



UNCLASSIFIED: Dist A. Approved for public release



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Center for Ground Vehicle Development and Integration

Overview - 22 April 2011

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 22 APR 2011		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Center for Ground Vehicle Development and Integration			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Army RDECOM-TARDEC 6501 E 11 Mile Rd Warren, MI 48397-5000, USA			8. PERFORMING ORGANIZATION REPORT NUMBER 21798		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army RDECOM-TARDEC 6501 E 11 Mile Rd Warren, MI 48397-5000, USA			10. SPONSOR/MONITOR'S ACRONYM(S) TACOM/TARDEC/RDECOM		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S) 21798		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 10	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



UNCLASSIFIED

Center for Ground Vehicle Development & Integration



Mission:

To develop, fabricate and integrate advanced solutions into current and future ground systems

Vision:

The best choice for ground systems development and integration

Description:

- Leverages RDECOM and DoD capabilities in a repeatable process to apply rigorous systems engineering to ground systems integration
- Provides customer partners a single entry point for cost, schedule, performance and risk management of system integration projects

Notable Recent Accomplishments:

- MRAP Capability Insertion for Caiman, MaxxPro, RG-31 and RG-33 Systems
- Command and Control on the Move (Stryker and MRAP Integrations)
- Robotic Deployment System for Route Clearance Vehicle
- MRAP Egress Trainer
- M-ATV Vision Enhancement

CGVDI Customers(partial):

