PEO CS&CSS

2011 Advanced Planning Brief to Industry

MR. KEVIN M. FAHEY
Program Executive Officer
Combat Support & Combat Service Support

MR. THOMAS H. BAGWELL, JR.
Deputy Program Executive Officer
Combat Support & Combat Service Support

COL ROBERT W. SCHUMITZ
Deputy Program Executive Officer (AL&T)
Combat Support & Combat Service Support
<table>
<thead>
<tr>
<th>1. REPORT DATE</th>
<th>2. REPORT TYPE</th>
<th>3. DATES COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 OCT 2011</td>
<td></td>
<td>00-00-2011 to 00-00-2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. TITLE AND SUBTITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Advanced Planning Brief To Industry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. AUTHOR(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEO CS&amp;CSS, SFAE-CSS, 6501 E 11 Mile Rd., Warren, MI, 48397</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. PERFORMING ORGANIZATION REPORT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. DISTRIBUTION/AVAILABILITY STATEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved for public release; distribution unlimited</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. SUBJECT TERMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. SECURITY CLASSIFICATION OF:</th>
<th>17. LIMITATION OF ABSTRACT</th>
<th>18. NUMBER OF PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. REPORT unclassified</td>
<td>Same as Report (SAR)</td>
<td>54</td>
</tr>
<tr>
<td>b. ABSTRACT unclassified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. THIS PAGE unclassified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19a. NAME OF RESPONSIBLE PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Agenda

- PEO CS&CSS Welcome/Introduction
- Project Manager Force Projection
  - COL Robert Eric Fletcher
- Project Manager Joint Combat Support Systems
  - Mr. Dennis Mazurek, Deputy Project Manager
- Project Manager Mine Resistant Ambush Protected Vehicle (MRAP)
  - Mr. Carl D. Owens
- Project Manager Tactical Vehicles
  - COL David Bassett
- Combat Support & Combat Service Support (CS&CSS) Readiness & Sustainment (R&S)
  - Mr. Dan Lorentz, Director, Deployment Equipment Product Support Integration Directorate
Mission & Vision

Equip Our Joint Warfighters with the World’s Best Capability... Today and Tomorrow... Using the DoD’s Best Acquisition Workforce

First to the Field... Last to Leave

Conducts Life Cycle Management for the Army’s Combat Support and Combat Service Support (CS&CSS) Portfolio; Supporting the Joint Warfighter Throughout the ARFORGEN Cycle by Developing, Producing, Fielding, Sustaining, Resetting and Integrating New Technologies Using a System of Systems Approach
# PEO CS&CSS Portfolio

## Force Projection
- **Bridging**
  - Bridges / Bridge Erection Boat
  - Bridge Transformers
  - M9 Armored Combat Earthmover/Assault Breacher

## Combat Engineer/Material Handling Equipment
- **Container Handling Equipment**
- **Loaders**
- **Cranes**
- **Dozers**
- **Excavators**

## Force Sustainment Systems
- **Cargo Airdrop Systems**
- **Combat Feeding Systems**
- **Field Service Systems**
- **Force Provider & Base Camps**
- **Shelter Systems & Heaters**
- **Mortuary Affairs Equipment**

## Petroleum & Water Systems
- **Fueling Systems**
- **Water Systems**

## Army Watercraft Systems
- **Causeway Systems**
- **Barge Derricks**
- **Tugs**
- **High Speed Vessels**
- **Lighterage**

## Joint Combat Support Systems
### Sets, Kits, Outfits & Tools
- **Sets, Kits & Outfits**
- **Engineer Combat Support Eq**
- **Diving Equipment**
- **Shelter Mounted Sets, Kits & Outfits**
- **Shop Set Equipment**

### Test, Measurement, & Diagnostic Equipment
- **Integrated Family of Test Equipment (IFTE) At Platform Test Systems**
- **Common Embedded Diag.**
- **Calibration Sets (CALSETS)**
- **IFTE Off Platform Automatic Test Systems**
- **General Purpose Electronic Test Equipment (GPETE)**
- **Maintenance Support Device (MSD-V3)**
- **Next Generation Automatic Test Station (NGATS)**

## Mine Resistant Ambush Protected Vehicles
### Assured Mobility Systems (Army Program)
- **Buffalo (MPCV)**
- **JERRV/Cougar**
- **Husky (Vehicle Mounted Mine Detector (VMMD))**
- **RG31**
- **RG-33/Panther (MMPV)**

### MRAP All Terrain Vehicle (Joint Program)
- **M-ATV**

### MRAP Vehicle Systems (Joint Program)
- **Navistar MaxxPro**
- **GDSL RG-31**
- **BAE-TVCAiman**
- **BAE RG-33 SOCOM**
- **BAE RG-33 SOCOM AUV**
- **BAE HAGA**
- **BAE RG-33L**
- **FPI Cougar (Cat I & II)**
- **FPI Buffalo**

## Joint Logistics & Sustainment (Joint Program)
- **MRAP/M-ATV Logistics**

## Tactical Vehicles
### Joint Light Tactical Vehicles
- **Technology Development phase**
- **3 prototype contracts**
- **Engineering & Manufacturing Development (EMD) Phase**
- **MS B-2011**

### Light Tactical Vehicles
- **HMMWV Family of Vehicles**
- **UAH Safety Enhancements**
- **HEAT Trainer**

### Medium Tactical Vehicles
- **Family of Medium Tactical Vehicles (FMTV)**
- **Tractor Trailer**

### Heavy Tactical Vehicles
- **Heavy Expanded Mobility Tactical Truck (HEMTT)**
- **M915 Family of Vehicles & Trailers**
- **Heavy Equipment Transport (HETS)**
- **Container Handling Unit (CHU)**
- **Palletized Load System (PLS)**
- **Joint Recovery And Distribution System (JRADS)**
FY11 Accomplishments

