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TACOM LCMC INDUSTRIAL BASE NETWORKING SUMMIT

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25 MAR, 2010

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**Provide an introduction to the U.S. Army Tank
Automotive Research, Development and
Engineering Center's (TARDEC's) programs,
capabilities and facilities as related to LCMC
Industrial Base Support**



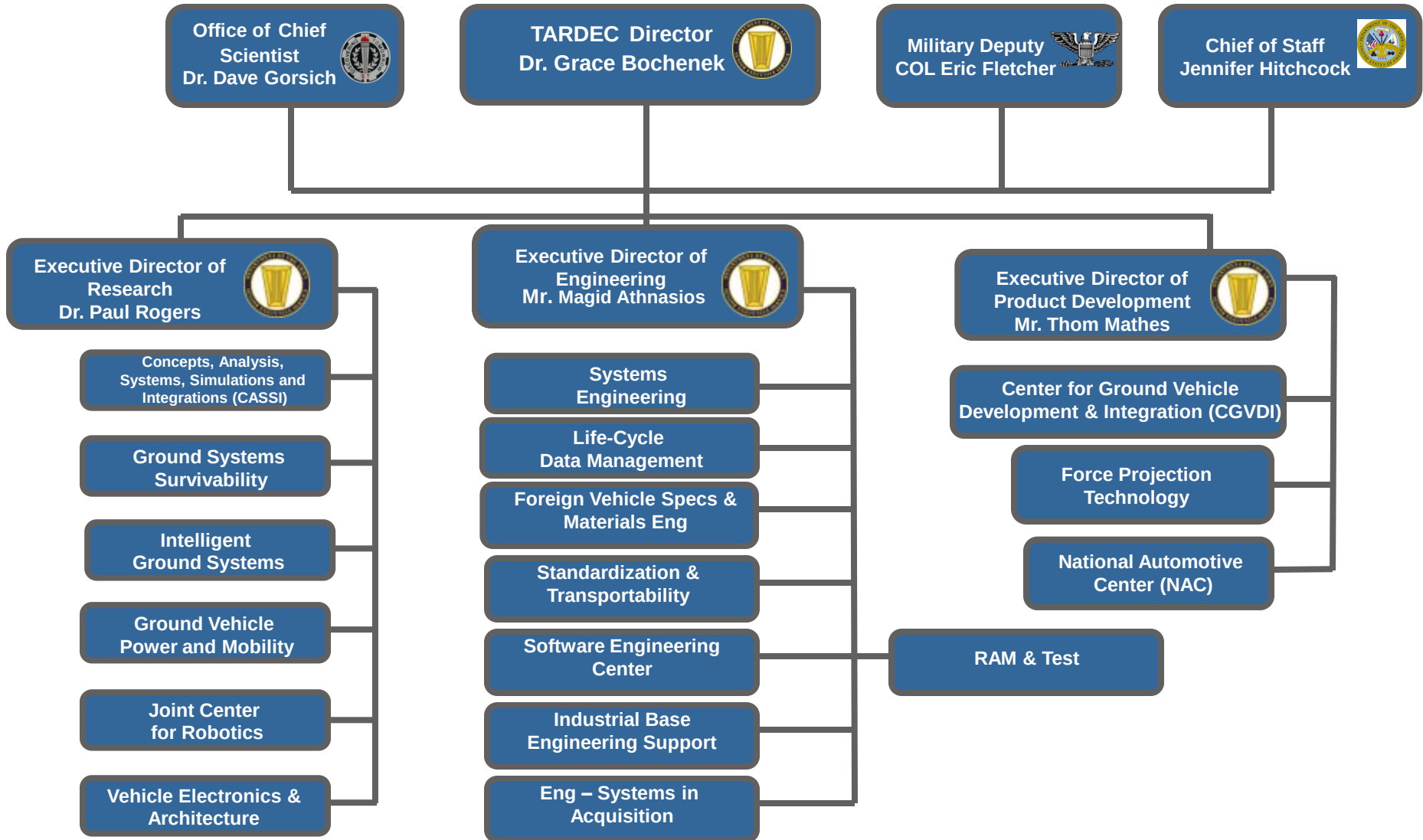
- **TARDEC Mission**
- **TARDEC Organization**
- **TARDEC Industrial Base Support**
 - **Industrial Base Engineering Support**
 - **Sustainment Engineering**
 - **Manufacturing Technology**
 - **Depot/Arsenal Support**
 - **Materials Environmental & Corrosion**
 - **Vehicle Development & Integration**
- **Summary/Questions**

