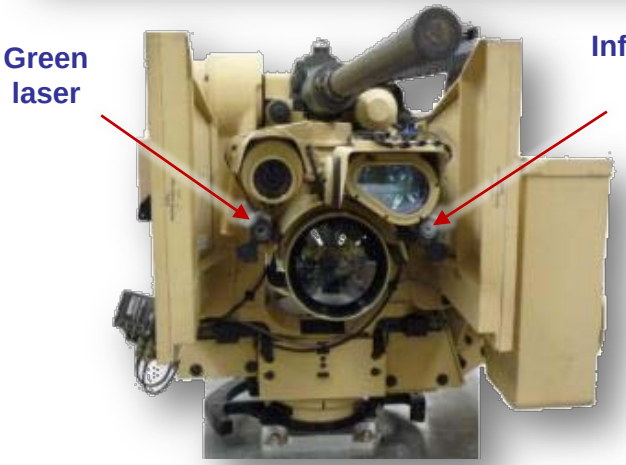
- Green laser provides Soldiers capability to warn and hail
- Give Soldiers an alternative to deadly force while protected inside the armored vehicle
- System is easily expandable to include additional capabilities

Capabilities

- Green laser
- Infrared marker
- Ruggedized for Crew Served Weapons
- Mounted on the weapon system for immediate transition to lethal force if needed

Status

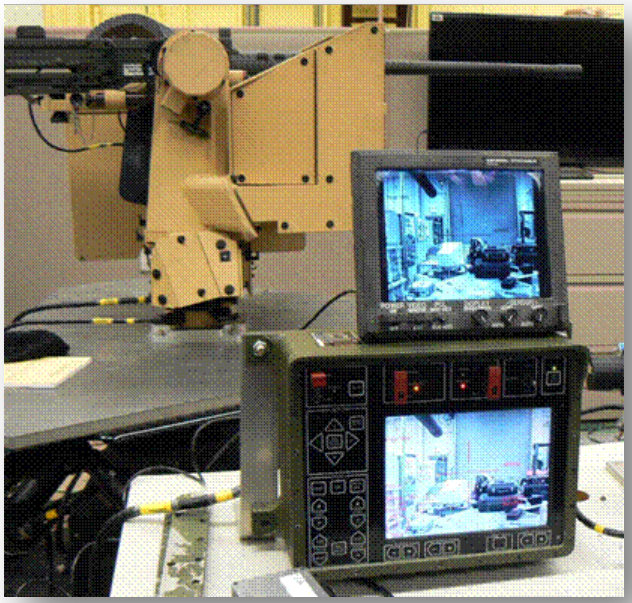
- Fielding to OEF in response to ONS



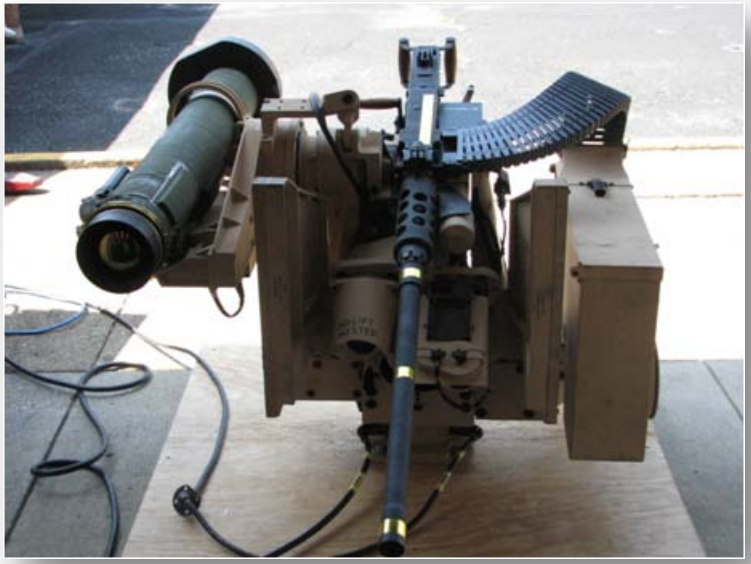
Army Greatest Invention 2010

Future Enhancements of Interest

Secondary Screen



Integrated Javelin Capability



Other Enhancements:

- Enhancement Sensor Capability
- Integrated Slew to Cue
- Additional Weapon Integrations

Integrated 360 Degree Situational Awareness

Mounted Machine Gun Optic (MMO)

