



U.S. ARMY TANK AUTOMOTIVE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

# Advancing the TWV Fleet

10 May 2016

Mr. Magid Athnasios, SES  
TARDEC Executive Director  
Systems Integration and Engineering



## Mission and Vision



### **MISSION:**

Develop, integrate and sustain the right technology solutions for all manned and unmanned Department of Defense(DOD) ground systems and combat support systems to improve Current Force effectiveness and provide superior capabilities for the Future Force.



### **VISION:**

The first choice of technology and engineering expertise for ground vehicle systems and support equipment – today and tomorrow.

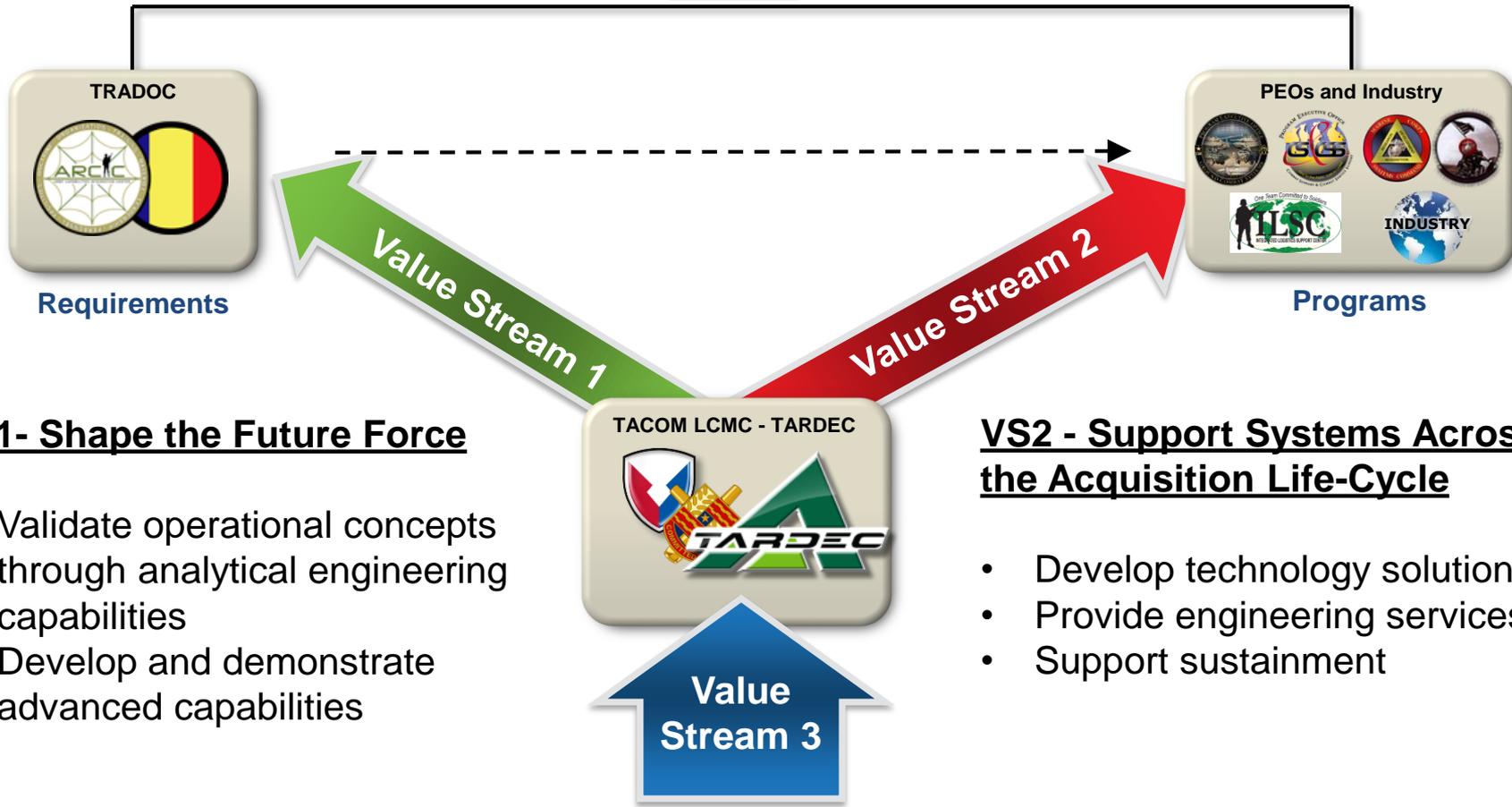
**We help our Warfighters succeed and come home alive**

# Shaping the Future – TARDEC’s 30 Year Strategy



**Utilizing Army doctrine and strategic documents that provide the Army with modular, flexible, adaptable, and smart S&T capabilities.**

# TARDEC's Support to the Army



## VS1- Shape the Future Force

- Validate operational concepts through analytical engineering capabilities
- Develop and demonstrate advanced capabilities

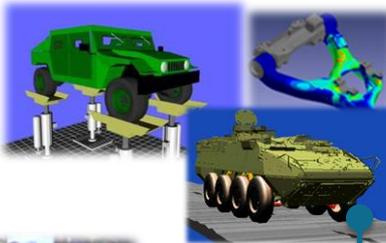
## VS2 - Support Systems Across the Acquisition Life-Cycle

- Develop technology solutions
- Provide engineering services
- Support sustainment