- Provides full life-cycle engineering support and is provider-of-first-choice for all DOD ground combat and combat support vehicle systems.
- Develops and integrates the right technology solutions to improve Current Force effectiveness and provide superior capabilities for the Future Force.

*Ground Systems Integrator
for the Department of Defense*



Responsible for Research, Development and Engineering Support to 2,800 Army systems and many of the Army's and DOD's Top Joint Warfighter Development Programs

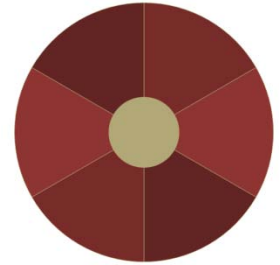




What is TARDEC's Industrial Base Mission?

Industrial Base Support:

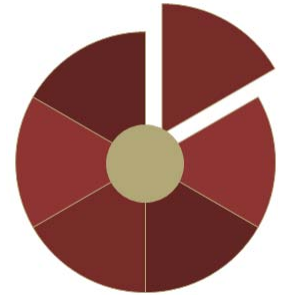
- LCMC Industrial Base Integration Team (IBIT) Participation
- TARDEC Industrial Base Engineering Team (IBET)
- Advanced Manufacturing Technology (AMT)
- Diminishing Manufacturing Sources and Material Shortages (DMSMS)
- Depot Liaison Rotation Program
- Prototype Integration Facilities (PIF)



Sustainment Engineering Support:

- Value Engineering (VE)
- Operating & Support Cost Reduction (OSCR)
- Quality Deficiency Report (QDR)
- Integrated Collaboration & Analysis Process (ICAP)
- Industrial Base Engineering Team (IBET) (For sustainment issues)
- DLA Engineering Support (DLA 339)
- Depot Liaison Rotation Program (For platform issues)
- Diminishing Manufacturing Sources and Material Shortages (DMSMS) (For platform issues)
- Equipment/User Feedback (OSMIS, SDC, AMSAA, C-REPS, QDRs)

Industrial Base Engineering Team (IBET)

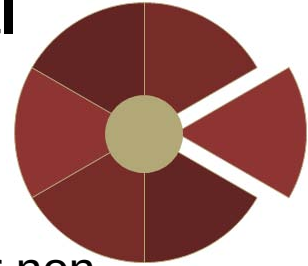


TARDEC Engineers:

- Support LCMC Industrial Base requirements
- Provide investigation
- Leverage experience, capability & expertise
- Provide quick response to problems
- Support proactive management
- Improve LCMC communication
- Apply disciplined processes
- Implement LCMC wide solutions (standardization)

TARDEC POC: IBET Team Leader, Mr. Tony Mitek
(586) 282-6172, tony.mitek@us.army.mil

Diminishing Manufacturing Sources & Material Shortages (DMSMS)

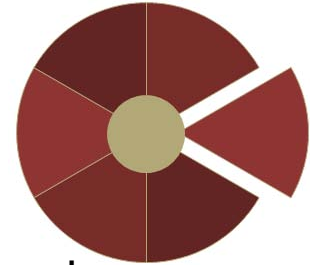


TARDEC Engineers:

- Monitor, identify, and resolve industrial manufacturing risk or non-support conditions
- Address Occupational Safety Health Administration (OSHA), Environmental Protection Agency (EPA), Society Of Engineers (SAE) initiatives
- Eliminate or minimize impact and / or reduce operating and support costs for equipment supported by the TACOM LCMC
- Provide TACOM LCMC Managers maximum visibility of support options
- Identify current suppliers as well as those who have not historically conducted business with the government
- Manage the DMSMS Contract to access commercial industry

