

INDUSTRIAL BASE NETWORKING SUMMIT 2011



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STRATEGIC ALLIANCES
MAKING A DIFFERENCE ONE WARFIGHTER AT A TIME
EVERY MANHOUR AND WRENCH TURN COUNTS

Report Documentation Page

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TARDEC Mission

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- 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.



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

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What is TARDEC's Industrial Base Mission?

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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
- ✓ Center for Ground Vehicle Development & Integration (CGVDI)

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 (Platform issues)
- ✓ Diminishing Manufacturing Sources and Material Shortages (DMSMS) (Platform)
- ✓ Equipment/User Feedback (OSMIS, SDC, AMSAA, C-REPS, QDRs)

Sustainment Engineering Risk Assessments (SERA)

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- **Scope** – The effort will proactively evaluate and identify industrial base related obsolescence and sustainment risk, by leveraging existing available data.
- **Process** – Define Target Equipment, Configurations, Densities, OEM Information, and Support Strategies.
- **Benefits**
 - Evaluation of all known support risks.
 - Allows the Managers to tailor risk factors.
 - Allow for Pro-Active vs. Re-Active measures.
- **Status**

In Progress

- M915 FOV - 60% complete
- SUSV - 70% complete
- Abrams – 10% complete

Planned

- DSETS
- AVLB
- Trailers
- M113

- **Leverage Automation Alley**
 - Database of over 17,000 TACOM and DLA Suppliers.
 - Ability to pull data for Industrial Base Health Assessments and SERAs.

Depot / Arsenal Support

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Mission

- ❖ The goal of this program is to create synergies among the different areas within the TACOM LCMC and Depot communities. Providing an on-site engineer will increase collaborative opportunities to assist with issues and proposed resolutions.

ANAD, JAN 2009 – Issue Examples:

- ❖ Common Adhesive - Paladin/FAASV Transmission
- ❖ Paladin Corrosion - AVL B Pressure Plate

RRAD, JAN 2010 - Issue Examples:

- ❖ Hexavalent Chromium/Cadmium
- ❖ PLS & HET Engine Rebuild Test Specifications

TARDCE POC: Depot Liaison Action Officer:

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- ❖ Darin Kennedy, darin.l.kennedy@us.army.mil

Vehicle Development & Integration

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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

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Exploiting Strategic Relationships is Key to Innovation



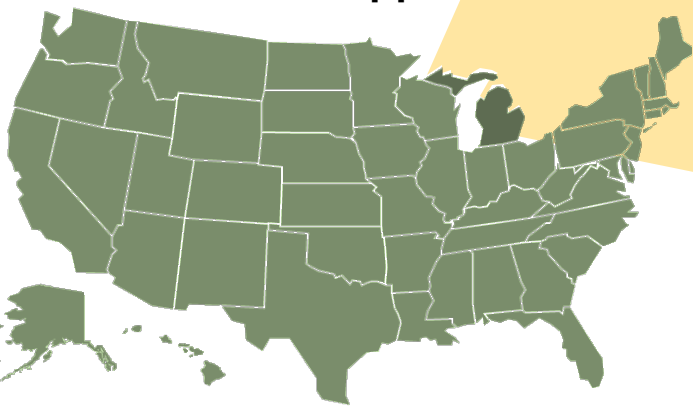
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Geographic Benefits

- 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

MichiganTech

CMU



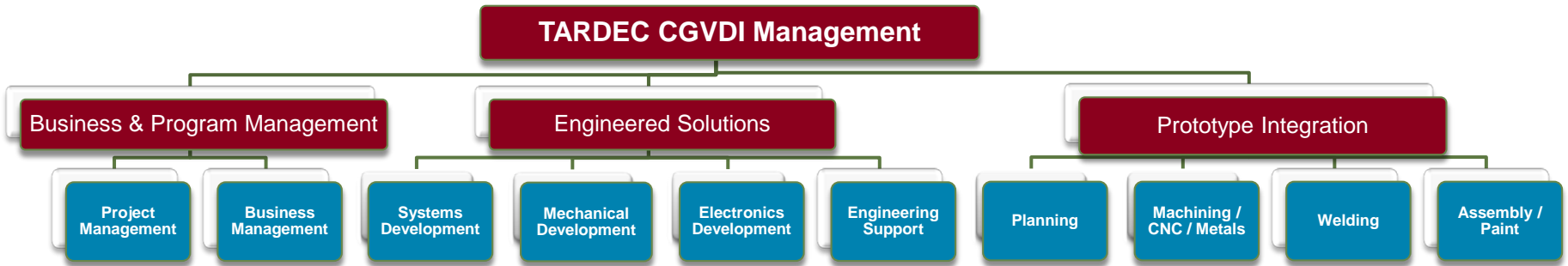
Most Robust Automotive Engineering Expertise & Academia Institutions in the World

