

# 2004 TACOM APBI



**Government and Industry Unite  
to Support Our Forces**



*Serving "Our Army at War -- Relevant and Ready"*

## *2004 Advanced Planning Brief to Industry*

### *PEO CS&CSS and Industry Challenges*

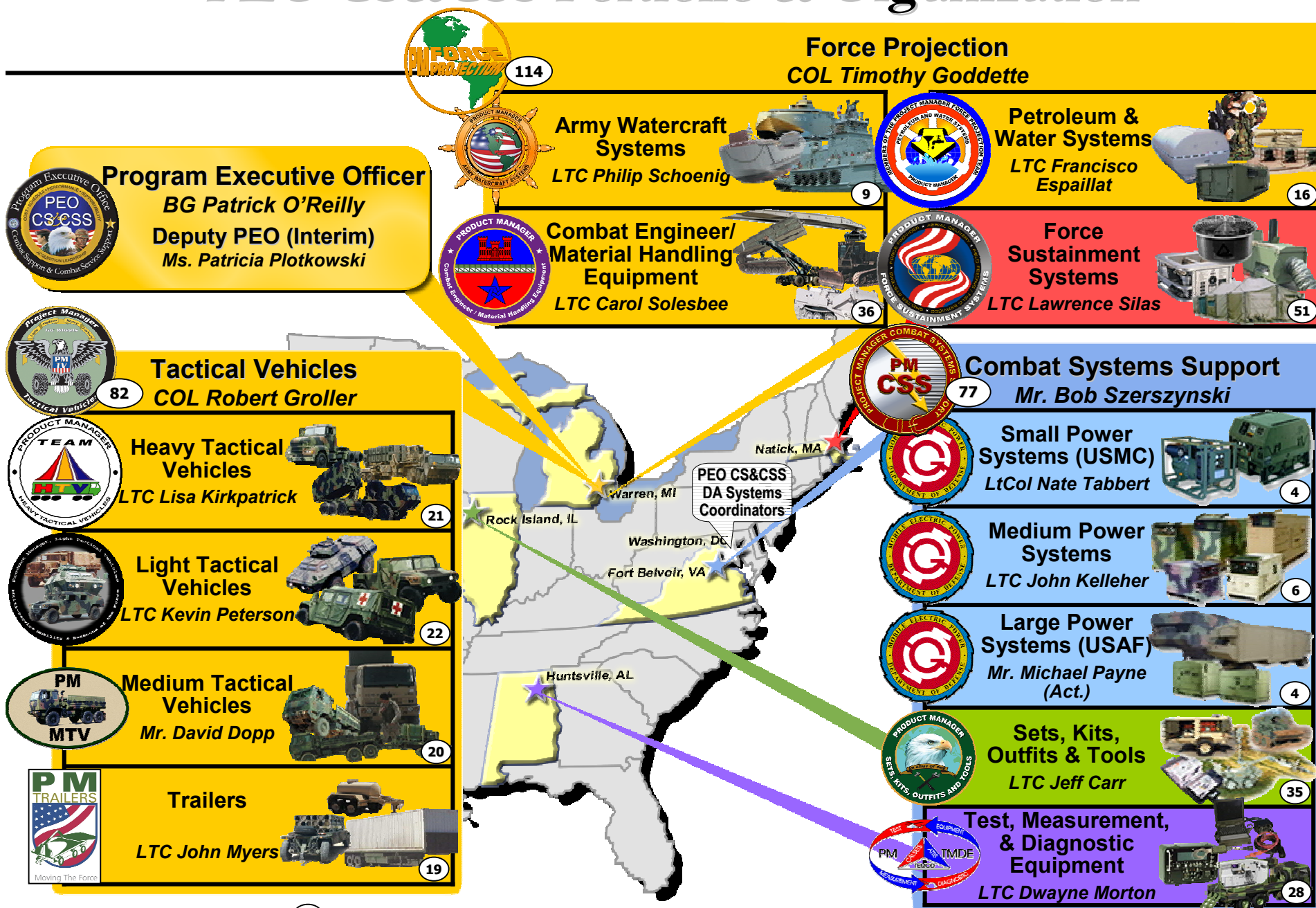
***Ms. Patricia Plotkowski***

Interim Deputy Program Executive Officer  
Combat Support and Combat Service Support

