

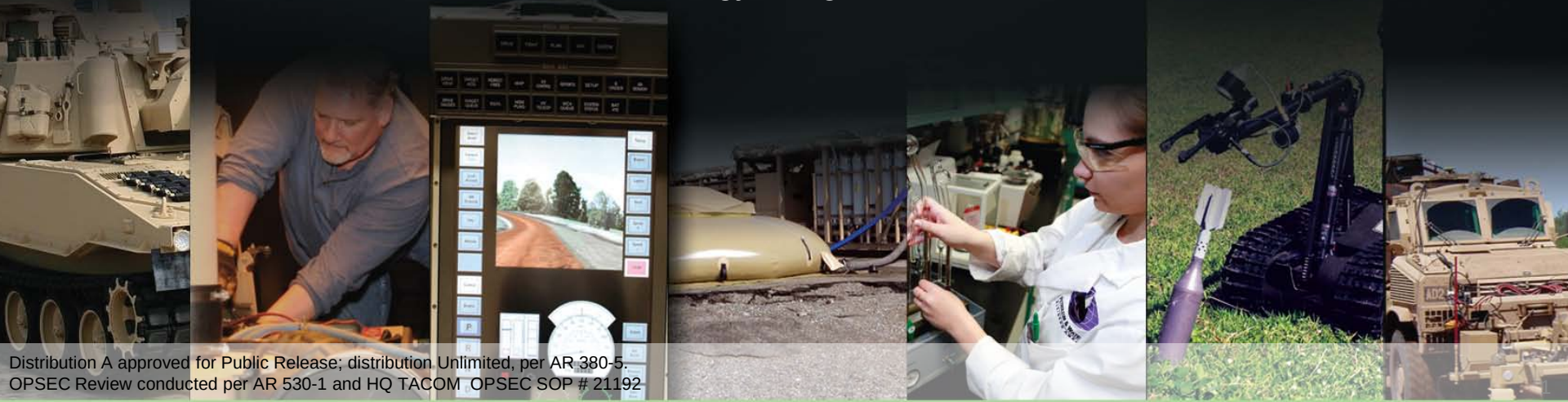


TARDEC Overview

Tank Automotive Research,
Development & Engineering Center

Mrs. Jennifer Hitchcock

Director, Research and Technology Integration



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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.