***TARDEC's vision is to be the first choice of technology and engineering expertise for ground vehicle systems and support equipment – today & tomorrow.***

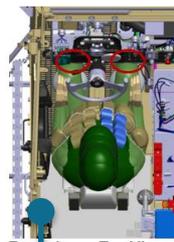
# Digital-Physical Thread (DPT)

Multidisciplinary Design Optimization & Performance



Trade/Cost Studies

Human Factors & Packaging



Operational Assessment

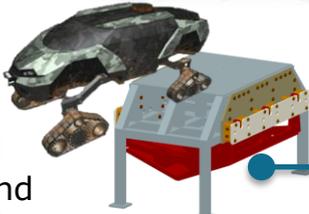
System Integration Lab Assessment



Virtual Experiments Capability



Advanced Concepts and Digital Modeling



Soldier Innovation Workshops



Full Field Experimentation



Man-in-the-Loop Simulation



Product Development



Physical Comp. Simulation



Physical System Simulation



**TARDEC's DPT Accelerates Innovation by Enabling Rapid Development of Future Capabilities**

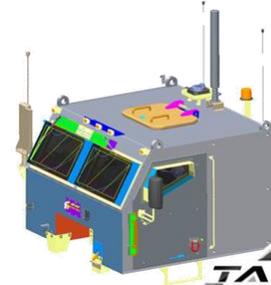


# TARDEC Efforts Supporting the TWV Fleet



Autonomy-Enabled Manned / Unmanned Vehicles

HET Urban Survivability kit (HUSK)



Systems Integration Labs (SIL)



JTTS Modular Chassis Concept Approach



## Leveraging TARDEC's Core Competencies/Technical Authority to:

- Expand internal capabilities while fostering strong public-private partnerships
- Accelerate development of autonomous technologies and platforms
- Enable rapid fielding of lessons learned from theater
- Reduce costs through common modular interfaces and components

**Strategically Committed to Advancing TWV Capabilities**

# Shaping the Future of Autonomous TWV



2006-2012  
Army S&T Convoy Active  
Safety Technologies

2012-2014  
Autonomous Mobility Applique System  
Joint Capability Technology Demonstrator

2015 - 2021  
Army S&T Autonomous Ground Resupply



## Placing Systems in User's Hands to Gain Experience & Enhance Operational Utility

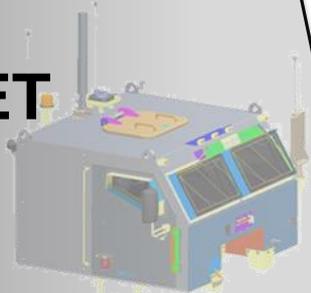
# HUSK - Enhancing the Existing Fleet



**Heavy Equipment Transporter A1 (HETA1)**



**HET**



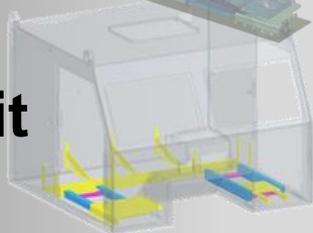
**Urban**



**Survivability**



**Kit**



- TARDEC developed solution to bring MRAP CPD 1.1 protection level to existing HETA1 chassis
- Aluminum monocoque design integrates armor into structure
- Saves 2,500 lbs over original B-Kit design intent
- Remains compatible with all HETA1 mission-essential equipment
- Developing complete developmental Technical Data Package (TDP) to allow PM to solicit industry for future production needs
- Incorporates suite of survivability technology developed by TARDEC S&T

**MRAP protection**



**TARDEC**

VALUE STREAM 1: Shape the Future Force

VALUE STREAM 2: Support Systems Across the Acquisition Lifecycle

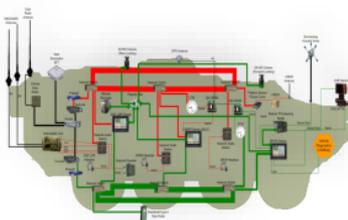
VALUE STREAM 3: Strengthen Foundational Competencies

**Strategically Partnered with PMs to Integrate Best of Breed Technology on Legacy Platforms**

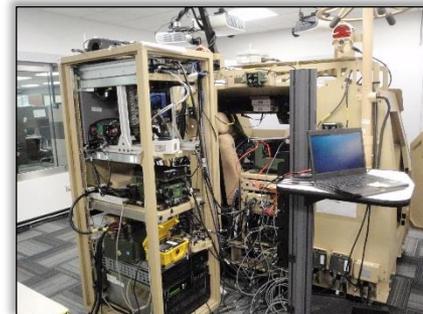
# System Integration Labs Bring Strategy to Life



## Research SIL Capabilities



## Platform SIL Capabilities



Utilized for technology development:

- Evaluate production systems before build
- Test emerging technologies
- Ensure hardware and software compliance

Conducted on existing platforms to:

- Test upgraded technology
- Validate interoperability of equipment
- Provide spare part options

**TARDEC SILs are the Army's hub for ground vehicle integration and entry points for Industry partnerships.**



# Partner with TARDEC



Visit TARDEC's Web Site  
[www.army.mil/TARDEC](http://www.army.mil/TARDEC) for details:

- **TARDEC Capabilities**
- **30-Year Strategy**
- **New Opportunities**

Connect with us through our Ground Vehicle Gateway (online) to submit:

- **New Proposals**
- **Technology Plans**



**We Need Your Help to Shape the Future of the Army and Deliver Advanced Capabilities to the Warfighter**