- Managed a portfolio of over 350 systems (4 ACAT I)
- Produced approximately 28,042 tactical vehicles
- Fielded 24,365 systems
- Approved 156 Milestone Decision Actions
  - Including 19 urgent materiel releases to the war
- Provided responsive support to the Theater and Warfighter
  - Maintained over 90% operational readiness rate
- Continued fielding of safety and survivability improvements
  - 2650 MATV underbody improvement kits for OEF,
  - 1,140 EFP kits produced for Caiman vehicles with over 798 installed in theater,
  - RPG Defeat nets and bar armor for RG-31s,
  - Armor kits for FMTVs and HEMTTs.
Current Thrusts/Focus

- Support our soldiers in harms way
- Fleet/Portfolio Management
- Better Buying Power Initiatives
- Investment/Modernization and Sustainment Strategy
- Maintain competition to the maximum extent possible
- Assess the health of the industrial base
- Balance long-term goals and objectives and near-term challenges
- Serve as the focal point for life cycle management of our assigned systems
- Implement Continuous Process Improvements
  - Make Fact based Decisions
  - Apply Good Systems Engineering and Lean/Six Sigma
  - Create a disciplined approached culture and workforce
OSD Better Buying Power Initiatives

Dr. Carter Memo dated 3 Nov 10 focused on 5 Key Areas:

- Targeting Affordability and Controlling Cost Growth
- Promoting Real Competition
- Incentivizing Productivity & Innovation in Industry
- Reducing Non-Productive Process and Bureaucracy
- Improving Trade Craft in Acquisitions of Services
OSD Better Buying Power Initiatives

- **Target Affordability and Control Cost Growth**
  - Mandate affordability as a requirement
  - At Milestone A set affordability target as a Key Performance Parameter
  - At Milestone B establish engineering trades showing how each key design feature affects the target cost
  - Drive productivity growth through Will Cost/Should Cost Management
  - Eliminate redundancy within warfighter portfolios
  - Make production rates economical and hold them stable
  - Set shorter program timelines and manage to them

- **Incentivize Productivity & Innovation in Industry**
  - Reward contractors for successful supply chain and indirect expense management
  - Increase the use of FPIF contract type where appropriate using a 50/50 share line and 120 percent ceiling as a point of departure
  - Adjust progress payments to incentivize performance
  - Extend the Navy’s Preferred Supplier Program to a DoD-wide Pilot
  - Reinvigorate industry’s independent research and development and protect the defense technology base

- **Promote Real Competition**
  - Present a competitive strategy at each program milestone
  - Remove obstacles to competition
    - Allow reasonable time to bid
    - Require non-certified cost and pricing data on single offers
    - Require open system architectures and set rules for acquisition of technical data rights
  - Increase dynamic small business role in defense marketplace competition

- **Improve Tradecraft in Services Acquisition**
  - Create a senior manager for acquisition of services in each component, following the Air Force’s example
  - Adopt uniform taxonomy for different types of services
  - Address causes of poor tradecraft in services acquisition
    - Assist users of services to define requirements and prevent creep via requirements templates
    - Assist users of services to conduct market research to support competition and pricing
    - Enhance competition by requiring more frequent re-compete of knowledge-based services
    - Limit the use of time and materials and award fee contracts for services
    - Require that services contracts exceeding $1B contain cost efficiency objectives
  - Increase small business participation in providing services

- **Reduce Non-Productive Processes and Bureaucracy**
  - Reduce the number of OSD-level reviews to those necessary to support major investment decisions or to uncover and respond to significant program execution issues
  - Eliminate low-value-added statutory processes
  - Reduce by half the volume and cost of internal and congressional reports
  - Reduce non-value-added overhead imposed on industry
  - Align DCMA and DCAA processes to ensure work is complementary
  - Increase use of Forward Pricing Rate Recommendations (FPRRs) to reduce administrative costs

- **Increase small business participation in providing services**
PEO CS&CSS Summary

- We are living in demanding times – doing the same with less
- Competing national priorities will force tough investment decisions
- Making significant progress in fleet management
- Seeking bold innovative solutions to ever evolving threats to U.S. Forces across the globe.
- Health and responsiveness of industrial base will be a focus
- Primary goal of ... Equipping Our Joint Warfighters with the World’s Best Capability.

Force Projection

Mission

Providing the Warfighter with the most technologically-advanced, proven equipment to enable and support the projection of Forces worldwide.

Other Significant Procurement Efforts

- Modular Fuel Systems (MFS)
- JAB
- Fort Devens SIL
- 5K Fork Lift

Project Manager
COL R. Eric Fletcher

Deputy PM Acquisition: Mr. Steve Roberts

Product Managers

- Bridging
  - Mr. Donald Paskulovich - Acting
- Combat Engineering, Material Handling Equipment
  - LTC Nelson Kerley
- Petroleum & Water Systems
  - LTC Dariel Mayfield
- Force Sustainment Systems
  - LTC James Tuten

Product Directors

- Army Watercraft Systems
  - Ms. Shannon Tighe
PD Army Watercraft Systems
115 Ton Barge Derrick (BD)
Landing Craft Mechanized (LCM 8) Mod II
Landing Craft Utility (LCU) 2000
Large Tug (LT) 128'
Logistics Support Vessel (LSV)
Small Tug 900 (ST900)
Roll-on/Roll-off Discharge Facility (RRDF)
Floating Causeway (FC)
Modular Warping Tug (MWT)
Causeway Ferry (CF)
Joint High Speed Vessel (JHSV) - ACAT ID
Joint Enabling Theatre Access Seaport of Debarkation ACTD

PM Combat Engineer/Material Handling Equipment Systems
2.5 Cubic Yard Scoop Loaders
4.5 & 5.0 Cubic Yard Scoop Loaders
5K RTFL
Aviation Cranes (7.5T & SCAMP)
Family of Cranes (FOC-25T/50T ONS)
Add on Armor Program
Airborne Scraper & Water Distributor
All Terrain Crane (ATEC) & Pile Driving System
All Terrain Lifter, Army System (ATLAS) I & II
Asphalt Mixing Plant (AMP)
Backhoe Loader (BHL)
CE SLEP (Dozers, Graders, Heavy Scrapers)
Engineer Mission Modules – Water Distributor (EMM-WD)
Family of Dozers (FOD-T5 & T9)
Grader, Motorized, Heavy
High Mobility Engineer Excavator Type I (HMEE I)
Hydraulic Excavator Type I (HYEX)
Interim High Mobility Eng. Excavator (IHMEE)
Enhanced Rapid Airfield Construction Capability (ERACC)
Paving Machine, Bituminous
Rough Terrain Container Crane (RTCC)
Rough Terrain Container Handler (RTCH)
Skid Steer Loaders (SSL) Type I, II, III
TPE Refurbishment Program
Well Drilling Rig