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Vehicle Development & Integration

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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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Advanced Manufacturing Technology

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Advanced Manufacturing Technology Team (AMTT)

- Will be involved early enough to address manufacturing issues and conduct manufacturing Assessments for Risk Reduction
- Identify manufacturing maturity levels (MRL)
- Provide and help develop opportunities for process improvement
- Enable and Drive Manufacturing Technology Transfer
- Support development and delivery of advanced manufacturing capabilities improvement

POC - Tom Altobelli – AMTT, Team Lead

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MANUFACTURING TECHNOLOGY

PROJECT PORTFOLIO AND PROPOSALS

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DEFORMATION RESISTANCE WELDING

- Tubular Structural welding, Light weight structures

COMBINED PLASMA-MIG ARC WELDING

- Faster than any other wire-feed hand welding
- Robotic control for improved quality and speed

ROBOTIC 3-D WATER JET CUTTING

- Low Volume part production with low cost tooling
- Highly precise

DIRECT METAL DEPOSITION

- Part repair and reclamation

CAST QUICK REACTION CELL

- Part replacement with low-cost tooling investment
- Part replacement on site

FRICTION STIR WELDING/PROCESSING

- Low Heat Stress Welding
- Robotic controlled = High Quality

FRICTION APPURTENANCE WELDING

- Robotic Controlled = High Quality
- Reduction in Touch Labor
- Reconfigurable Manufacturing



ROBOTIC AND AUTOMATION MANUFACTURING ASSISTANCE

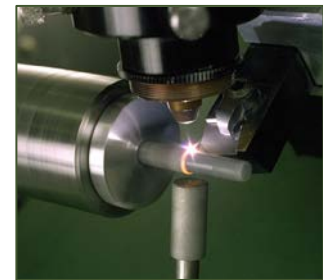
- Robotic CARC Painting
- Robotic manufacturing, engine block cleaning
- Lift assist, load assist, large assembly installation

MODELING AND SIMULATION IN MANUFACTURING

- Manufacturing M&S
- M&S system interface with design

ADVANCED MANUFACTURING TECHNOLOGY INTEGRATION

- Flexible Manufacturing, reconfigurable manufacturing
- Light weight materials manufacturing
- Advanced Additive/Reductive Material Processing
- Advanced Manufacturing Quality Assurance Technology



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Backup Information

Organizational Structure



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Recent Partnering Examples

Best Practices:



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- Red River Army Depot (RRAD)
- HMMWV Egress Assistance Trainer (HEAT)
 - MRAP Egress Training (MET)
 - M939/HEMTT Gunner Restraint System (GRS)



- Blue Grass Army Depot (BGAD)
- Overhead Wire Mitigation (OWM)
 - Universal Combat Lock Tool (UCLT)
 - MRAP Expedient Armor Program (MEAP)
 - MRAP Gunner Restraint System



- Letterkenny Army Depot (LEAD)
- RG-31 TALON Robotic Deployment System
 - Combat Identification Panels
 - HMMWV Armor Survivability Kits



- Sierra Army Depot
- WAR Reserve Fuel Tanker (WRFT)



- Rock Island Arsenal
- Commercial Vehicle Armor Kits



- Edgewood Chemical and Biological Center (ECBC)
- MRAP Gunner Restraint System (GRS)
 - Visual Modification: MRAP Cougar



- Army Research Laboratory (ARL)
- Interim High Mobility Engineering Excavator (IHMEE) Add-on Armor Kits
 - MRAP Expedient Armor Program (MEAP)