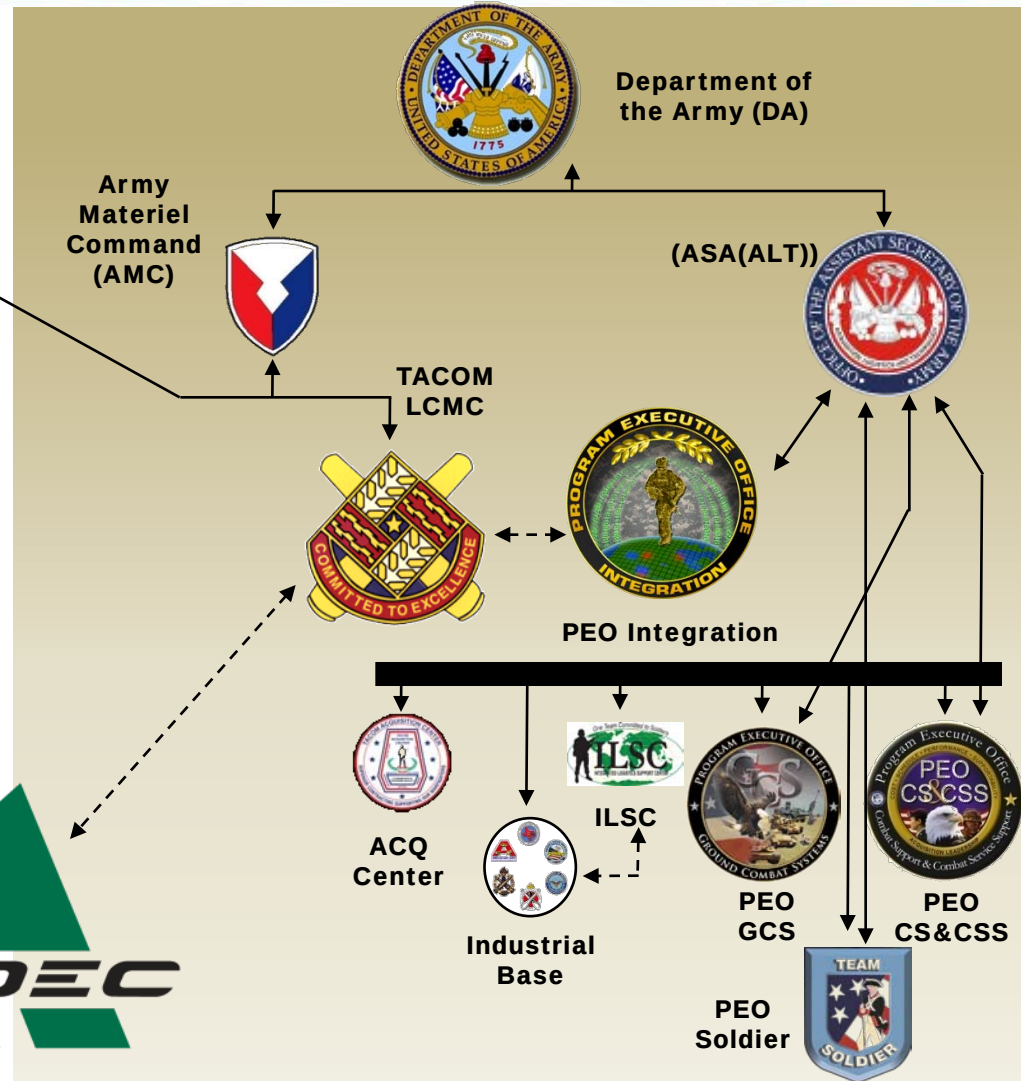
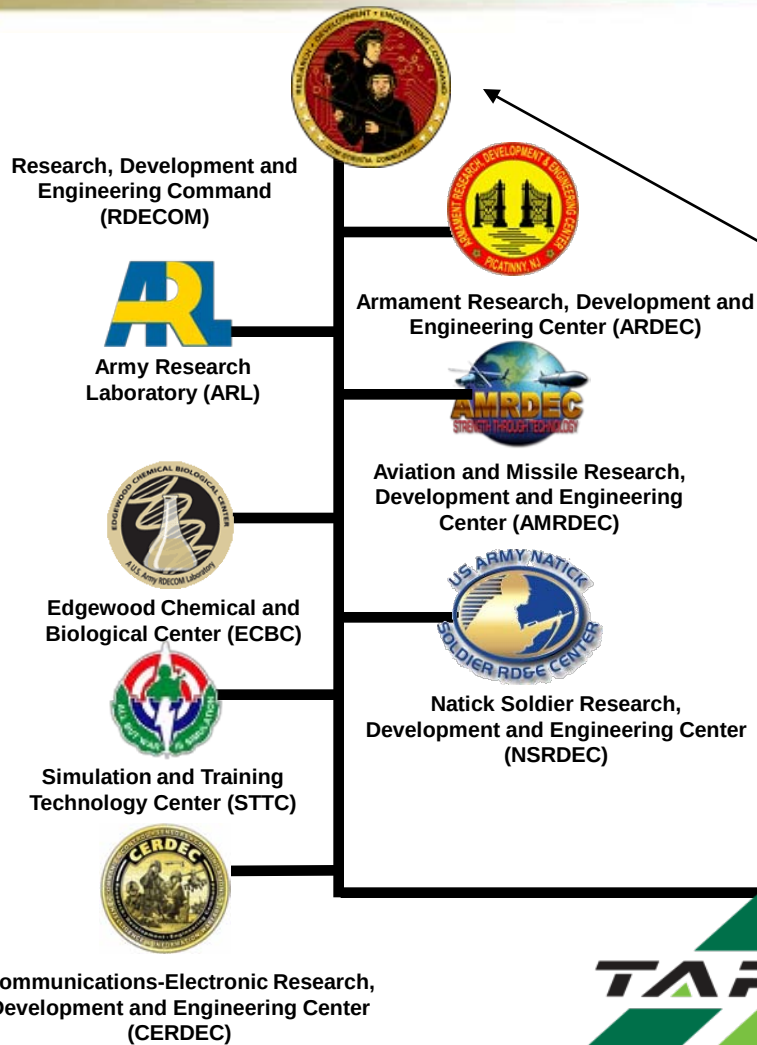
*Ground Systems Integrator
for the Department of Defense*