PM Force Sustainment Systems
Advanced Low Velocity Airdrop System (ALVADS)
Army Space Heater (ASH)
Assault Kitchen (AK)
Authorized Stockage List Mobility System (ASLMS)
Battlefield 12-Head Shower
Containerized Bath Laundry (CBL)
Containerized Kitchen (CK)
DoD Combat Field Feeding Program (6.4/6.5)
Dual Row Airdrop System (DRAS)
Enhanced Container Delivery System (ECDS)
Extraction Parachute Jettison System (EPJS)
Family of Cargo Bed Covers (CBCs)
Food Sanitation Center (FSC)
Force Provider
Chaplaincy Logistical Support Package (CLSP)
Containerized Chapel (GC)
Containerized Latrine System (CLS)
Containerized Self-Serve Laundry (CSSL)
Containerized Shower System (CSS)
Electronic Shop Van (ESV)
Joint Precision-Guided Aerial Delivery Sys (JPADS)
Kitchen, Co. Level, Fld. Feeding - Enhanced (KCLFF-E)
Large Capacity Field Heater (LCFH)
Laundry Advanced System (LADS)
Low Cost Aerial Delivery System (LCADS)
Mobile Integrated Remains Collection System (MIRCS)
Mobile Kitchen Trailer-Improvement (MKT-I)
Modern Burner Unit (MBU)
Modular Command Post System
Modular General Purpose Tent System (MGPTS)
Mounted Water Ration Heater (MWRH)
Multi-Temp. Refrigerated Container System (MTRCS)
Refrigerated Container System (RCS)
Small Unit Shower (SUS)
Soldier Crew Tent (SCT)
Space Heater Arctic (SHA)
Space Heater Convective (SHC) 35K BTU
Space Heater Convective (SHC) 60K BTU
Space Heater Convective (SHC) 120K BTU
Space Heater: Large, Medium, Small
Tent Extendable Modular PERSONnel (TEMPER)
Thermoelectric Fan (TEF)
Ultra Lightweight Camouflage Net System (ULCANS)

PM Petroleum & Water Systems
Advanced Aviation Forward Area Refueling System (AAFARS)
Assault Hoseline System (AHS)
Forward Area Water Point Supply System (FAWPSS)
60K Fuel System Supply Point (FSSP)
120K Fuel System Supply Point (FSSP)
300K Fuel System Supply Point (FSSP)
800K Fuel System Supply Point (FSSP)
LHS Compatible Water Tank Rack (Hippo)
Modular Fuel System (MFS)
Lightweight Water Purifier (LWP)
Petroleum Quality Analysis System-Enhanced (PQAS-E)
Petroleum Test Kit (PTK)
Forward Area Refueling Equipment (FARE)
Tactical Water Purification System (TWPS) 1500 GPH
Unit Water Pod System (Camel)

PM Bridging
Assault Breacher Vehicle (ABV)
Armored Vehicle Launched Bridge (AVLB)
Bridge Adapter Pallet (BAP)
Bridge Erection Boat (BEB)
Common Bridge Transporter (CBT)
Dry Support Bridge (DSB)
Joint Assault Bridge (JAB)
Improved Boat Cradle (IBC)
Improved Ribbon Bridge (IRB) Bays
M9 Armored Combat Earthmover (ACE)
M9 Armored Combat Earthmover (ACE)
Linked Bridge (LKB)
Line of Communication Bridge (LOCB)
Medium Girder Bridge (MGB)
Rapidly Emplaced Bridging System (REBS)
Standard Ribbon Bridge (SRB)
Army Watercraft Current Fleet

Lighters

119 Total Platforms

- Logistics Support Vessel (LSV)
- Landing Craft Mechanized (LCM-8) MOD I and MOD II

Floating Craft

- Barge Derrick Crane (BD 115)
- Small Tug (ST-900)
- Modular Causeway System (MCS)
- Large Tug (LT-800)
Army Watercraft Systems

• Lifecycle Challenges:
  • Integration of service life extension program efforts for landing craft
  • Logistics sustainment of obsolescent items across a global fleet
  • Two-level maintenance Technical Manual (TM) development and possible conversion of more TMs to Inter-active Electronic Technical Manual (IETM) format

• Opportunities for Industry
  • Major Service Life Extension Program (SLEP) planned for execution FY12-20.
  • Product improvement and technical insertions planned for FY12-17.
  • Potential Performance Based Logistics (PBL) opportunities.
  • Sustain C4I Suite.
Combat Engineer Systems

- HMEE-I
- Skid Steer Loader
- Heavy Grader
- Lt Dozer (T-5)

Material Handling Equipment Systems

- All Terrain Lifter Army System (ATLAS) II w/ Armor
- Rough Terrain Container Handler (RTCH)

28 OCT 2011

PEO CS&CSS - APBI
Combat Engineer &
Material Handling Equipment

• Lifecycle Challenges:
  • Modify commercial systems to meet MIL-STD 209 tie-down provisions and C130 transportability.
  • Provide propulsion systems to meet requirement to burn JP-8 (high sulfur) fuel with the migration to TIER 4a and TIER 4b engines.
  • Apply simulators and training solutions to improve institution and unit-level training.
  • Incorporating armor into commercial systems and minimizing the affect it has on the basic platform while protecting soldiers.
  • Development of suitable and effective maintenance technical manuals at reasonable cost.

