### 1. REPORT DATE
12 MAR 2011

### 2. REPORT TYPE
Briefing Charts

### 3. DATES COVERED
12-11-2010 to 22-02-2011

### 4. TITLE AND SUBTITLE
Strategic Alliances Making a Difference One Warfighter At a Time

### 6. AUTHOR(S)
Randal Gaereminck

### 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army TARDEC, 6501 East Eleven Mile Rd, Warren, Mi, 48397-5000

### 8. PERFORMING ORGANIZATION REPORT NUMBER
#21576

### 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army TARDEC, 6501 East Eleven Mile Rd, Warren, Mi, 48397-5000

### 10. SPONSOR/MONITOR’S ACRONYM(S)
TARDEC

### 11. SPONSOR/MONITOR’S REPORT NUMBER(S)
#21576

### 12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

### 13. SUPPLEMENTARY NOTES
Industrial Base Networking Summit 2011

### 14. ABSTRACT
- Early collaboration with RDECOM PIFs to expedite the development of initial prototype(s) to validate design/support test. - Limited Prototype(s) Fabrication for User Assessments/Safety Certifications. - Limited Production, when required, to bridge TDP development / transition to Depot to meet / expedite customer requirements. - Early project coordination with LCMC IBO Depot and/or RDECOM RDECs to transition TDP to Depot partner or RDECOM RDEC PIF. - Additional capacity could be combination of re-prioritizations and surge utilizing other RDEC PIFs or Depots.

### 15. SUBJECT TERMS

### 16. SECURITY CLASSIFICATION OF:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. REPORT</td>
<td>b. ABSTRACT</td>
<td>c. THIS PAGE</td>
</tr>
<tr>
<td>unclassified</td>
<td>unclassified</td>
<td>unclassified</td>
</tr>
</tbody>
</table>

### 17. LIMITATION OF ABSTRACT
Public Release

### 18. NUMBER OF PAGES
14

### 19a. NAME OF RESPONSIBLE PERSON

---

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
TARDEC Mission

– 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
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
- 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)
Industrial Based Engineering Team (IBET)

TARDEC’s priority – Support the Fight!

Our Mission is to develop, integrate, and sustain the right technology solutions for all manned and unmanned DOD ground systems and combat support systems to improve Current Force effectiveness and provide superior capabilities for the Future Force.

Continue fostering relationships with the TACOM-LCMC, Industry & Academia.

Support Functions:

• Sustainment Engineering Risk Assessments (SERA)
• Depot Liaison
• DMSMS & Obsolescence Management

Tony Mitek
IBET, Team Lead
tony.mitek@us.army.mil
586-282-4968

UNCLASSIFIED
Sustainment Engineering Risk Assessments (SERA)

- **Scope** – The effort will proactively evaluate and identify industrial base related obsolescence and sustainment risk, by leveraging existing available data.


- **Benefits**
  - Evaluation of all known support risks.
  - Allows the Managers to tailor risk factors.
  - Allow for Pro-Active vs. Re-Active measures.

- **Status**
  
<table>
<thead>
<tr>
<th>In Progress</th>
<th>Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>M915 FOV - 60% complete</td>
<td>DSETS</td>
</tr>
<tr>
<td>SUSV - 70% complete</td>
<td>AVLBB</td>
</tr>
<tr>
<td>Abrams – 10% complete</td>
<td>Trailers</td>
</tr>
<tr>
<td></td>
<td>M113</td>
</tr>
</tbody>
</table>

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

RRAD, JAN 2010 - Issue Examples:

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

TARDCE POC: Depot Liaison Action Officer:

- Adrennia Hughley, adrennia.hughley@us.army.mil
- Darin Kennedy, darin.l.kennedy@us.army.mil
Vehicle Development & Integration

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: Dr. Bruce Brendle
(586) 282-5798, bruce.brendle@us.army.mil
Mr. Luis Hinojosa
(586) 282-8721, luis.hinojosa@us.army.mil
Exploiting Strategic Relationships is Key to Innovation

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

Most Robust Automotive Engineering Expertise & Academia Institutions in the World
Vehicle Development & Integration

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

**Design**
- Mechanical, Electrical, Electronics
- Assessment and Analysis
- Detailed Design
- 3D Modeling
- Bill of Materials

**Fabrication**
- Quick Reaction of Components
- Specialized Cable/Wiring Harness
- CAD/CAM CNC Programming
- Quick reaction of parts
  - CNC, Lathes, Mills, Water Jet/Laser Cutting

**Integration**
- Field-Experienced Veterans
- Component, Subsystems & Vehicles
- Across Spectrum of all DoD Ground Vehicles
- Installation Instructions

**TARDEC CGVDI Management**

**Business & Program Management**
- Project Management
- Business Management

**Engineered Solutions**
- Systems Development
- Mechanical Development
- Electronics Development
- Engineering Support

**Prototype Integration**
- Planning
- Machining/CNC/Metals
- Welding
- Assembly/Paint

Quick Turnaround Environment - Highly Flexible
Advanced Manufacturing Technology

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
tom.altobelli@us.army.mil
586-282-8708
MANUFACTURING TECHNOLOGY
PROJECT PORTFOLIO AND PROPOSALS

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

UNCLASSIFIED
Backup Information
Center for Ground Vehicle Development and Integration (CGVDI) Partnerships

Recent Partnering Examples

**Best Practices:**

- Early collaboration with RDECOM PIFs to expedite the development of initial prototype(s) to validate design/support test.

- Limited Prototype(s) Fabrication for User Assessments/Safety Certifications.

- Limited Production, when required, to bridge TDP development/transition to Depot to meet/expedite customer requirements.

- Early project coordination with LCMC IBO Depot and/or RDECOM RDECs to transition TDP to Depot partner or RDECOM RDEC PIF.

- Additional capacity could be combination of re-prioritizations and surge utilizing other RDEC PIFs or Depots.

---

**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 (IHME) Add-on Armor Kits
- MRAP Expedient Armor Program (MEAP)