**14 October 2004**

*Innovation for Today and Tomorrow's Expeditionary Forces*

# PEO CS&CSS Portfolio & Organization





# *PEO CS&CSS Transformation Strategy*

*“Innovation for Today and Tomorrow's Expeditionary Forces”*

## **TODAY**



### **Industrial Based Logistics**



- **Platform/Product Centric Support**
- **Large Logistics Footprint in Theater**
  - Dependence on extensive air, sea, and land lines of communications
  - Reliance on multi-layered supply and services support infrastructure

## **NEAR TERM**



### **Focused Based Logistics**



- **Optimize Today's processes to minimize footprint and cost**
  - Government/Industry Partnerships
  - RECAP Block Modification Improvements
  - Modernization through Spares
  - New Procurement
  - Non-Developmental Items

## **FUTURE**



### **Logistics Transformation**

- **“Connect” our Logisticians**
- **Modernize Theater Distribution**
- **Improve Force Reception**
- **Integrate the Supply Chain**

**Equipment rarely breaks –  
When it breaks, it's easy to fix**

- Self-diagnostics and reporting
- Few tools, repairs < 20 min
- Common parts/carry spares



# Combat Systems Support Project Management Office



## Project Manager

**Mr. Bob Szerszynski**

## Deputy Project Manager

**Kelly Alexander**



Department of Defense  
Project Manager  
Mobile Electric Power

## MISSION

Provide the Army with superior combat systems support materiel to accomplish its Maintenance, Recovery, Test Measurement and Diagnostic Equipment, and Mobile Electric Power missions during peace and war.

## VISION

Modernized, Supportable, Expeditionary  
Ordnance Systems



## PRODUCT MANAGERS

- ✦ Small Power Sources
  - *LtCol Nate Tabbert (U.S. Marine Corps)*
- ✦ Medium Power Sources
  - *LTC John Kelleher Jr.*
- ✦ Large Power Sources
  - *Vacant (U.S. Air Force)*
    - *Mr. Michael Payne (Acting)*
- ✦ Sets, Kits, Outfits, and Tools
  - *LTC Jeff Carr (USAR)*
- ✦ Test, Measurement, and Diagnostic Equipment
  - *LTC Dwayne Morton*

# Combat Systems Support Products



## PM Test, Measurement, and Diagnostic Equipment (TMDE)

28 Systems

### Common Embedded Diagnostics

Aviation Digital Source Collector (DSC)/Health and Usage Monitoring System (HUMS)  
Surface HUMS

### Calibration Sets (CALSETS)

CALSET 2000  
CALSETS Equipment Modernization

### IFTE At Platform Automatic Test Systems

Maintenance Support Device (MSD)  
MSD (Follow-on)  
Internal Combustion (ICE) Engine Diagnostic Kit

### IFTE Off Platform Automatic Test Systems

Base Shop Test Facility (BSTF) (V) 5  
Base Shop Test Facility (V) 6

### Test Equipment Modernization Program

AN/UPM-155 IFF Test Set  
SG-1207A Signal Analyzer  
AN/USM-677, Spectrum Analyzer  
OS-303, Oscilloscope  
TS-4530/UPM, IFF Radar Test Set  
LAN Cable Test Set  
Fiber-Optic Cable Analyzer  
Communication Test Set  
Earth Tester (Omega Ohm Meter)  
RF Power Meter  
Signal Generator  
Radio Test Set  
Test Set Electrical Cable  
Digital Optical Borescope  
Digital Multimeter  
Hand Held Oscilloscope  
Frequency Counter  
Battery Analyzer  
Cable Locator (Underground)



## DoD PM Mobile Electric Power (MEP)

4 Systems

### PM Small Sets

2kW Military Tactical Generator (MTG)  
3kW Military Standard Generator (MIL-STD)  
3kW Tactical Quiet Generator (TQG)  
Small Tactical Electric Power (STEP)