TARDEC POCs: DMSMS Action Officer, Mr. Brian Suma
(586) 282-6407, brian.suma@us.army.mil

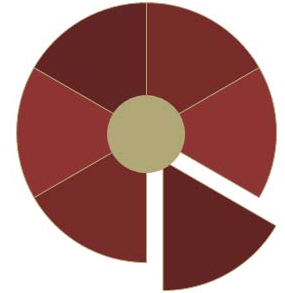
Diminishing Manufacturing Sources and Material Shortages



- Automation Alley, Michigan's largest technology business association, is currently on contract with TARDEC to provide industrial base support for the TACOM LCMC Diminishing Manufacturing Sources and Material Shortages (DMSMS) program
- The contract with Automation Alley has created a capability to establish commercial industrial base visibility and communicate TACOM LCMC requirements with companies across the United States
- How can companies become involved?
 - Companies can register by visiting www.dmsms-tardec-army.com or by calling Automation Alley (800) 427-5100 for more details
 - Your information will be logged in the DMSMS database and you will receive communications regarding upcoming initiatives

**TARDEC POC: DMSMS Contract Officer's Representative, Mr. Stan Michener
(586) 282-8728, stan.michener@us.army.mil**

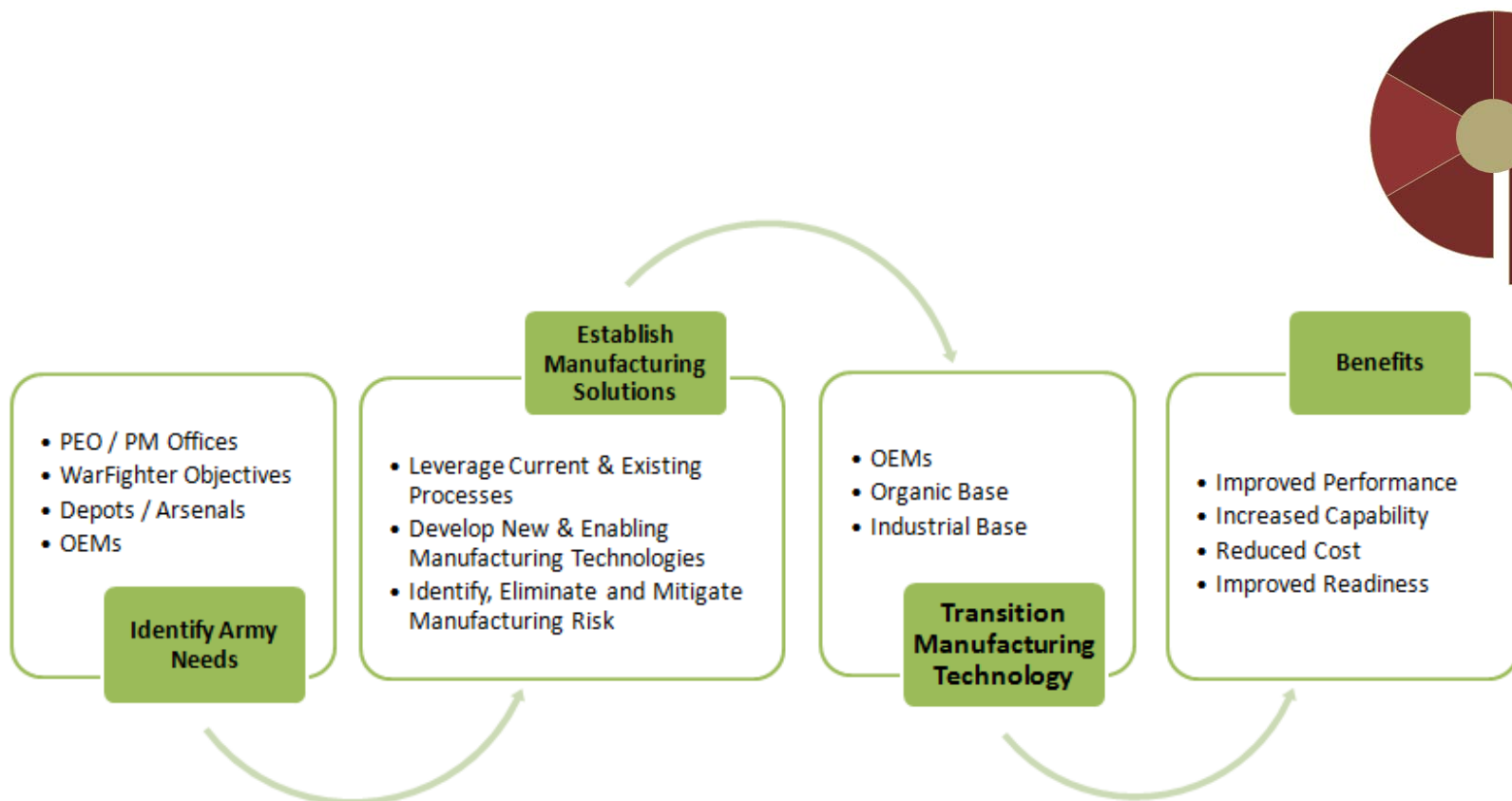
Advanced Manufacturing Technology Team (AMTT)

