



# Transformation, Declining Budgets and the Drawdown

APBI

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UNCLASSIFIED

## ***Mission***

Provides full life-cycle engineering support and is provider-of-first-choice for all DOD ground combat and combat support vehicle systems.

## ***Vision***

Develops and integrates the right technology solutions to improve Current Force effectiveness and provide superior capabilities for the Future Force.

- Advanced Research & Development
- Test Analysis
- Quick Reaction Cell
  - Request for Information (RFI)
- Operational Needs Statements (ONS)
- Joint Urgent Operational Needs Statement (JUONS)
- Design Prototype
- Analysis of Alternatives (AoA)
- Engineering Matrix Support to PM
  - TARDEC Reach back support to PM
- Modeling & Simulation
- Tours
- Etc.

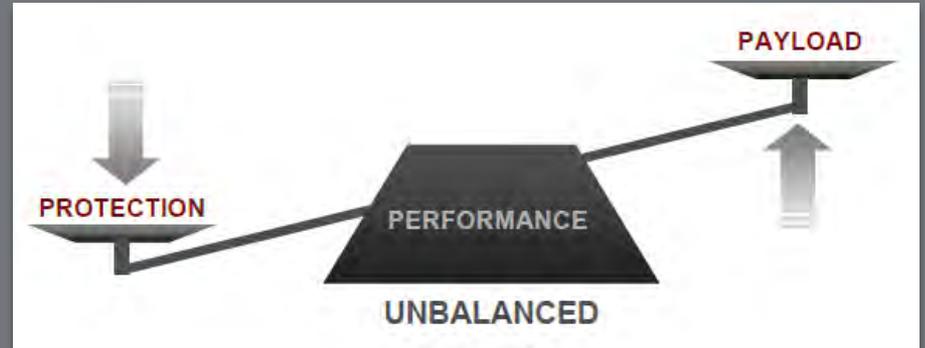
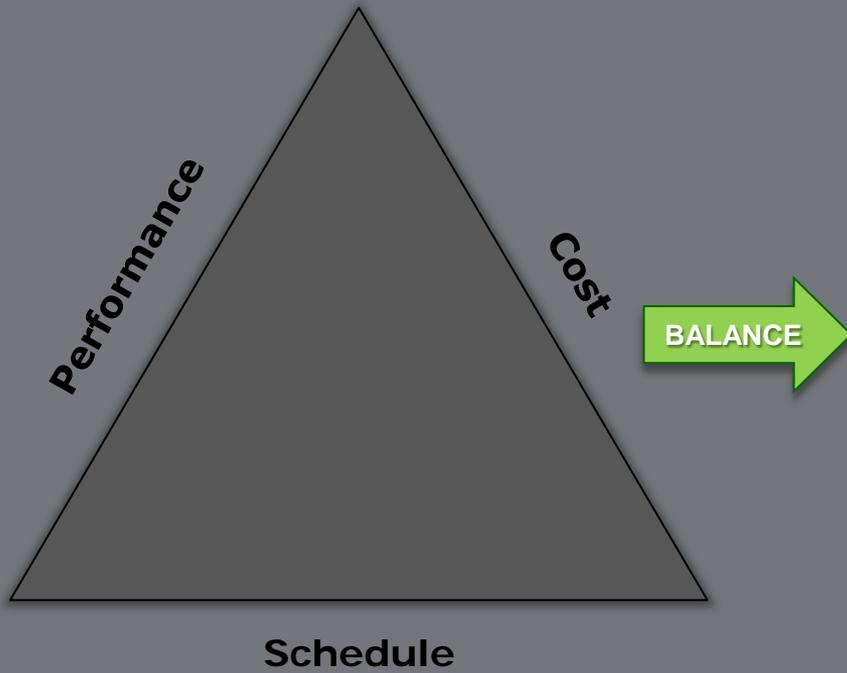