• Opportunities for Industry
  • Upcoming acquisition of a new fleet of heavy cranes (50T lift class)
  • Engineer Rapid Airfield Construction System. (1) blade leveling; (2) mobile lab; (3) mixer tiller to be procured competitively.
  • Route Remediation Systems (1) portable concrete mixer; (2) concrete saw; (3) portable asphalt patcher; (4) wide area mower; (5) machine powered mower; (6) dust palliative dispenser.
  • Vibratory plate compactor.
  • Additional SLEP programs for Dual Steel Wheel Rollers, Vibratory Rollers and High Speed Compactor are planned.
Petroleum & Water Systems

Petroleum Systems
- Tankrack Module (TRM)
- Pump Rack Module (PRM) and Tankrack Module (TRM)
- Petroleum Quality Analysis System-Enhanced (PQAS-E)
- 800K Fuel System Supply Point (FSSP)

Water Systems
- Expeditionary Water Packaging System (EWPS)
- 1500 Gallon Per Hour (GPH) Tactical Water Purification System (TWPS)
- Water Pod System (Camel II)
- Load Handling Compatible Water Tank Rack (Hippo)
• Lifecycle Challenges:
  • Advanced Pre-Treatment for Reverse Osmosis Water Purification Systems.
  • Develop High Pressure Conduit for Distribution Systems (700 – 740 Working PSI) and High Pressure (700 – 740 Working PSI) Lay-Flat Hose for Fluid Transfer.
  • Effect of Dwindling Budgets on Contractor Interest in PM PAWS Systems.

• Opportunities for Industry
  • Competitive Procurements of Systems (Unit Water Pod System (Camel II), Modular Fuel System (MFS), and Load Handling System Compatible Water Tank Rack (Hippo)).
  • RDT&E Partnerships to Develop Future Systems to Meet Capabilities Gaps.
  • RESET of Systems Beyond Depot Capabilities.
Bridging Systems

Wolverine Heavy Assault Bridge

Joint Assault Bridge

Armored Vehicle Launch Bridge (L)

Rapidly Emplaced Bridge

Assault Breacher Vehicle

Armored Combat Earthmover

Line of Communication Bridge

Medium Girder Bridge (L)

Bailey Bridge (L)

Dry Support Bridge

Common Bridge Transporter

Bridge Erection Boat (L)

Improved Ribbon Bridge

Standard Ribbon Bridge (L)

(L) Legacy Systems
Bridging Systems

• Lifecycle Challenges:
  • Methods/technologies for reduced weight and increased load bearing capability of bridge structure.
  • Methods/technologies for monitoring the health of bridging (Service life monitoring) and extend the useful life of bridging systems.
  • Methods/technologies for improved performance of Bridge Erection Boat (BEB) engines with JP8.
  • Methods/technologies for improved performance of Heavy Assault Bridge/Launch system.
  • Supply Cycle – Spare Parts availability/turn around time for low density systems.

• Opportunities for Industry:
  • Introduce technical innovations and advanced armor technology into existing and next generation bridging systems to reduce weight and increase performance.

• Future Programs:
  ▪ Multi-functional or Multi-purpose bridge system encompassing all three gap crossing capabilities: Assault, Tactical, and Line of Communication Bridging
  ▪ Light Assault Gap Crossing consisting of three systems: Footbridge, IBCT Assault Bridging, and Assault Rafting
  ▪ Joint Assault Bridge
Force Sustainment Systems

Joint Precision Airdrop System – 2K

Shelter Systems

Containerized Kitchen

Assault Kitchen

Low-Cost Airdrop System / Low-Cost Low Altitude

Force Provider

Mobile Integrated Remains Collection System
Force Sustainment Systems

Fort Devens Base Camp Integration Lab
Force Sustainment Systems

• Lifecycle Challenges:
  • Develop and integrate low altitude aerial delivery technologies for low velocity platform airdrop to improve reliability and survivability, and reduce rigging/deregging time.
  • Develop method to safely and efficiently manage, handle, treat and dispose of the waste stream (liquid and solid).
  • Develop advanced insulation and shading capabilities and thermally efficient fabric shelters to reduce heating and cooling demands on expeditionary shelters

• Opportunities for Industry:
  • Advanced Insulation, Shading and Environmental Control Capabilities to Reduce Heating and Cooling demands on Expeditionary Shelters (FY12)
  • Smart Power Distribution and Alternative Renewable Power Sources for Expeditionary Base Camps (FY1)
Joint Combat Support Systems

Mission

- Develop and Acquire Joint Combat Support Systems for Expeditionary Forces

Vision

- Support the Joint Warfighter across the spectrum of conflict

Project Manager
COL William Boruff

Deputy PM Acquisition: Mr. Dennis Mazurek

Product Managers

- Armored Security Vehicles
  - LTC Steven T. Wall
- Sets, Kits, Outfits and Tools
  - LTC Eric C. Rannow

Product Directors

- Non Standard Vehicles
  - LTC Graham J. Compton
- Test, Measurement & Diagnostic Equipment
  - Mr. George J. Mitchell
- Horizontal Technology Integration
  - Mr. Fred A. Williams
Joint Combat Support Systems ~ Products and Process

Product Manager
Armored Security Vehicle (PdM ASV)
Mission: Develop, produce, field and sustain the Armored Security Vehicle to an Expeditionary Force.

Product Manager
Sets, Kits, Outfits and Tools (PdM SKOT)
Mission: To provide the right SKOs and tools that are high quality, durable, reliable, modernized, and deployable to the soldiers at the right time, in the right place, at the right price.

Product Director
Non Standard Vehicles (PdD NSV)
Mission: PD NSVs mission is to provide Life-Cycle Management of Light Tactical Vehicles, Medium Tactical Vehicles, SUVs, and Bus fleets to the Afghan National Security Forces (ANSF).

Product Director
Test, Measurement & Diagnostic Equipment (PdD TMDE)
Mission: Manage the acquisition and fielding of General Purpose, Automatic and Manual Test, Measurement, and Diagnostic Equipment, and Calibration Standards while providing superior combat systems support materiel to accomplish its maintenance during peace and war.

Product Director
Horizontal Technology Integration (PdD HTI)
Mission: Conduct periodic technology demonstrations and relevant special projects to identify industry’s investments in advanced component technologies for potential improvement of joint ground systems.

Joint Ground Systems Enterprise Market Investigation Process (EMIP)
The joint ground systems Enterprise Market Investigation Process (EMIP) is a multi-phased and ongoing type of market research sponsored by the Program Executive Office Combat Support & Combat Service Support.