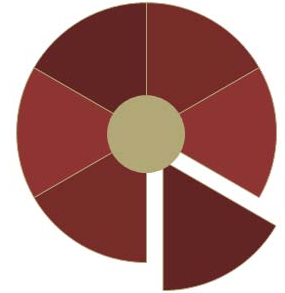
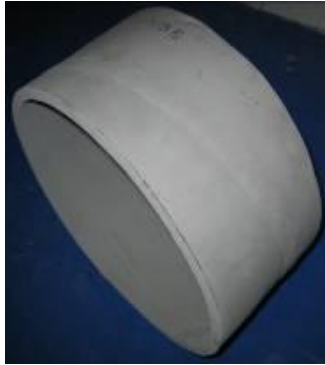


TARDEC Engineers:

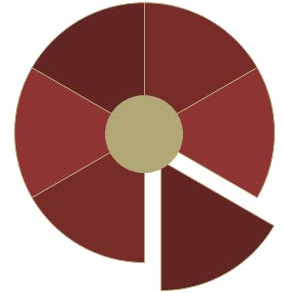
- Are involved early enough to address manufacturing issues
- Identify manufacturing maturity levels
- Conduct manufacturing Assessments for Risk Reduction
- Provide opportunities for process improvement
- Enable Manufacturing Technology Transfer
- Support development of manufacturing capability

TARDEC POC: AMT Team Leader, Mr. Tom Altobelli
(586) 282-8708, tom.altobelli@us.army.mil





- Extrudes net shapes or a formable mix, such as Metal Matrix Composites (MMC) material
- The integrated automated manufacturing process, relies on minimal labor and produces superior quality and quantity over current manufacturing mixing processes
- Offers a 45% weight reduction compared to that of a standard brake drum produced from ductile iron
- Implementation of this technology will serve to reduce weight and fuel consumption while increasing payload, crew protection and reliability

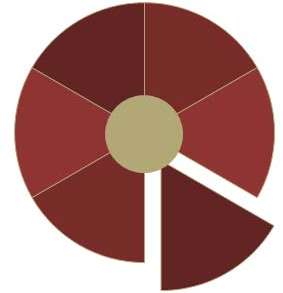


Provides Manufacturing Solutions At Point Of Need To Ensure Soldier Readiness

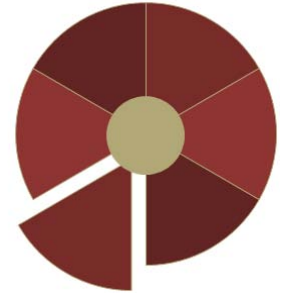
- A self-contained, self-sustaining, mobile mini-manufacturing system that can efficiently fabricate standard and unique parts at the point of need
- Lathe modules deployed at 4 strategic SWA locations
- Concepts & prototype units developed by TARDEC
- Transitioned to PM SKOT in 2005
- Fully transitioned (IBO) in 2007