U.S. ARMY  
**RDECOM**  
RESEARCH DEVELOPMENT COMMAND

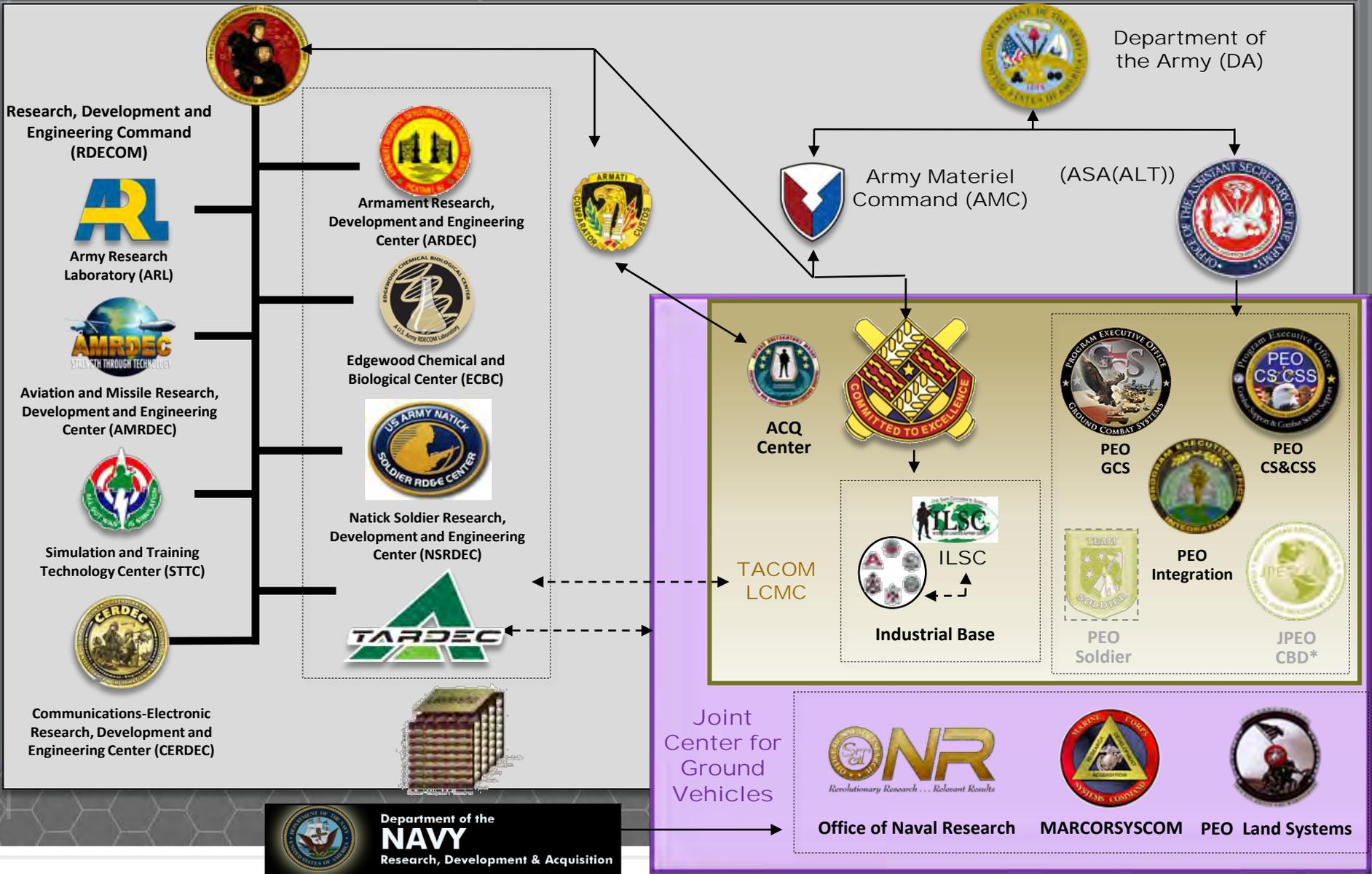


# Challenges





# Ground System Enterprise

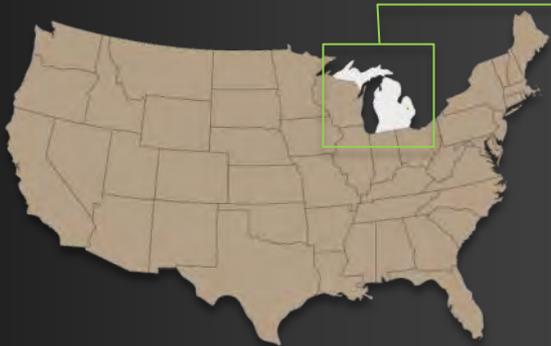




# The Arsenal of Democracy

## Strategic Relationships

- Connected to World-Class Automotive Engineering Universities at our Doorstep
- Defense Industry Ground Systems Hub
- Direct Linkage to World-Class Automotive Research and Development Centers
- Strategic Engagement with 1st, 2nd and 3rd Tier Automotive Supplier Network



The United States





## Key Technical Thrust Areas

- **Ground System Survivability**
- **Vehicle Electronic Architectures**
- **Ground Vehicle Robotics and Intelligent Systems**
- **Ground Systems Power, Energy and Mobility**
- **Force Projection Technology; Alternative Fuels, Lubricants and Water Purification**