Description

- MMO may be employed using Mil-Std-1913 Picatinny rails, with the M2/M2A1, M240B/H, Mk19, MK47 Striker Automatic Grenade Launcher

Capability

- Provide the Soldier increased accuracy and identification at range by equipping the medium and heavy machinegun an optic with selectable magnification. Retains the capability of short range, transition fire.
- Seeking capability to ID targets at maximum ranges for machine guns

Status

- CDD currently in staffing

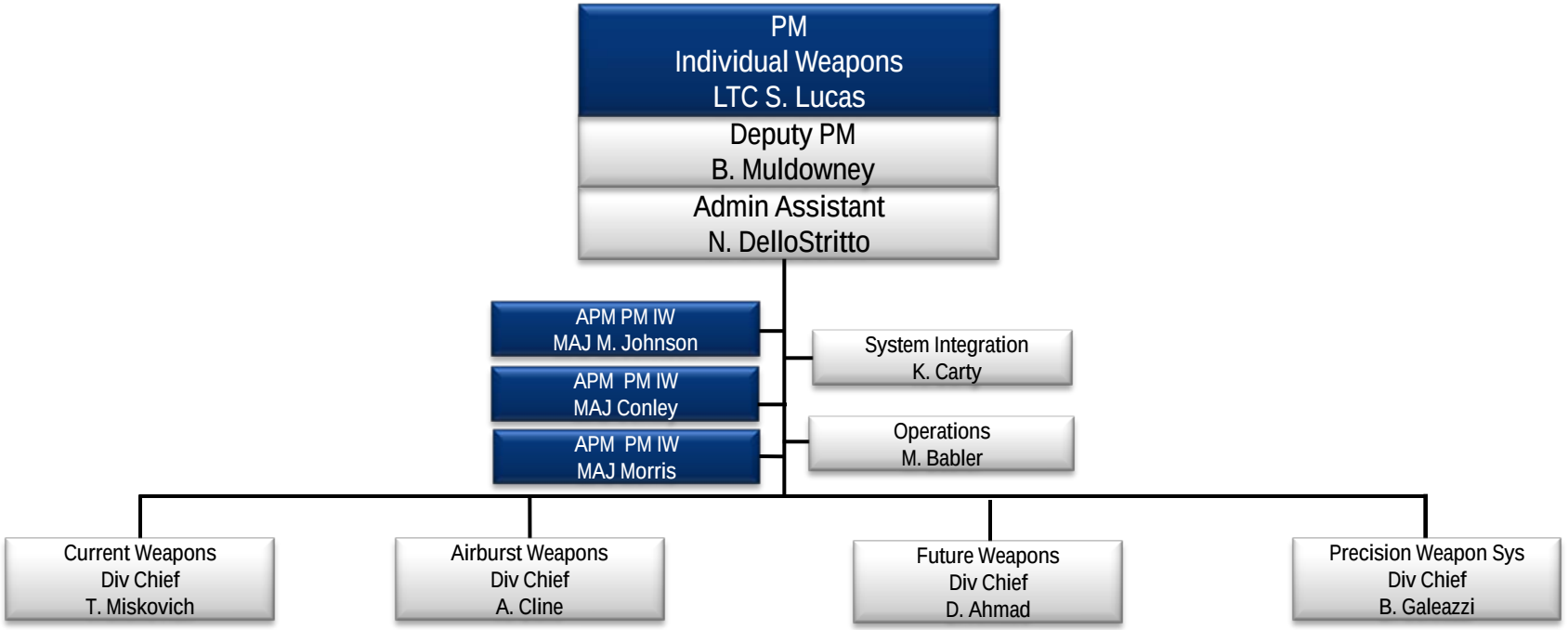
Questions & Answers

PM Individual Weapons
NDIA Update

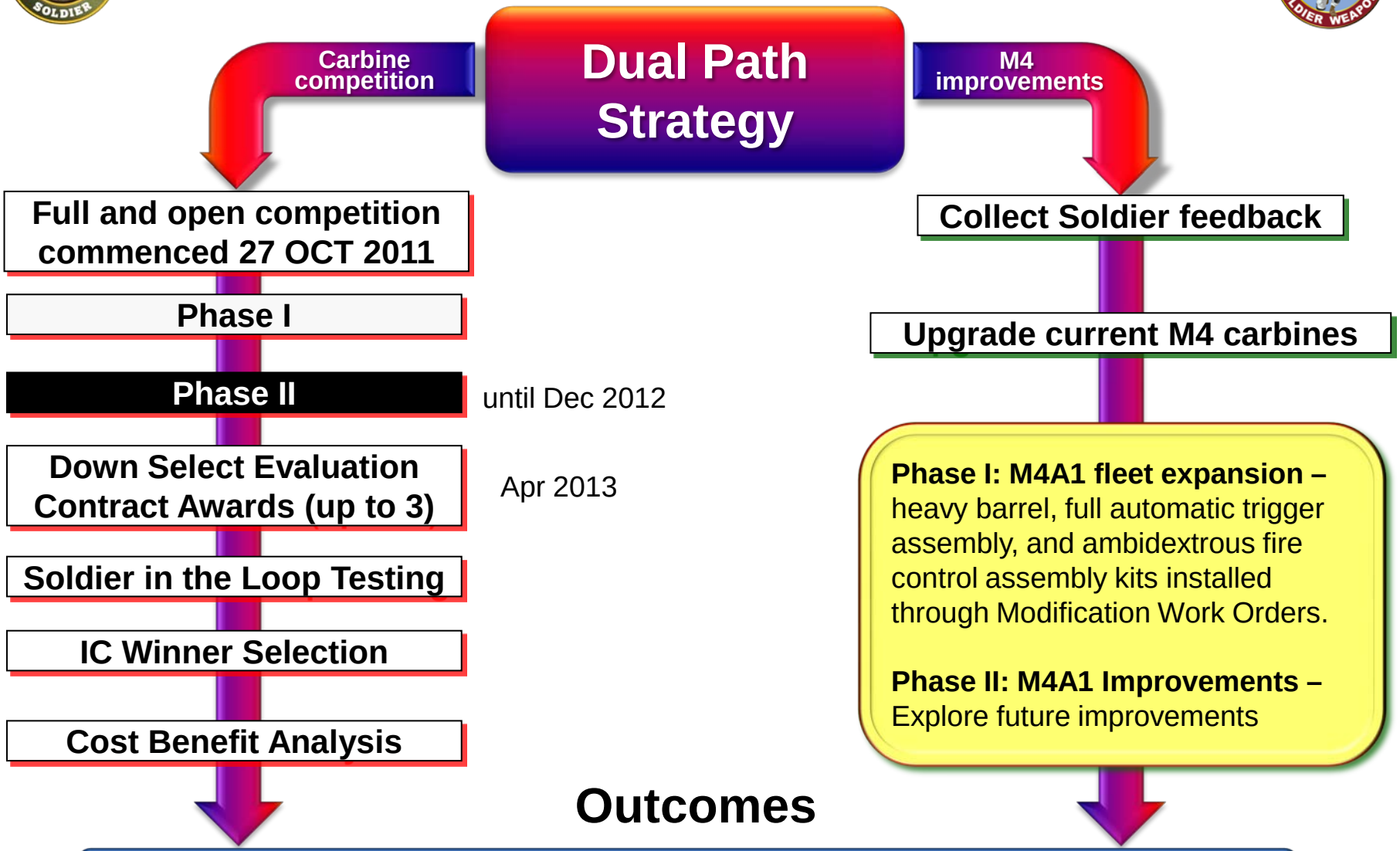
LTC Shawn Lucas

May 2012

Product Manager Individual Weapons



Carbine Dual Path Strategy



M4 Carbine
Product Improvement Program

The M4 PIP consists of five efforts in two phases:

Phase I: convert carbine fleet to improved M4A1s

1. **Contract Mod:** Mod previous contract to manufacture M4A1 configuration (9,582 systems) **COMPLETE**
2. **New M4A1 Contract:** Competitive contract for 24K new Army M4A1s (Awarded March. First Delivery March 2013) **COMPLETE**
3. **Conversion Kits:** Five competitive contracts to build component kits to upgrade M4s to M4A1s through Modification Work Orders
   4 of 5 issued (M4A1 Heavy Barrel and Bolt Assembly award is pending)
   All five contracting actions will be solicited again for additional quantities
   SARET teams begin upgrading M4s in summer 2013

Phase II: Explore feasibility of further improvements to M4A1s

4. **Bolt:** Bolt and Bolt carrier group competition (**CANCELLED**)
5. **Rail:** Forward rail competition (Bid Sample Test ongoing)