- Integrated scanning technology with reverse engineering and quality assurance operations at the Anniston Army Depot in July 2009
- Parts are scanned into a cloud of points that are then converted into a CAD file
- The scanning and manufacturing process integration provides new capabilities that advanced manufacturing systems might otherwise overlook such as:
 - broken parts that can be scanned and digitally repaired or “stitched” together
 - more complex surfaces (i.e. turbine blades) that can be fully modeled and verified
 - part repair that can be improved by identifying where additional material should be added



Depots/Arsenals Liaison Program

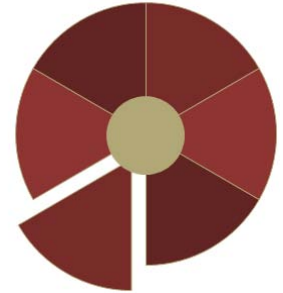


TARDEC Engineers:

- Participate in Developmental Assignments
- Have 6 to 24 months experience
- Rotate on-site assignments of 60 to 90 Days
- Are exposed to programs & issue experience
- Attend bi-weekly VTC with LCMC (PEO/PM/TARDEC/ILSC)
- Attend monthly WPU with LCMC & AMC
- Link experience and expertise between TACOM LCMC and the depots and arsenals
- Provide engineering support to assist with problem investigation, resolution and/or implementation
- Create synergies and standardization opportunities across the TACOM LCMC organizations and platforms
- Support individual and career development

Implemented to date:

- ANAD, JAN 2009
- RRAD, JAN 2010

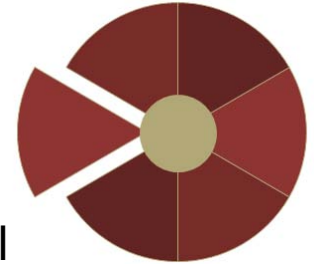


Example Issues:

- Hexavalent Chromium/Cadmium (RRAD)
- Common Adhesive (ANAD)
- AVL B Pressure Plate (ANAD)
- Paladin Corrosion (ANAD)
- Abrams Transmission Line (ANAD)

TARDEC POC: Depot Liaison Action Officer, Ms. Adrennia Hughley
(586) 282-8450, adrennia.hughley@us.army.mil

Materials Environmental & Corrosion



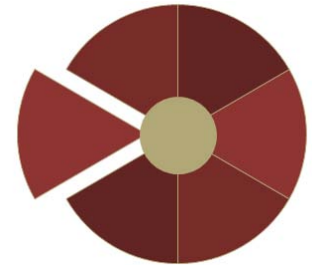
TARDEC Engineers:

- Provide Corrosion Prevention, Materials, Environmental and Engineering support to TACOM/LCMC
 - Provide corrosion prevention
 - Resolve environmental issues
 - Provide Programmatic Environmental, Safety, and Health Evaluation (PESHE), and eliminating hazardous materials
 - Obtain EPA national security exemptions
 - Find alternative for hazardous materials
 - Research new products
 - Review scope of works
 - Provide product design alternatives

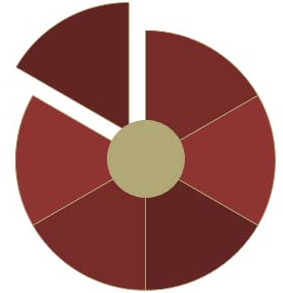
TARDEC POC: CPC Team Leader, Mr. Ali Baziari

(586) 282-8818, ali.baziari@us.army.mil

- Corrosion prevention training for design engineers
 - New corrosion resistant materials
 - New design considerations
 - New finishing techniques
- Controlled humidity protection
 - Fully humidity controlled building
 - Humidity controlled system for individual pieces of equipment
 - Environmentally sealed bags
- New paint and application technologies
 - Water-based CARC and primer
 - Cartridge application technologies
- Repair initial stages of corrosion
 - Category II repairs (surface preparation/prime/paint)
- Application of corrosion preventive compounds
 - Reduce the progression of corrosion