### PM Medium Sets

6 Systems

Military Standard Generator (MIL-STD)  
5kW, 10kW, 15kW, 30kW, and 60kW  
Tactical Quiet Generator (TQG)  
5kW, 10kW, 15kW, 30kW, and 60kW  
Advanced Medium Mobile Power Sources (AMMPS) 5kW, 10kW, 15kW, 30kW, and 60kW  
Power Units / Power Plants (PU/PP)  
Power Distribution Illumination System Electrical (PDISE)  
Power Management Distribution System (PMDS)

### PM Large Sets

4 Systems

Military Standard Generator (MIL-STD)  
100kW, 200kW, 500kW, 750kW  
Tactical Quiet Generator (TQG)  
100kW and 200kW  
Deployable Power Generation and Distribution System (DPGDS)  
Large Advanced Mobile Power Sources (LAMPS)



## PM Sets, Kits, Outfits and Tools (SKOT)

35 Systems

### Diving Equipment

Diving Equipment Sets (A and B)  
Recompression Chamber  
Under Water Photo Support Set

### Explosive Ordnance Disposal Equipment

Remote Ordnance Neutralization System (RONS)  
Remote Activation Munition System (RAMS) MK 152  
Small Caliber Dearer (SCD) MK 38 Mod 0

### Sets, Kits & Outfits

Automotive Maint and Repair, FM Basic & Supplement  
General Mechanic's Tool Kit (GMTK)  
Individual Repairman Aircraft Armament Tool Set (NATS-A)

Shop Equipment Mechanical Maintenance, Shelter Small Arms Toolkit

Standard Automotive Tool Set (SATS)

### Shelter Mounted Sets, Kits, and Outfits

Body, Explosive Ordnance Disposal (BEOD)  
Engine Fuel System Repair, Shelter Mtd /Electronic System

Maint, Weapon Tool Kit  
Instrument & Fire Control Repair, Shelter Mounted  
Mechanical Maintenance, Shelter Mounted /Battalion Maintenance Sets

Power Plant Set, Shelter Mounted  
Small Arms Repairs, Shelter Mounted  
Tool Set Contact & Emergency Repair  
Tool Set, Full Tracked Vehicle Repair

### Shop Set Equipment

Forward Repair System (FRS)  
Hydraulic System Test and Repair Unit (HSTRU)  
Pioneer Tool Outfit (PTO)/Hydraulic and Electric Tool Outfit (HETO)

Shop Equipment, Contact Maintenance (SECM)  
Shop Equipment General Purpose (GP) Repair  
Shop Equipment Organizational (ORG)Repair  
Shop Equipment, Welding (SEW)  
Shop Set, Electrical  
Spare Parts Storage Cabinet Set  
Woodworking Shop Set (WWS)

### Combat Support Equipment

Demolition Kit  
Tool Set, Light Engineer Squad/Air Assault Kit

# *Technology Challenges*

## *Combat Systems Support*

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### ✦ **Mobile Electric Power**

- Fuel Cell Reformation (Diesel/JP-8)
- Cogeneration Systems (Electric Power & Environmental Control)
- Hybrid Systems to enable Silent Watch
  - Solar Cell/High Energy Density Storage
  - Thermoelectrics to recharge batteries
- Advanced Power Electronic Systems
  - Silicon Carbide Components
  - Alternative Topologies
  - Protective circuit designs against reactive load applications
  - Vehicle-based recharging using wind & solar
- Advanced Distribution Technologies
  - Intelligent Power management devices
  - Software development
  - Simpler, Soldier-Portable Power Grid (components, cables, switching, etc.)
  - Military applications of DC distribution – Study



# *Technology Challenges*

## *Combat Systems Support (cont.)*

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### ✦ **Mobile Electric Power (Continued)**