XM25 Individual Semi-Automatic Airburst System (ISAAS)

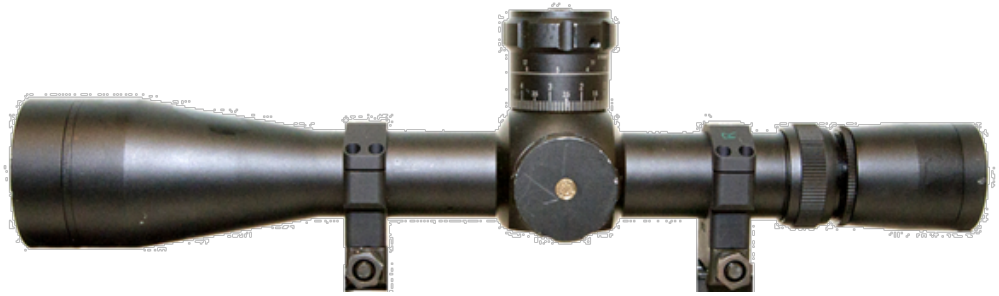
Status

- Contractor developmental testing at APG / Contractor facility: Jan 12 – present
- Forward Operational Assessment involving early XM25 prototypes is complete
- Critical Design Review anticipated in June/July 2012
- Pursuing production and testing of 36-gun battalion set featuring the improved design for another Forward Operational Assessment in 2013

EMD Configuration

Relevant User Feedback

Optics & Fire Control Efforts



Capability & Desired Effects

- **Specific system requirements are generated by the desired effects:**
  - **Close Range Effects:** Breaching and close quarters battle
  - **Mid Range Effects:** Engagement with individual combat rifle out to 600m
  - **Precision Effects:** Engagement with precision weapons beyond 600m
  - **Volume Effects:** Direct fire area affect weapon system (machine guns)
  - **Indirect Effects:** Indirect fire area affect weapon system (GL, airburst)

Optics & Fire Control Technology Advancement

- **Three Generations of Military Grade Optics**
  - **1st Generation: Traditional fixed power optics (i.e. M68, M150)**
  - **2nd Generation: Variable power optics (i.e. modern sniper rifle optics)**
  - **3rd Generation: Direct View Optics with modular or fully integrated digital display overlays (i.e. XM25)**
    - **No loss of functionality in a power deprived environment**
    - **Form Factor determination TBD**

Army Intent: Move towards 3rd Generation optics in the intermediate future to achieve increased $P_{(h)}$ at extended range

Squad Common Optic
Initial Concept

- **Variable magnification optic for use on the M4/M16, M249, and M240L**
- **Requirements Document currently in world-wide staffing**
- **Increment I: 2nd Generation Optic**
  - **Variable Magnification, 1-6x (T), 1-8x (O)**
    - **Unity power desired for Close Range Effects**
    - **High magnification desired for increased P(id)/P(h)**
  - **Reduced SWaP: ≤ 1.5 lbs**
  - **Delivery timeframe - late 2015**

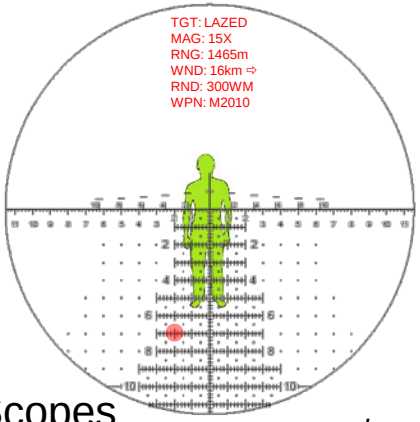
- **Increment II: 3rd Generation Optic**
  - **Retains optical performance characteristics of Increment I**
  - **Integrated Display overlay**
    - **Second focal plane display**
    - **Display range to target in scope**
    - **Continuous operation for 72 hour mission on standard batteries (i.e., AA, CR123)**
  - **Interfaced Laser Range Finder**
    - **Able to accept input from external laser range finder**

- **Increment III: 3rd Generation Optic**
  - **Retains optical performance and display of Increment II**
  - **Added ballistic computer and ambient sensors**
    - **Utilizes range and ambient conditions to generate targeting offsets**
    - **Displays corrected aim point to user using in scope display**

Sniper Optics & Fire Control

- Sniper Mission:
  - Support Combat Operations by Delivering Precise Long-Range Fire on Select Targets
  - Collect & report battlefield information (RECON)