Market research – not source selection
Product Director, Non-Standard Vehicle (PdD NSV)

- Lifecycle Challenges:
  - Need to address disparate approach to Maintenance by Afghanistan National Security Forces (ANSF); ANA (Army) is organic centric; ANP (Police) is CLS centric
  - Need to address training – Training the ANSF in Operator and Maintenance tasks is proving to be challenging due to their low literacy rate and their rapid personnel turnover (two-years)
  - Need to address immature Supply Chain Management System
  - Need to mitigate pilferage which is compromising vehicle readiness and accountability

- Opportunities for Industry:
  - Development of simplified Operator and Maintenance Manuals for ANSF. Focusing on tailored, highly graphic manuals.
  - Integration in ANSF Supply Chain Management solutions, to include RECAP facility and CLS
  - Contractor personnel for PD NSV Forward positions.
Product Manager, Sets, Kits, Outfits and Tools (PdM SKOT)

• Lifecycle Challenges:
  • Need to continue developing Fire Suppression Refill and Fire Protection Equipment capabilities to support soldiers and vehicles in all environments
  • Need to support all services through the development of Joint applicable SKOTs
  • Commerciality of Life Support Gear and Specialty Equipment dictate that they be replaced periodically (examples: Inflatable Boats, Diving, Fire Fighting and Suppression gear/equipment, due to its nature, is required to be replaced every 5 years).
  • The Warfighter Field Level Maintenance community is significantly challenged to effectively manage, maintain and sustain platform specific Special tools (ST) (i.e. Accountability, Transportability and Logistics Footprint reduction).

• Opportunities for Industry:
  • Procure special tools kits with in-transit/soldier portable cases and trailer/vehicle mounted and/or containerized solutions
  • Design and develop an Allied Trades Metal Working and Machining Shop Set (MWMSS) used to fabricate and/or repair parts, mechanisms, tools, and machinery.
  • Design and develop a Family of Armament Repair Shop Sets (FARSS) to update the legacy armament tools sets and kits, taking advantage of technology advancements and the incorporation of enhanced tool warranties.
  • Research new fabric materials which are stronger and lighter than present personal protective gear in support of firefighters
  • Design and develop a family of high pressure breathing air compressors with an air system monitor for instant contamination warning
  • There is a requirement to develop Berry Amendment compliant 3, 7 and 15 man inflatable boats
  • There is a necessity to design and develop single fuel motors to support the 7 man, 15 man, and rigid inflatable boats.
  • Design and develop Family of Vertical Skills Engineer Construction Kits (VSECK). The VSECK will support all anticipated operational conditions and have utility in Joint, Coalition, Humanitarian Support, Disaster Relief, or Homeland Support Security deployments.
  • Procure and kit Critical Life Support equipment for Engineer and/or Special Forces Divers (i.e. Deep Sea Set, Closed Circuit Scuba Set and Diver Propulsion System)
  • Design and Develop Underwater Construction Sets to support Engineer Dive Teams.
• Lifecycle Challenges:
  • Design and develop a Joint Service Common Electro-Optic (EO) Test Asset for the Next Generation Automatic Test Station (NGATS)
  • Release solicitation in 1QFY12 for competitive production contract to manufacture Smart Wireless Internal Combustion Engine (SWICE) kit via Government owned Technical Data Packages (TDP)
  • Release solicitation in FY12 for competitive full rate production contract to manufacture NGATS
  • Issue Letter Request for Bid Samples in 3QFY12 and subsequently contract award of the 600 MHz Oscilloscope Replacement; additional projects include replacements for the RF Power Test Set, Bench Level Radio Test Set and 300 MHz Oscilloscope
  • Procure AN/GSM-421A(V2); Scope Calibrator, Mass Balance Sets, H-Frames and Pumps for AN/GSM-286&287 in FY12

• Opportunities for Industry:
  • Design and develop a Joint Service Common Electro-Optic (EO) Test Asset for the Next Generation Automatic Test Station (NGATS)
  • Release solicitation in 1QFY12 for competitive production contract to manufacture Smart Wireless Internal Combustion Engine (SWICE) kit via Government owned Technical Data Packages (TDP)
  • Release solicitation in FY12 for competitive full rate production contract to manufacture NGATS
  • Issue Letter Request for Bid Samples in 3QFY12 and subsequently contract award of the 600 MHz Oscilloscope Replacement; additional projects include replacements for the RF Power Test Set, Bench Level Radio Test Set and 300 MHz Oscilloscope
  • Procure AN/GSM-421A(V2); Scope Calibrator, Mass Balance Sets, H-Frames and Pumps for AN/GSM-286&287 in FY12
Enterprise Market Investigation Process

• EMIP
  • A PEO Combat Support & Combat Service Support sponsored process of periodic technology demonstrations and assessments that educate government representatives in advanced technologies at the component or subsystem (not end item) level.
  • An opportunity for vendors to identify to the government industry’s investments in advanced component technologies for potential insertion into and improvement of joint ground systems.
  • Covers ground system portfolios managed by PEO CS&CSS, PEO Ground Combat Systems, the USMC PEO Land Systems, and the USMC PM Light Armored Vehicles.
  • Emphasizes relatively mature technology – a technology able to be demonstrated in a relevant environment, and new technologies that are potential improvements to existing military equipment.

• Http://www.peocscss.army.mil/EMIP.html
  • Download EMIP submission package (technology application idea (TAI) and demonstration plan).
  • Submit TAI, demonstration plan, and photo of technology to usarmy.detroit.peo-cs-css.mbx.truck-tech@mail.mil.

• EMIP demonstrations
  • Typically conducted three times a year: April, July, and October.
  • Early submission is encouraged.

Technologies submitted: 747  January 2005
Technologies demonstrated: 393  through  July 2011

EMIP is a form of market research – not a request for proposal, a source selection, a program, or an acquisition office.
JPO Deputy Program Manager/Project Manager
Mr. Carl Owens

Deputy PM Acquisition: COL Jeff Carr

Vision

JPO MRAP rapidly fields survivable, mobile, multi-mission vehicles to the Joint Force to meet urgent operational requirements in theater. The joint urgent operational need statement (JUONS) called for vehicles capable of mitigating or eliminating the primary kill mechanisms of mines and improvised explosive devices (IEDs).