- Advanced Combustion Technologies for 500-2000W applications
  - Wetstacking reduction
  - JP-8 burner technology to support Stirling and direct energy conversion technologies (Thermophotovoltaics, Thermoelectrics, Thermionics, etc.)
- Materials advancements to reduce system signature (noise, IR, EMI) and Size & Weight, and to improve Performance
- Advanced Energy Storage technologies
  - Rotary UPS technology
  - Flywheel storage systems
  - Studies to optimize energy storage systems
- Displays and Control Panels for Extreme Environments (-65F to 140F)

# *Technology Challenges*

## *Combat Systems Support (cont.)*

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### ◆ **Sets, Kits, Outfits & Tools**

- Affordable technology to automate the inventory and accountability of tool kits and shop sets in the field.

### ◆ **Test, Measurement, and Diagnostic Equipment**

- Evolve automated maintenance and diagnostics capabilities to predictive maintenance
- Internal Combustion Engine (ICE) kit weight reduction
  - A single pressure transducer with acceptable error to cover the current three ranges –30 inches Mercury (Hg) to +25 PSI, 0-1 KPSI, 0-10 KPSI.
  - Wireless communication for both analog and digital data bus.

# *Force Projection*

## *Project Management Office*

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### *Project Manager*

**COL Timothy Goddette**

### *Acting Deputy Project Manager*

**Mr. Dennis Mazurek**

### **MISSION**

Develop, acquire, field, and support materiel solutions that optimize the “System of Systems” approach to project and sustain joint forces worldwide.

### **VISION**

Recognized Experts in Commercial Off-The-Shelf (COTS) & Non Developmental Items (NDI) (CaNDI) Acquisition, Logistics, & Technology.

### **PRODUCT MANAGERS**

- ✦ Army Watercraft Systems
  - *LTC Philip Schoenig*
- ✦ Combat Engineer/Material Handling Equipment
  - *LTC Carol Solesbee (ARNG)*
- ✦ Force Sustainment Systems
  - *LTC Lawrence Silas*
- ✦ Petroleum and Water Systems
  - *LTC Francisco Espallat (USAR)*



# Force Projection Products



## PM Combat Engineer/Material Handling Systems

**36 Systems**

1.6 & 2.5 Cubic Yard Scoop Loaders  
4.5 & 5.0 Cubic Yard Scoop Loaders  
20/40 Foot Container Bottom Lift Sling  
6K Variable Reach Forklift SLEP  
Abn./Air Mobile Water Distributor and Scraper  
All Terrain Crane  
All Terrain Lifter, Army System (ATLAS)  
All Terrain Lifter, Army System (ATLAS) II  
Armored Veh. Launched Bridge (AVLB) SLEP  
Bridge Erection Boat (BEB)  
Common Bridge Transporter (CBT)  
Const. Equip. Svc. Life Ext. Pgm. (CE-SLEP) Abn.  
Crushing, Screening, Washing Plant (CSWP)  
D7 Bulldozer SLEP  
Deployable Universal Combat Earthmover (DEUCE)  
Dry Support Bridge (DSB)  
Dual Steel Wheeled Roller (DSWR)  
Engineer Mission Modules (EMM)  
Engineer Test Sets  
Grader, Motorized, Heavy  
Heavy Engineer Crane (HEC)  
High Mobility Eng. Excavator (HMEEX)  
Hydraulic Excavator (HYEX)  
Improved Ribbon Bridge (IRB) Bays  
M9 Armored Combat Earthmover (ACE)  
Nuclear Soil Densometer (SLEP)  
Rapidly Emplaced Bridging System (REBS)  
Rough Terrain Container Crane (RTCC) SLEP  
Rough Terrain Container Handler (RTCH)  
Rough Terrain Container Handler (RTCH) SLEP  
Scraper, Earthmoving, 14-18 Cu. Yd.  
Scraper, Earthmoving, 14-18 Cu. Yd. SLEP  
Small Emplacement Excavator (SEE) RECAP  
Skid Steer Loader  
Well Drilling System SLEP