# Army Technical Challenge

## More Mobile, Fuel Efficient, Safer Vehicles

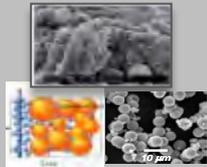
### Mobility & Energy Efficiency

### Occupant Centric Survivability



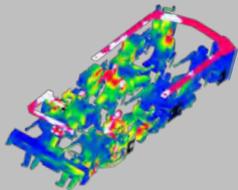
Vehicle Dynamics

Active Protection Systems



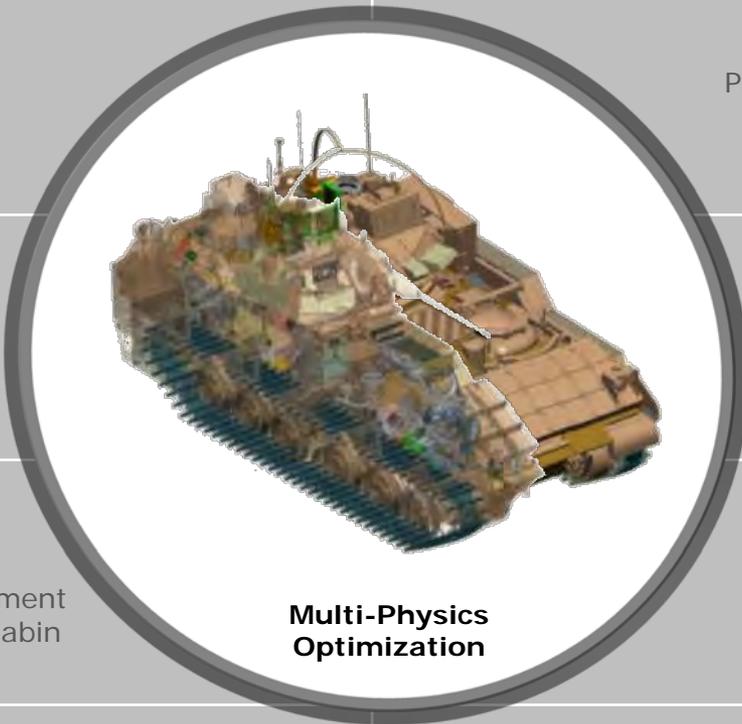
Hi-Energy, Hi-Density Energy Storage

Holistic Occupant Centric Protection

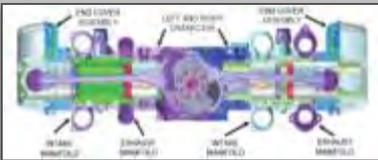


Comprehensive Thermal Management of Propulsion & Cabin