- Greater Effectiveness Requires:
  - Rapid Target Acquisition & Precise Aiming Calculations
    - Automated (Full Solution) Fire Control Systems
  - Collaborative, Rapid Information Exchange
    - Sniper ↔ Spotter
    - Sniper ↔ Common Operating Picture
    - Networked Intel & Mission Information Sharing

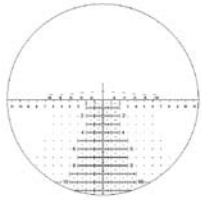


example

- Desired Objective:
  - Exploit & Leverage Enabling Technologies To Develop, Acquire & Field Integrated Sniper Fire Control Rifle & Spotting Scopes

Sniper Rifle Optics & Fire Control

- Direct View Optic (DVO) Sniper Rifle Scopes (Near Term)
  - Strive For **Commonality Across Platforms** (Same Scope & Reticle)
  - Variable Magnification: 1-25X
  - First Focal Plane (Scalable) Reticle
  - Rapid Ranging (Stadia Metric) Reticle
  - Removable LFU & Anti-Reflection Device
  - Used with Clip-On Sniper Night Sight (i.e. AN/PVS-30)
  - Embedded OR Clip-On Digital Display Allows:
    - **Computed Fire Control (Disturbed Reticle & Target Info) To Be Displayed**
  - Digital Information Link w/ Spotter Scope To Exchange/Collaborate Target Info



- Advanced (Full-Solution) Fire Control (Future: 5+ years)
  - Laser Rangefinder, Embedded Environmental & Platform Orientation Sensors
  - Embedded Ballistic Calculations With Operator Truing Capability
  - Integrated or Modular Day/Night Fuzed Sensors (I^2/FLIR/Fused Sensor)
  - Instantaneous Muzzle Velocity Determination (for Enhanced Ballistics & Safety)
  - Embedded Round Counters for Maintenance, Diagnostics/Prognostics)
  - Maintenance & Shot Database (Digital Maintenance & DOPE Logbook)
  - Integrated Digital Communications Link & Info Exchange with Spotting Scope
  - Moving Target Tracking (Objective)

Fire Control Technical Investments

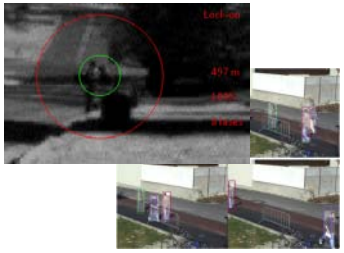
Direct View Optic with Digital Overlay

A. Provides range, wind, and atmospherics to shooter
B. Provides suggested adjusted point of aim
C. Provides a traditional, hard reticle for zero power environment

Associated Work in Government / Industry

Small Arms Weapons and Fire Control TECD

- Develop a stand alone advanced fire control system
- Includes:
  - DVO with integrated Display
  - Networking capability
  - Self-steering laser range finder



Integrated Ballistic Reticle System

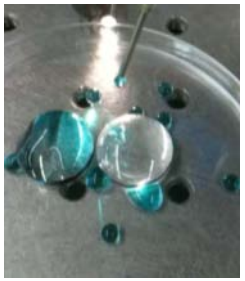
- Develop an advanced DVO with digital overlay for sniper applications
- Includes:
  - High mag optic with integrated Display
  - Integrated ballistic computer and environmental sensors
  - Improved accuracy LRF using enhanced beam shaping

Polymer Lenses

- Develop an optic using polymer lenses in lieu of moving telefocal group
- Reduces SWAP by using biomimicking lenses
- Prototype built and demonstrated, focused on hardening.

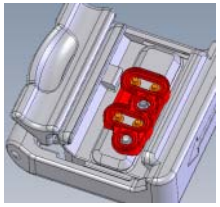
Lens Coatings

- Develop water-proof and damage resistant coatings for optical elements
- Demonstrated method for coating by which water and dirt literally bounce off lens, lens withstands extreme abrasion
- Currently exploring options for field applications



Powered Rail

- Develop a rail system to provide power to the accessories, thereby reducing SWAP and total battery usage
- Prototype system working, tested by NATO, and used as the basis for the NATO Powered Rail Standard



Small Business Initiated Research

- Miniaturized display technology for reduced SWAP
- Down-range wind sense technology

Questions & Answers