## PM Force Sustainment Systems

**51 Systems**

Advanced Low Velocity Airdrop System (ALVADS)  
Army Space Heater (ASH)  
Assault Kitchen (AK)  
Authorized Stockage List Mobility System (ASLMS)  
Battlefield 12-Head Shower  
Chameleon  
Chaplaincy Logistical Support Package (CLSP)  
Containerized Batch Laundry (CBL)  
Containerized Chapel (CC)  
Containerized Kitchen (CK)  
Containerized Latrine System (CLS)  
Containerized Self-Serve Laundry (CSSL)  
Containerized Shower System (CSS)  
DoD Combat Field Feeding Program (6.4/6.5)  
Dual Row Airdrop System (DRAS)  
Electronic Shop Van (ESV)  
Enhanced Container Delivery System (ECDS)  
Environmental Control Unit (ECU)  
Extraction Parachute Jettison System (EPJS)  
Family of Cargo Bed Covers (CBCs)  
Field-Deployable Environmental Ctrl. Unit (FDECU)  
Food Sanitation Center (FSC)  
Force Provider  
Improved Environmental Control Units (IECU)  
Joint Precision-Guided Aerial Delivery System (JPADS)  
Kitch., Co. Level. Fld. Feeding - Enhanced (KCLFF-E)  
Large Capacity Field Heater (LCFH)  
Laundry Advanced System (LADS)  
Lightweight Maintenance Enclosure (LME)  
Low Cost Aerial Delivery System (LCADS)  
Medium Command Post Tent  
Mobile Integrated Remains Collection System (MIRCS)  
Mobile Kitchen Trailer-Improvement (MKT-I)  
Modern Burner Unit (MBU)  
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)  
Soldier Integrated Hygiene System (SIHS)  
Space Heater Arctic (SHA)  
Space Heater Convective (SHC) 35K BTU  
Space Heater Convective (SHC) 60K BTU  
Space Heater Medium (H-45)  
Space Heater Small (SHS)  
Space Heater, Large  
Tent Extendable Modular Personnel (TEMPER)  
Thermoelectric Fan (TEF)  
Trailer Mounted Support System (TMSS)  
Ultra Lightweight Camouflage Net System (ULCANS)



## PM Army Watercraft Systems

**9 Vessels**

115 Ton Barge Derrick  
Containerized Maintenance Facility (CMF)  
Landing Craft Mechanized (LCM8) Mod II  
Landing Craft Utility (LCU) 2000 Material Change  
Large Tug (LT) 128' Modernization  
Logistics Support Vessel (LSV) Repro curement  
Modular Causeway System (MCS)  
Small Tug 900 (ST900)  
Theater Support Vessel - Interim



## PM Petroleum & Water Systems

**16 Systems**

Tactical Water Purification System (TWPS) 1500 GPH  
Reverse Osmosis Water Purification Unit (ROWPU) 600 GPH  
Advanced Aviation Forward Area Refueling System (AAFARS)  
Assault Hoseline System (AHS)  
Engineer Mission Module (EMM)-Water Distribution System  
Fuel System Supply Point (FSSP)  
LHS Compatible Water Tank Rack (Hippo)  
LHS Modular Fuel Farm (LMFF)  
Lightweight Water Purifier (LWP)  
Modular Base Petroleum Lab (MBPL)  
Petroleum Quality Analysis System (PQAS)  
Petroleum Test Kit (PTK)  
Rapidly Installed Fluid Transfer System (RIFTS)  
Tactical Petroleum Terminal (TPT)  
Unit Water Pod System (Camel)  
Versatile Tank and Pump Unit (VTPU)



## Recovery Vehicle Management Office

**2 Vehicles**

M88A1 Medium Recovery Vehicle RECAP  
M88A2 HERCULES

# *Technology Challenges*

## *Force Projection*

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### ✦ **Army Watercraft Systems**

- Sea State 3 capability for Modular Causeway Systems (MCS)