- JPO MRAP
- PM WIN-T
- PM LAV
- RS JPO
- PM-AMS
- TARDEC FPT, GVS, GVPM



System Architecture



System Design & Analysis



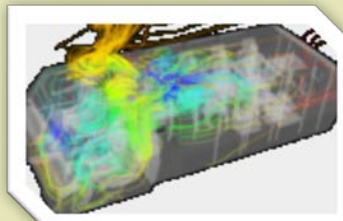
Engineering Design



Physical Simulation



Vehicle Integration



Modeling



C4 Integration Bench



Prototype Fabrication



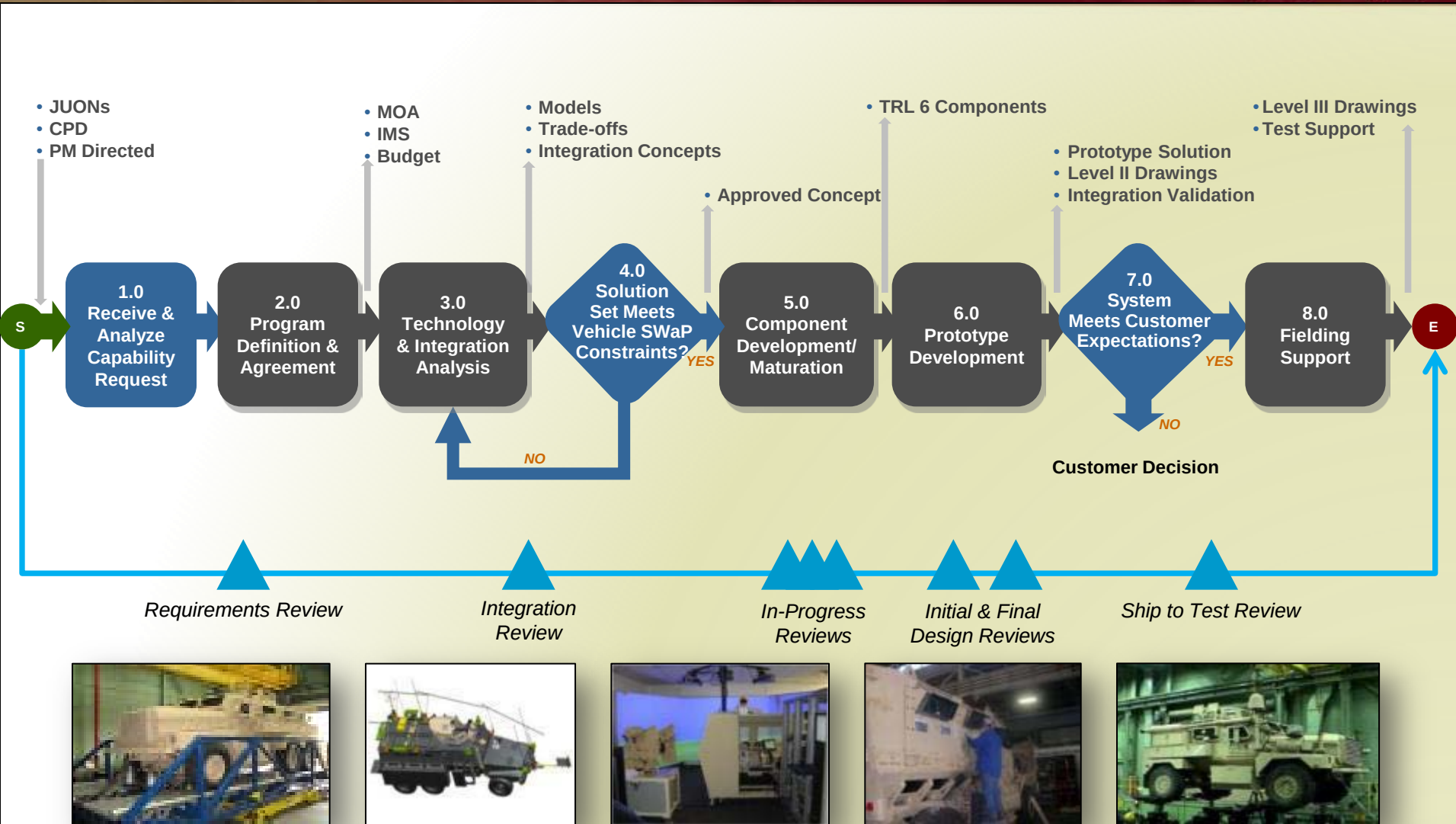
User Jury

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

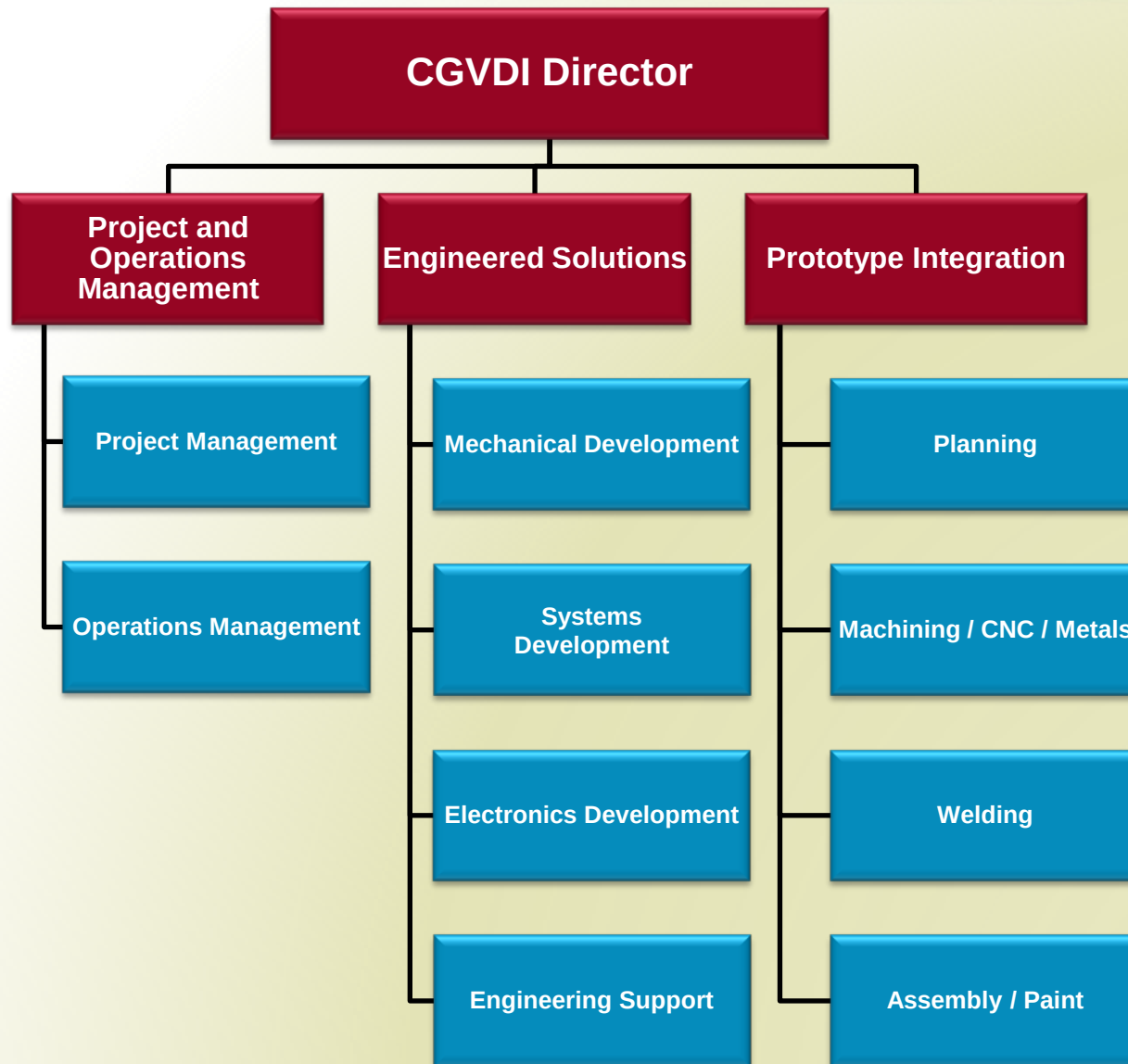
UNCLASSIFIED

OPSEC# 21798

System Integration Process



CGVDI Organizational Chart



Project Management

Operations Management

CGVDI serves as a single entry point to RDECOM for ground vehicle system integration projects, as well as for managing cost, schedule, performance and risk.