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

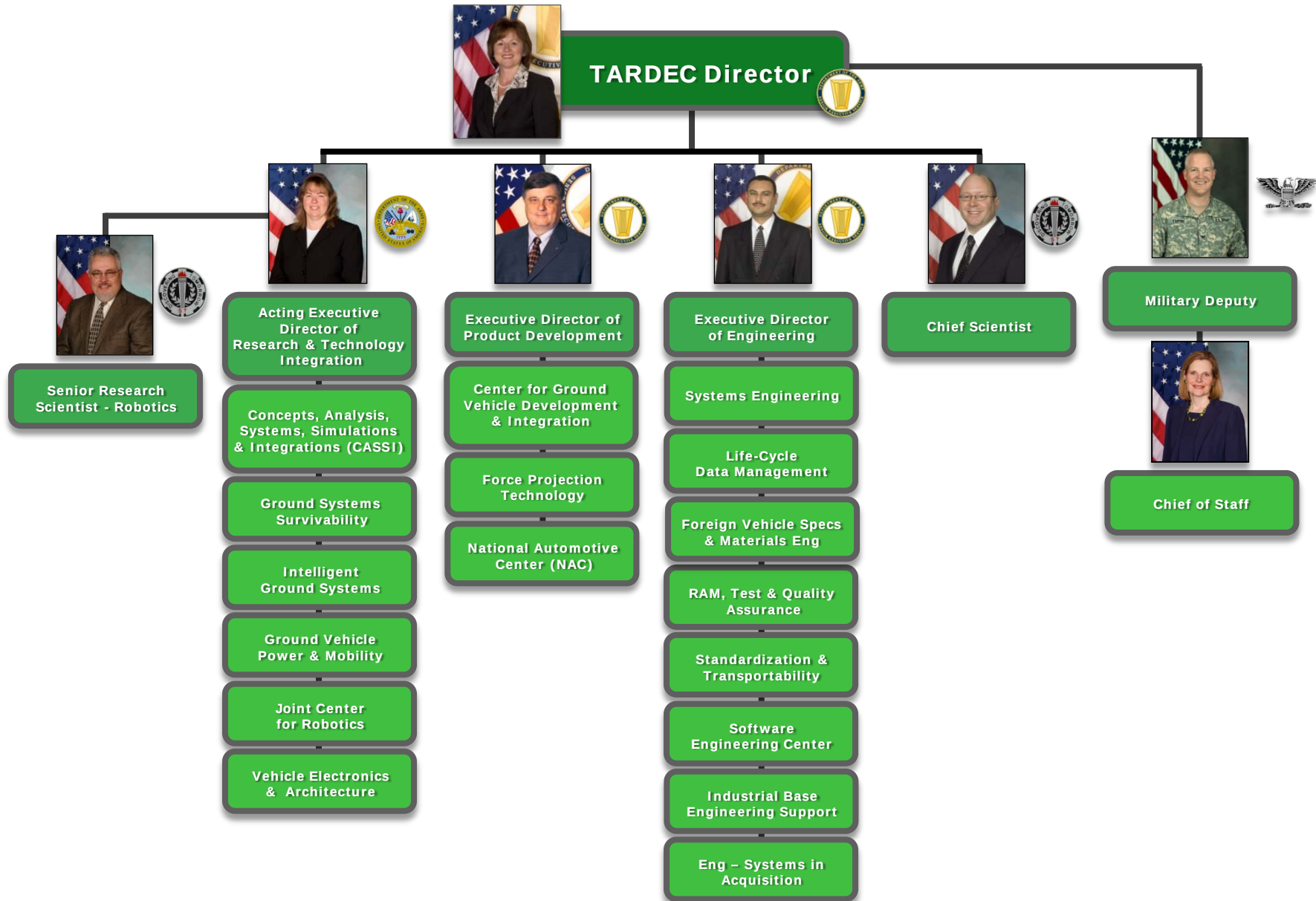
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.