### ✦ **Combat Engineering and Material Handling Equipment**

- Improved C130 Transportability
- Electromagnetic Environmental Effects (E3), High Altitude Electromagnetic Pulse (HEMP) requirements, and Nuclear, Biological and Chemical (NBC) Contamination
- Tier 3 EPA non-road emissions standards (a commercial requirement)
- Composite bridging material for induction into Rapidly Emplaced Bridging System (REBS), Dry Support Bridge (DSB), and next generation bridging

### ✦ **Petroleum and Water Systems**

- Lightweight liquid containers, composite tanks (500-3000 gal) – Dept. of Transportation approved
- Packaged water concepts to replace bottled water
- Innovative water generation technologies (from air, exhaust, etc.)
- New liquid transfer technologies for movement of liquids over long distances (100-600 miles)
- Next generation water purification technologies
- New liquid storage concepts to replace large fabric tanks (200,000 gal and larger)
- Stand Off tank gauging
- System GPS tracking for fuel & water

# *Technology Challenges*

## *Force Projection (cont.)*

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### ✦ **Force Sustainment Systems**

- Smart airdrop systems using GPS, autonomous control, software integration with USAF Precision Airdrop System (PADS)
- Alternative construction technologies and materials for parachutes that will broaden the industrial base and provide systems that are less costly and easier to maintain
- Safely and efficiently managing, handling, treating and disposing of the waste stream, both liquid and solid waste
- Reducing water consumption for containerized batch laundry and containerized shower systems through water Re-use systems
- More efficient means for the disposal of black water than collection in bladders
- Configure Force Sustainment subsystems in TRICONS to better support expeditionary forces and missions
- Cogeneration (energy from waste heat)
- High efficiency insulation for refrigerated containers for reduced cooling and/or reduced wall thickness
- Refrigeration technology for improved performance, reliability, and reduced environmental impact of ECUs and refrigerated containers
- Billeting subsystems are the largest component of the Force Provider System: expandable rigid wall shelter to replace the fabric tents
- Improved ventilation and heat exchange equipment for tents



# *Tactical Vehicles*

## *Project Management Office*

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### MISSION

Develop, acquire, field, and support materiel solutions that optimize the “System of Systems” approach to project and sustain joint forces worldwide.

### VISION

Committed to Innovation for Today and Tomorrow's Expeditionary Forces.

### *Project Manager*

**COL Robert Groller**


### *Deputy Project Manager*

**Mr. Tony Shaw**

### PRODUCT MANAGERS


- ✦ Light Tactical Vehicles
  - *LTC Kevin Peterson*
- ✦ Medium Tactical Vehicles
  - *Mr. David Dopp*
- ✦ Heavy Tactical Vehicles
  - *LTC Lisa Kirkpatrick*
- ✦ Trailers
  - *LTC John Myers (USAR)*

# Tactical Vehicles Products




**PM Light Tactical Vehicles**  
22 vehicles

- M966 - Tow Carrier
- M996 - Mini Ambulance
- M997 - 4-Litter Ambulance
- M998 - Cargo/Troop Carrier
- M1025 - Armament Carrier
- M1026 - Armament Carrier w/winch
- M1035 - 2-Litter Ambulance
- M1037 - Shelter Carrier
- M1038 - Cargo/Troop Carrier w/winch
- M1042 - Shelter Carrier w/winch
- M1097 - Heavy HMMWV
- HMMWV A1, A2 Series
- M1113 Expanded Capacity Vehicle (ECV)
- M1114 Up-Armored HMMWV
- M1151 Enhanced Armament Carrier
- M1152 Enhanced Troop/Cargo/Shelter Carrier
- HMMWV Recapitalization Program
- USMC HMMWV Procurement (inc. 1043, 1044, 1045, 1046)
- USAF HMMWV Procurement (inc. 1116)
- M1117 Armored Security Vehicle
- Lightweight Utility Mobility Enhanced System (LUMES)