Affordable, Multi-hit Ceramic Armor



Multi-Physics Optimization



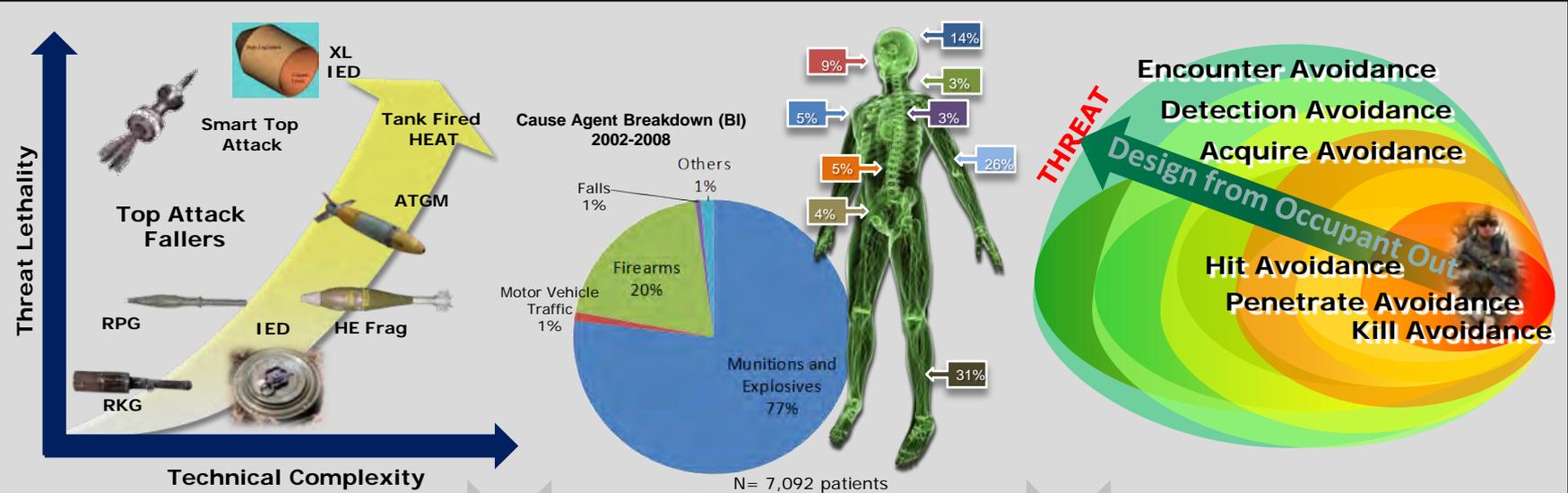
High Power Density, Low Heat Rejection & Fuel Efficient Engines

Fire and Toxic Fume Resistant Materials





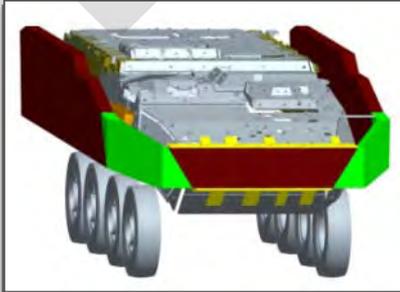
# Ground Systems Survivability



Increasing Demands and Operational Flexibility Require Strategic Investments in Key Areas



Kill Avoidance



Penetration Avoidance



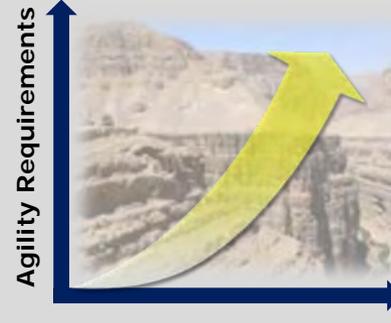
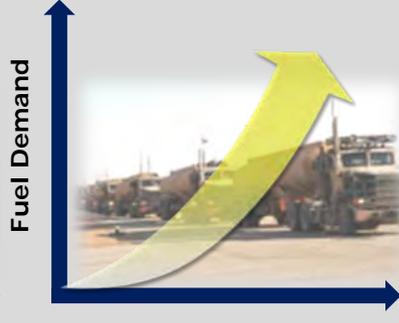
Hit Avoidance