Product Managers

- Assured Mobility Systems (AMS)
  - Mr. Kenneth Wojcik
- Logistics & Sustainment
  - LTC John O’Neil
- MRAP – All Terrain Vehicle (M-ATV)
  - LTC Kevin Geisbert
- MRAP Vehicle Systems
  - LTC Andrew Oderkirk
MRAP ~ Vehicles

50 Programs

- Navistar MaxxPro
- BAE-TVNS Caiman
- FPI Cougar
- BAE SOCOM (RG-33)

PdM AMS

- Buffalo
- Cougar/JERRV
- Husky (VMMD)
- RG31
- Panther/MMPV

57 ONS

13 Systems

CAT I

- Buffalo

CAT II

- BAE HAGA
- BAE RG-33L
- FPI Cougar

CAT III

- Oshkosh M-ATV

- Navistar MRV

CAT III

- Oshkosh M-ATV

- Navistar MRV
MRAP~ Variant Overview

PM MRAP

**CAT I**
- Navistar MaxxPro
- BAE-TVS Caiman
- FPI Cougar
- BAE SOCOM (RG-33)

**CAT II**
- BAE HAGA
- BAE RG-33L
- FPI Cougar

**CAT III**
- FPI Buffalo

PdM AMS

- Buffalo (MPCV)
- Cougar (JERRV)
- Husky (VMMD)
- RG31
- Panther (MMPV)

M-ATV
- OshKosh M-ATV

Wrecker
- Navistar MRV
# MRAP ~ Products

## Mine Resistant Ambush Protected Vehicles (MRAP)

- MRAP All-Terrain Vehicle (M-ATV)
- MRAP All-Terrain Vehicle (M-ATV) SOCOM
- MRAP Recovery Vehicle (MRV)
- MRAP Vehicle, CAT I, MaxxPro (Base)
- MRAP Vehicle, CAT I, MaxxPro MEAP Protected
- MRAP Vehicle, CAT I, MaxxPro Plus (EFP Protected)
- MRAP Vehicle, CAT I, MaxxPro Plus Ambulance
- MRAP Vehicle, CAT I, MaxxPro Dash
- MRAP Vehicle, CAT I, MaxxPro Dash ISS
- MRAP Vehicle, CAT I, MaxxPro Dash ISS Ambulance
- MRAP Vehicle, CAT II, MaxxPro
- MRAP Vehicle, CAT I, Caiman (Base)
- MRAP Vehicle, CAT I, Caiman Plus (EFP Protected)
- MRAP Vehicle, CAT I, Caiman Plus (EFP Protected) C2OTM
- MRAP Vehicle, CAT I, Caiman Multi-Terrain Vehicle (CMTV)
- MRAP Vehicle, CAT I, RG-33 USSOCOM
- MRAP Vehicle, CAT I, RG-33 USSOCOM Plus
- MRAP Vehicle, CAT I, RG-33 USSOCOM Plus ISS
- MRAP Vehicle, CAT II, Joint Explosive Ordnance Disposal Rapid Response Vehicle (JERRV)
- MRAP Vehicle, CAT I, Cougar A1
- MRAP Vehicle, CAT I, Cougar A2
- MRAP Vehicle, CAT I, Cougar A1 ISS
- MRAP Vehicle, CAT I, Cougar A2 ISS
- MRAP Vehicle, CAT I, Cougar HEV (Hardened Engineer Vehicle)
- MRAP Vehicle, CAT II, Cougar A1
- MRAP Vehicle, CAT II, Cougar A2
- MRAP Vehicle, CAT II, Cougar A1 ISS
- MRAP Vehicle, CAT II, Cougar A2 ISS
- MRAP Vehicle, CAT II, Cougar HEV (Hardened Engineer Vehicle)
- MRAP Vehicle, CAT II, RG-33L (Base)
- MRAP Vehicle, CAT II, RG-33L Plus (EFP Protected)
- MRAP Vehicle, CAT II, RG-33 Heavily Armored Ground Ambulance (HAGA)
- MRAP Vehicle, CAT II, RG-33 Heavily Armored Ground Ambulance (HAGA) Plus
- MRAP Vehicle, CAT III, Buffalo A1
- MRAP Vehicle, CAT III, Buffalo A2
- MRAP Vehicle, CAT II, RG-33 USSOCOM AUV (Armored Utility Vehicle)
- MRAP Vehicle, CAT II, RG-33 USSOCOM ARV (Armored Recovery Vehicle)

## PdM Assured Mobility Systems (AMS)

- Buffalo Mine Protected Clearance Vehicle A0, A1
- IVMMD Mine Protected Vehicle Mk2
- JERRV EOD Vehicle
- RG31A1 Mk5
- RG31A2 Mk5E
- RG31A3 SOCOM
- Medium Mine Protected Vehicle (MMPV) (POR)
- Buffalo A2 Mine Protected Clearance Vehicle (MPCV) (POR)
- Vehicle Mounted Mine Detector Vehicle MK3 (VMMD) (POR)
- Buffalo Surrogate Training System
- JERRV Surrogate Training System
- Route Clearance Team Training System
- Vehicle Mounted Mine Detector Training System

### Joint Programs

*Opportunity for Joint or Expanded Joint Program*
Focus Areas for MRAP

**Program:**
- Sustain support to current operations
- Identify those tasks needed to “clean up the battlefield” and transition to program of record
- Address emerging threats
- Structure for post production environment
- M-ATV
- Initiating Army Sustainment Readiness Review (SRR)

**Changed Conditions in CENTCOM AOR Drive New Requirements:**
- Requirement for enduring, longer-term sustainment effort in Afghanistan
- Near-term ending of MRAP production, completing fielding
- The continued robustness of parts support
- Retrofits, retrogrades and Battle Damage and Repair (BDAR)
MRAP ~ Challenges

• Operations in the OEF
• Future use of the MRAP Fleet
• Multiple configurations when used / for supporting the long term
• Processing contracting actions at the pace of current operations
MRAP ~ Opportunities for Industry