Center for Ground Vehicle Development & Integration (CGVDI)



TARDEC Engineers:

- Are a one stop center for design and development
- Develop system and sub-systems
- Fabricate prototypes
- Provide development integration
- Identify and apply advanced technology

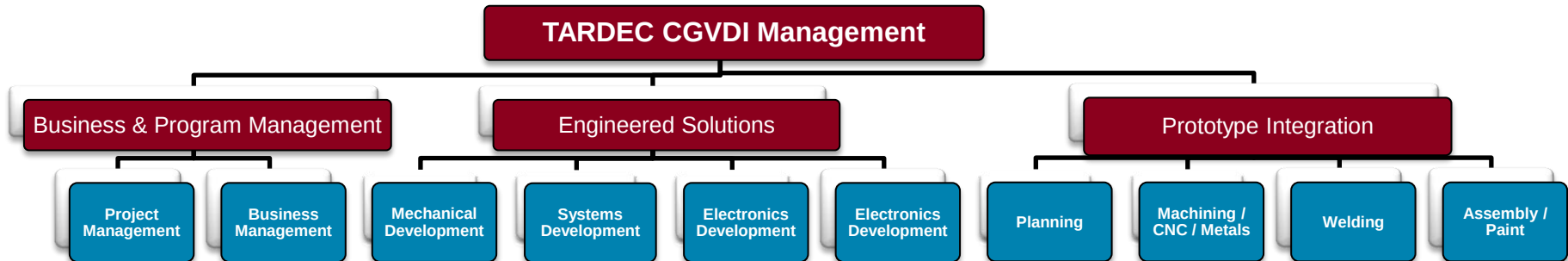
TARDEC POCs: Mr. Bruce Brendle

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Mr. Luis Hinojosa

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Bridging the gap between R&D, Production and Fielding through Rapid Prototyping



Quick Turnaround Environment - Highly Flexible

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HMMWV Egress Assistance Trainer (HEAT)

Reduce fatalities in rollover events by safely training soldiers on the proper procedure to exit a rolled-over HMMWV.



Electronic Tip-down Antenna System (ETAS)

Allows Soldiers to simultaneously maneuver numerous antennas into a retracted or normal position to access areas with lower clearance levels



Battery Powered Motorized Traversing Unit (BPMTU)

Powered traversing capability for HMMWV turrets, allowing Soldier to use joystick to easily rotate the gunner and to fight from behind armor and ballistic glass



Construction Equipment Add-on-Armor

IHMEE HYEX ATLAS ATEC

Armor kits for various construction vehicle to protect engineering crews who are working in potentially dangerous areas



HMMWV Armor Survivability Kits (ASK)

Provides a field installable, expedient armor solution for HMMWV side ballistic threats



MRAP Expedient Armor Program (MEAP)

Provide protection at the medium threat level (minimum) for MRAP I vehicles



MRAP Gunner Restraint System (GRS)

Secure MRAP Gunners in turret to avoid ejection from vehicle



MRAP Egress Trainer (MET)

Train Soldiers on how to safely exit MRAP in the event of a rollover



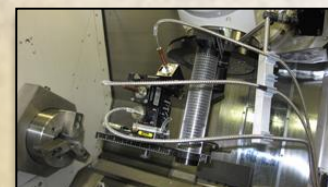
Overhead Wire Mitigation (OWM)

Allows MRAP vehicles to avoid pulling down low hanging lines, and to prevent contact with high-voltage lines



Self Protective Adaptive Roller Kit (SPARK)

Provides additional stand-off to the vehicle and crew against pressure activated or Victim Operated Improvised Explosive Devices





For more information please visit us at:

<http://tardec.army.mil>

<https://tardec.groundvehiclegateway.com/>