**PM Medium Tactical Vehicles**  
20 vehicles

- M1078A1 - 2.5 Ton Std Cargo
- M1079A1 - 2.5 Ton Van
- M1080A1 - 2.5 Ton Chassis
- M1081A0 - 2.5 Ton Cargo (LVAD)
- M1083A1 - 5 Ton Std Cargo
- M1084A1 - 5 Ton Std Cargo w/HME
- M1085A1 - 5 Ton Long Bed Cargo
- M1086A1 - 5 Ton Long Bed Cargo w/MHE
- M1088A1 - 5 Ton Tractor
- M1089A1 - 5 Ton Wrecker
- M1090A1 - 5 Ton Chassis
- M1093A0 - 5 Ton Cargo (LVAD)
- M1094A1 - 5 Ton Dump (LVAD)
- M1096A1 - 5 Ton Long Chassis
- XM1087A1 Expandable Van
- XM1140 - FMTV High-Mobility Artillery Rocket System (HIMARS)
- XM1157 - FMTV 10 Ton Dump
- XM1148 - FMTV 8.8 Ton LHS
- XM1147 - FMTV LHS Trailer
- M939 - 5 Ton ABS Program



**PM Heavy Tactical Vehicles**  
21 vehicles

- M1070 - Heavy Eqpt Transporter Tractor (HET)
- M977 - HEMTT Cargo w/MHC
- M985 - HEMTT Cargo w/MHC
- M978 - HEMTT Fuel Tanker, 2500 gal
- M983 - HEMTT Tractor
- M984 - HEMTT Wrecker
- M1120 - HEMTT LHS
- M1977 - Common Bridge Transp. (CBT)
- M1142 - Tactical Firefighting Truck (TFTT)
- M1074 - PLS w/variable reach MHC
- M1075 - PLS truck
- M1, M1077/M1077A1 - Flatrack
- M14 - Improved Boat Cradle (IBC)
- M15 - Bridge Adapter Pallet (CBT)
- M3/M3A1 - CROP
- Container Handling Unit (CHU)
- M915A3 - Line Haul Tractor
- M915A4 - Line Haul Tractor Upgrade (Glider)
- M916A3 - Light Equipment Transporter (LET)
- M917A2 - 20 Ton Dump
- M878A2 Yard Tractor



**PM Trailers**  
19 Trailers

- M1101/M1102 - Light Tactical Trailer (LTT)
- M116A3 - ¾ Ton Chassis Trailer
- M103A3 - 1.5 Ton Chassis Trailer
- M149/M1112 - 400 Gallon Water Trailer
- M1022A1 - 7.5 ton Dolly Set
- M1082 - FMTV 2.5 Ton Trailer
- M1095 - FMTV 5 Ton Trailer
- XM1147 - FMTV LHS Trailer
- M871A3 - 22.5 Ton Flatbed Trailer
- M200A1 - 2.5 Ton Chassis Trailer
- Containerized Kitchen Trailer (CKT)
- M989A1 - Heavy Expanded-Mobility Ammunition Trailer (HEMAT)
- M870A3 - 40 ton Low Boy Trailer
- M872A4 - 34 Ton Flatbed Trailer
- M1000 - HET Semi-trailer
- M1076 - PLS Trailer
- Fifth Wheel Towing Device (FWTD)
- M967A2 5000 Gal Bulkhaul Tanker
- M969A3 5000 Gal Refueler Tanker

# *Technology Challenges*

## *Tactical Vehicles*

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### ✦ **Tactical Vehicles and Trailers**

- Improved Mobility
  - Improved Tires
  - Improved Suspensions
- Improved Sustainability
  - Pit Stop Maintenance
  - More Reliable Components
  - Improved Fuel Efficiency
  - Embedded Diagnostics/Prognostics
- Improved Survivability
  - Amor / Mine Protection (Small arms / Improvised Explosive Device - IED - protection, Armor firing ports, Crew served weapons & mounts)
  - Safety Factors (Collision Avoidance, Rollover Protection, Improved Seats/Seatbelts)
  - Climate Control