- Reset/Recap
- Conversion Programs
- More robust components
- Decrease weight, increase survivability (technology advances)
- Multi-threat survivability solutions
- Lifecycle sustainment
- Decreasing manufacturing costs (spares)
- Spare parts commonality
- Recovery and Ambulance variants
Tactical Vehicles

Project Manager
COL Dave Bassett

Deputy PM Acquisition: Mr. Tony Shaw

Mission
The lifecycle management of light, medium and heavy tactical vehicles & trailers enabling the Expeditionary Ground Force

Other Significant Procurement Efforts
- Safety Enhancements
- Add-on-Armor/GPK

Product Managers
- Joint Light Tactical Vehicles
  - Mr. Mark McCoy (USA)
- Light Tactical Vehicles
  - Mr. Dennis Haag
- Medium Tactical Vehicles
  - LTC Shane Fullmer
- Heavy Tactical Vehicles
  - LTC Paul Shuler
# 4CSL PMs – Approximately 240K Systems Fielded

## Light Tactical Vehicles
- **31 systems/variants (4 Trailers)**
- **~170K systems fielded**
  - HMMWV Family of Vehicles
  - UAH Safety Enhancements
  - Light Tactical Trailer (LTT) – 485/month
- **M200A1 Chassis Trailer**
- **M1061A1 Chassis Trailer**
- **Light Engineer Utility Trailer (LEUT)**
- **700 new HMMWVs / Month, for Other Svcs & FMS, going to 400/month in Nov 11**

## Medium Tactical Vehicles
- **17 truck variants (3 Trailers)**
- **Over 57,886 systems fielded**
  - Family Medium Tactical Vehicles (FMTV)
  - High-Mobility Artillery Rocket System (HIMARS)
  - Load Handling System (LHS)
- **825 max Sys/Month**

## Heavy Tactical Vehicles
- **33 variants (8 Trailers)**
- **Over 33K systems fielded**
  - Heavy Expanded Mobility Tactical Truck (HEMTT)
  - Palletized Load System (PLS)
  - M915 Family of Vehicles & Trailers
  - Trailer (HEMAT)
  - Heavy Equipment Transport (HETS)
  - Container Handling Unit (CHU)
- **1,409 Sys/Month**

## Joint Light Tactical Vehicle
- **7 variants with trailer**
- **Preparing for entry into MS-B**
  - Combat Tactical Vehicle
    - General Purpose- 4 seat
    - Special Purpose- 4 seat (Unit Leaders and Functional Staff)
    - Heavy Weapons Carrier- 4 Seat (Wpns Co, MP, Mounted Patrol; Convoy Escort)
    - Close Weapons Carrier- 4 Seat (TOW/Saber Carrier)
    - Communication on the Move (C2OTM)
  - Combat Support Vehicle
    - Utility Vehicle- 2 seat
    - Shelter Vehicle- 2 seat (Standard Shelters)
TWV Competitive Actions

- JLTV – RFP Release Dec 11
- MECV – RFP Release Date Nov 11
- HTV B-Kits
  - Small Business Set Aside
  - RFP Release Nov 11
- MTV B-Kits
  - Small Business Set Aside
  - RFP Release Dec 11
- HTV – Fuel Tank Fire Suppression
  - RFP Release Dec 11
- MTV – Fuel Tank Fire Suppression
  - RFP Release Nov 11
- Flatracks
  - Small Business Set Aside
  - RFP Release Dec 11
- M1061 Trailer
  - RFP Release Nov 11
- M200 Trailer
  - RFP Release Dec 11
Light Tactical Vehicles

- Army has met requirement for HMMWV; remaining production for other services and FMS, into Aug 12.
- JLTV is the Joint program to modernize the LTV fleet
  - 3 Oct Draft RFP Release, 11-13 Oct Industry Day
  - Dec 2011 - Final RFP Release (Jan 2012 Proposals Due)
  - May 12 Contract Awards
- Existing HMMWV Fleet in sustainment - RECAP/RESET
  - Restart of Depot Recap program for UAH at RRAD and LEAD
- Competitive RECAP – MECV: Complimentary Program with JLTV – including timeline
  - Phase I: Request for Proposal (RFP) Schedule
    - Draft Phase I RFP released Sep 11, 7 Oct 11 Industry Day
    - Nov 11 Final Phase I RFP (Jan 12 Proposal Due)
    - Contract award(s) (up to three) in May 12
- Competitive Award Light Tactical Trailer program:
  - Delivery Order was awarded 20 Sep 11 for 1598 trailers using MADO (competitive) procedures.
  - The Government saved over $1.8M.
- Solicitation for Total Package Fielding Services
  - Issued under Omnibus III Blanket Purchasing Agreement in 1Q FY12
  - Supports recapped UAHs for de-processing, tech inspections, accountability and hand-off, fielding, and post-fielding activities
  - Base year requirement for ~8000 UAHs
Joint Light Tactical Vehicle - Sticker

**Technical Features**
- 275-340 HP Diesel Engine (4 Cyl or 6 Cyl)
- 6-Speed Automatic Transmission
- Independent Four-Corner Suspension (passive or semi-active)
- Air-activated Hydraulic Anti-lock Disc Brake System with controlled trailer braking and Traction Control
- Starter & Alternator powertrain (15 kW On-Board Power Generation)
- Silent Watch battery (2 hours of silent watch)
- Curb Weight: 14,300 lbs
- GVW: 20,000 lbs
- GVWR: 21,500 lbs

**Safety Features**
- 18”-24” ground clearance
- Electronic Stability Control
- Automatic Fire Extinguishing System [AFES] (engine & crew compartments)
- Combat-locking Doors
- Central Tire Inflation System (CTIS)
- Multiple occupant egress paths
- Exterior provisions to accept EFP and RPG kits

**Interior Features**
- 3,500 lbs Payload Capacity with 60 cu ft of additional stowage space for mission payload
- Accommodates 5th-95th percentile combat-equipped occupants
- Extreme climate condition HVAC controls
- Noise-reducing crew compartment
- Spall protection
- Net-Ready Integrated C4I Suite