Bi-Weekly Project Review



Master Integrated Schedule



Risk Review Board

Responsibilities

- Leverage TARDEC, RDECOM and DoD resources to perform robust system development and integration
- Develop project requirements and formalize customer agreements through SOWs, MOA and MOUs
- Manage project cost, schedule, performance and risk from project requirements through system development to technical data package delivery
- Coordinate with other functional areas, communicate project status, and conduct project/program reviews with customer



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

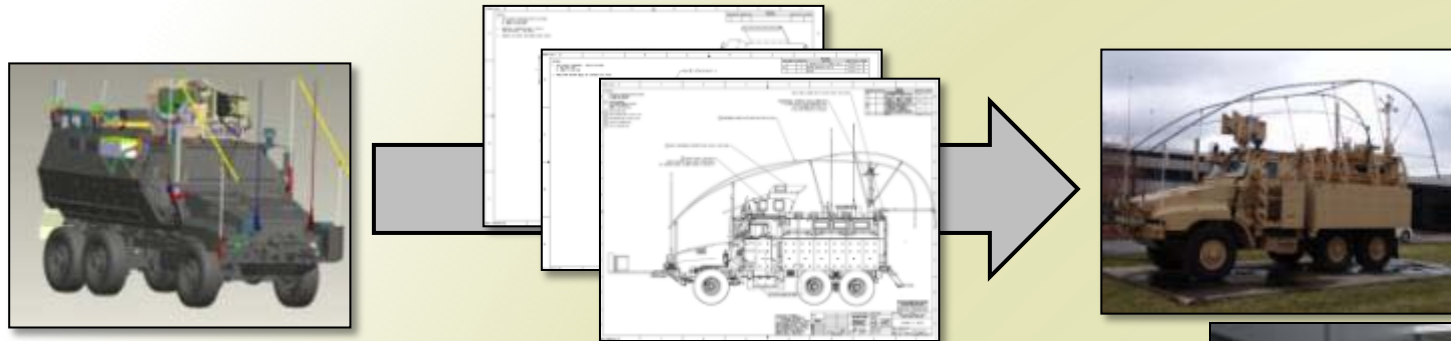
**Mechanical
Development**

**Systems
Development**

**Electronics
Development**

**Engineering
Support**

CGVDI's experienced ground vehicle design engineers have extensive expertise in developing sustainable solutions for all aspects of the vehicle, from individual components to complete structures and systems.



Competencies

- Pro/E CAD modeling, finite element analysis and mechanical failure analysis
- Design, develop and integrate electronic circuits, wiring harnesses and systems for all vehicle platforms
- Electrical system testing and diagnostics
- Reverse engineering analysis and design
- Development of Technical Data Packages including engineering drawings, bill of materials and user manuals



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Planning

Machining /
CNC/ Metals

Welding

Assembly /
Paint

CGVDI's diverse Prototype Integration workforce has critical competencies including ballistic welding, modern machining, CARC painting and expertise on all fielded vehicles.



Integration Assembly Area

- 22,500-square feet of assembly area
- 50-foot-high bay
- 15 fully customizable assembly bays
- 16-inch reinforced concrete flooring
- 50-ton rail crane with 10-ton auxiliary
- 10-ton rail crane
- Capability to work on 70-ton vehicles

Responsibilities

- Fabricate prototypes and integrate advanced technology into current and future ground systems
- Laser and waterjet cutting machines, CNC machining and forming and ballistic-certified welding
- Capability to work with armor steels, composites, ceramics, and all other common materials from raw stock to fully painted product
- Package and ship individual components and complete kits



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Research, Development and Engineering Command Prototype Integration Facilities



Army Depots



Red River Army Depot



Letterkenny Army Depot



Blue Grass Army Depot



Rock Island Arsenal



Local Industry

- Deburring/Metal Cleaning
- Hardware/Tooling
- Machining
- Packaging
- Painting
- Raw Materials
- Sheet Metal Fabrication
- Total Integration Shops
- Waterjet Supplies
- Welding
- Welding/Laser Gas Supplies



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Saving Soldier's Lives



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

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Saving Soldier's Lives



MRAP Expedient Armor Program (MEAP)

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



Universal Combat Lock Tool (UCLT)

Multi-function unit that allows the user to have one tool that will unlock any MRAP variant, with or without armor solutions



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

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.