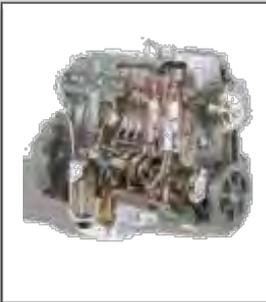
Detection Avoidance



# Ground Systems Power, Energy and Mobility



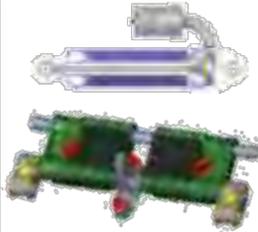
Increasing Demands and Operational Flexibility  
Require Strategic Investments in Key Areas



**Powertrain**



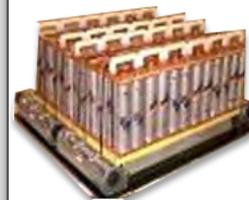
**Thermal Management**



**Track & Suspension**



**Non-Primary Power**



**Energy Storage**



**Advanced Propulsion**



# It's All About the Warfighter

Unclassified FOUO



*Lead. Innovate. Integrate. Deliver.*



# Competitive Opportunities New for FY12

## Research

- Water recycling system
- Wastewater treatment system
- Develop two OBVP concepts
- OPOC engine development
- Power brick development
- High power APU 25-40kW
- Develop engine-off capability
- Battery Management, lead-acid base
- Medium Tactical Powertrain
- Medium Combat Powertrain
- Thermal electrics
- Advanced Battery research
- Structured Robotic Integration
- SIC DC/DC Converter Development

## Analysis

- Technology engineering analysis support

## Lab & Facilities

- 200D shop floor restroom refurbishment
- Shipping and receiving 200E enhancement
- Hydraulic lift removal and re-concrete of PIT
- Battery lab equipment



# Competitive Opportunities New for FY12

## Materials & Components

- Procure Pre-Treatment Test Stand
- Water bottling system
- Water Monitoring Test Equipment
- Hull/Cab build
- Common Disposable Extinguisher
- High-voltage fan motor/controller

## Test

- Water Monitoring Test Equipment
- MIL 810 Test
- Environmental Testing of Active Protection

## Installation

- Fire protection, install equipment
- Head impact fabrication and install



# Ongoing Business Opportunities

## Congressionally Mandated Programs

### Small Business Innovation Research (SBIR)

### Small Business Technology Transfers (STTR)

#### SBIR

- Phase 1: FY11- \$100,000  
FY12- \$150,000
- Phase 2: FY11- \$750,000  
FY12- \$100,000
- \$28 M in FY11/Approx. 200 procurements

#### More Information and opportunities:

<http://www.dodsbir.net/solicitation>

- Solicitation Schedule
- Current Solicitations
- Sample Proposals
- How to create a proposal
- Topic Identification

## Cooperative Research and Development Agreement (CRADA)

- Can be utilized to create innovative collaborative arrangements
- Success Stories:
  - Associate Exchange Program
  - Diminishing Manufacturing CRADA

## Test Services Agreement (TSA)

- Technology transfer mechanism that allows work for hire
- All inventions and data belong to the TSA partner
- Allows industry partners to leverage TARDEC's unique capabilities
- Success Stories Include:
  - Engine Generator Testing
  - Turret Motion Based Simulator



## TARDEC Omnibus

- Awarded August 2009
- 5 Year IDIQ Contract
- Multiple Opportunities to Provide:
  - Engineering, Demonstrators, Designers / Drafters, Workforce Dev, Lab Management / Operations, Research, Corporate Messaging, etc

## Task orders

- Technical/Engineering Support
- Hull/Cab Build
- Technical Engineering Support
- Power brick development
- Develop Engine-off capability
- Battery management, lead-acid base
- Thermal electrics
- Advanced Battery Research
- Low-voltage power systems for VEA research SIL
- SIC DC/DC converter development

**There are  
opportunities to  
work with TARDEC's  
Omnibus Partners!**



## TARDEC Solicitations & Market Surveys Announcements

<http://contracting.tacom.army.mil/>

POC: Mr. James Biga  
(586) 282-8637  
James.biga@us.army.mil





## Doing Business with TARDEC



**TARDEC's Ground Vehicle Gateway  
is YOUR entry point!**

**Submit your technology for review  
<https://tardec.groundvehiclegateway.com>**