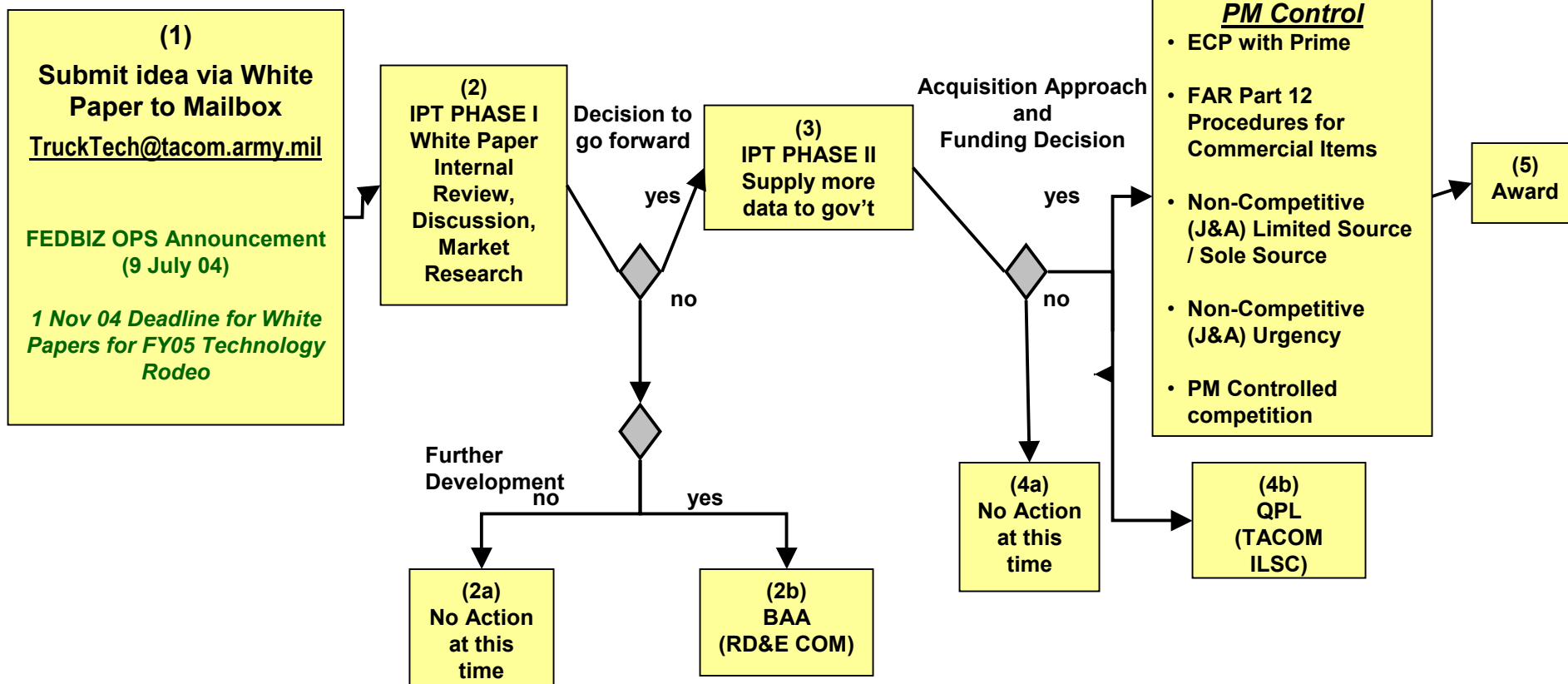
- Improved Transportability
  - Integrated Cargo Handling
  - Operational Environment Effects (Heat, Mileage, Weight, Service Intervals)
- C4ISR
  - Movement Tracking
  - Network Centricity
  - Blue Force Tracking
  - In Transit Visibility



# Expedited Modernization Initiative Procedure

<https://contracting.tacom.army.mil/ssn/sources.htm>

**PARTNERS**  
CG, TACOM  
CG, ATEC  
Chief, Transportation  
PEO CS/CSS  
Dir, TARDEC



# *Summary*

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- ◆ The PEO is open to innovative ideas and concepts
- ◆ The PEO remains relevant in Army Transformation

**<http://peocscss.tacom.army.mil/>**

# **2004 TACOM APBI**



**Government and Industry Unite  
to Support Our Forces**