**Exterior Features**
- Tubeless radial tires (365 mm – 395 mm width, with 20”-22.5” rims)
- 30-40 gal fuel tank
- Pintle for towing JLTV trailer or legacy trailers (HMMWV / FMTV)
- External NATO Slave Cable Receptacles
- LED Headlights
- Exterior lighting package (including Blackout Mode)
- Fording to 30”

**Manufacturing Target Cost**
$250K plus B-Kit Armor

**Payload-Ton Miles Per Gallon**
10 to 13

**Protection Level**
- 100% Assembled in The USA
- 1X PROTECTION, 10,000 POUNDS LIGHTER THAN MATV
- NETWORK CAPABLE
- MOBILITY RESTORED

**Options**
- Integrated Starter / Generator
- Suspension Upgrade
- Drivers Display
- Cmd Display
- Additional B-Kit: EFP, RPG

**Acquisition Strategy**
- Rapid, 33 month EMD phase
- 15 months to integrate and deliver
- 14 months to test and evaluate
- LRIP production by FY15

**Parts Content Information**
- Integral Small Arms Ballistic protection
- Integral Transparent Armor [small arms ballistic protection]
- Scalable B Kit: 1x UB; 2x UW; Artillery Overhead
- Roof Crush protection to 150% GVW

**A-Cab**
Small Arms
- Army - 1X
- USMC - .5X

**B-Kit Underbody**
- Army - 1X
- USMC - .5X

28 OCT 2011
MTV Modernization

FMTV Improvement Priorities

- Soldier Protection / Survivability
- Fuel Economy
- Component Reliability
  - Same Form / Fit / Function

Schedule

| Fiscal Year | Recap | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|-------------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| ORD to CPD  |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FMTV (BAE)  |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Procurement |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FMTV (OTC)  |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Procurement |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| RECAP “Like” or “Improve” | |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Legacy Fleet (M939) and FMTV RESET | |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| M35 Divestiture | |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| M809-939 Divestiture | |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| A0 Divestiture | |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- Increment Decision Point
- Requirements Point
- Tech Insertion Decision Points
HTV Contracting Strategies

- **FHTV III**
  - FHTV III 2 year extension in process for FY12 thru FY13
- **Family of Heavy Tactical Vehicles IV**
  - **Intent** is for Full and Open competition, 5 year requirement contract
  - Sources sought
  - Draft schedule:
    - RFP Release 1st QTR FY13
    - Contract Award 4th QTR FY13
    - Contracting Ordering Period: OCT 2013-OCT 2018
    - Period of Performance: OCT 2013-OCT 2019
- **Systems included:**
  - New production of HEMTT, PLS, PLS-T and HET
  - RECAP of HEMTT, PLS all models
Dan Lorentz
Director, Deployment Equipment Product Support Integration Directorate

28 October 2011
CS&CSS Readiness & Sustainment
Managed Systems

- HMMWV
- ASV
- Trucks
- Trailers
- Construction
- M9 ACE
- Material Handling
- Watercraft
- MRAP
- Water and Petroleum Systems
- Tire Assembly Systems
- Bridging
- Trains
- Tool Sets, Kits, and Outfits (SKOs)
- Diving Equipment
- Assured Mobility Systems
- IED Defeat/Protect Force Systems
- Rail
CS&CSS R&S supports the full-spectrum force through development, acquisition, testing, systems integration, product improvement, and fielding that places the best combat support systems in the hands of our Soldiers.
CS&CSS Readiness & Sustainment
FY12 RESET/RECAP Requirements $2.319B

DE SUSTAINMENT RESET – $99M
- Organic $51M
- Contractor $48M

MRV SUSTAINMENT RESET - $110.6M

Tactical SUSTAINMENT RESET/RECAP - $1.074
- Organic $872M
- Contractor $167M
- Partnership $35M

TOOLS SUSTAINMENT RESET - $14.5M
- Organic $14.4M
- Contractor $15K
## CS&CSS Readiness & Sustainment
### FY12 Forecasted Acquisitions – Top 20

### Deployment Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>350 GPM Filter Separator</td>
<td>$4.1M</td>
</tr>
<tr>
<td>M9ACE Actuator, Hyd</td>
<td>$3.9M</td>
</tr>
<tr>
<td>Scraper Transmission</td>
<td>$3.4M</td>
</tr>
<tr>
<td>50K Water Tank</td>
<td>$2.5M</td>
</tr>
<tr>
<td>M9ACE Actuator, Hyd</td>
<td>$2.5M</td>
</tr>
</tbody>
</table>

### Tactical Vehicles

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMMWV Gunner Protection Kit</td>
<td>$22.6M</td>
</tr>
<tr>
<td>HMMWV Wheel Assy</td>
<td>$18.7M</td>
</tr>
<tr>
<td>HMMWV 6.5L Engine</td>
<td>$10.5M</td>
</tr>
<tr>
<td>HMMWV 400 Amp Generator</td>
<td>$5.7M</td>
</tr>
<tr>
<td>FMTV Wheel Assy</td>
<td>$4.7M</td>
</tr>
</tbody>
</table>

### Tools

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Mechanics Tool Kits</td>
<td>$26.5M</td>
</tr>
<tr>
<td>Small Arms Tool Kit</td>
<td>$6.4M</td>
</tr>
<tr>
<td>Tow Bars</td>
<td>$4.4M</td>
</tr>
<tr>
<td>Carpenter</td>
<td>$2.8M</td>
</tr>
<tr>
<td>SATS Base</td>
<td>$2.6M</td>
</tr>
</tbody>
</table>

### Mine Resistant Vehicles

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRAP Wheel Assembly</td>
<td>$24.53M</td>
</tr>
<tr>
<td>RCV Frame Structural</td>
<td>$20.06M</td>
</tr>
<tr>
<td>RCV Wheel, Pneumatic</td>
<td>$16.27M</td>
</tr>
<tr>
<td>RCV Frame Structural</td>
<td>$12.23M</td>
</tr>
<tr>
<td>RCV Lighting Kit</td>
<td>$11.66M</td>
</tr>
</tbody>
</table>
• DEPOT SUPPLY CHAIN MANAGEMENT

• LOGISTICS SUPPORT OF PM IEDD/PF EQUIPMENT

• Full Material Release w/ICLS for RCV VMMD and Buffalo A2