Reach back to over 8,500 Scientists and Engineers

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.





Force Projection

- Fuel & Water Distribution
- Force Sustainment
- Construction Equipment
- Bridging
- Assured Mobility Systems

Combat Vehicles

- Heavy Brigade Combat Teams
- Strykers
- MRAPs
- Ground Combat Vehicles (Future)



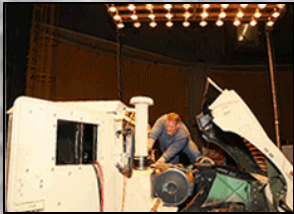
Tactical Vehicles

- HMMWVs
- Trailers
- Heavy, Medium and Light Tactical Vehicles

Robotics

- Technology Components
- Demonstrators
- Military Relevant Test & Experimentation
- Transition & Requirements Development

TARDEC Engineers Provide Cradle-To-Grave Engineering Support



Ground Vehicle Power & Mobility Integration

- Prime Power (Powertrain)
- Non Primary Power
- Power & Thermal Management
- Energy Storage
- Track & Suspension
- Alternative Energy



Ground Systems Survivability Integration

- Integrated Vehicle Protection Systems
- Active Defense
- Signature Management
- Laser Vision Protection
- Ballistic Protection
- Crew Survivability



Tactical Movement of Force Projection Technologies

- Water Generation, Purification, Storage, Distribution & Quality Surveillance (QS)
- Petroleum Storage, Distribution & QS
- Material Handling Equipment
- Mechanical Countermine Equipment
- Tactical Bridging

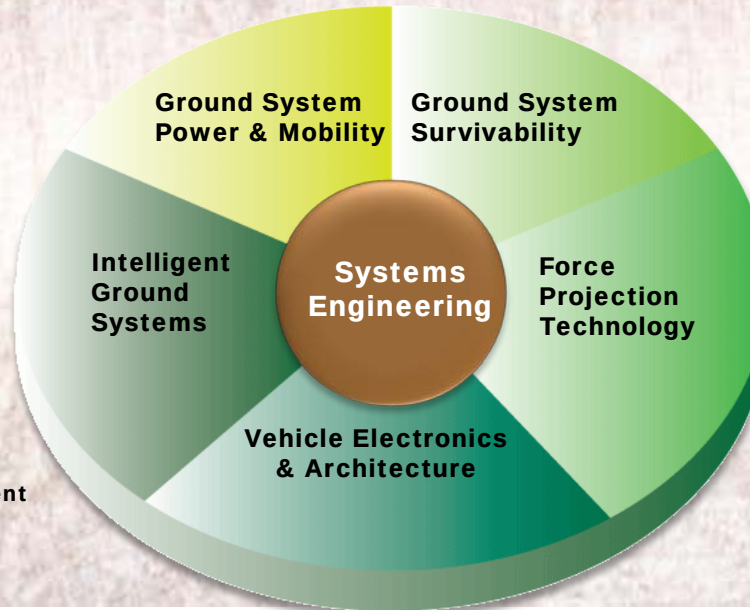
Specification Development of Force Projection Technologies

- Petroleum, Oils & Lubricants Technology
- Alternative Fuels



Maturation of Intelligent Ground Systems

- Autonomous Robotics Systems
- Safe Operations Technologies
- Indirect Vision Technologies
- Unmanned Systems Technology Development
- 360° Situational Awareness Technologies
- Soldier Machine Interfaces
- Connected Vehicles



Vehicle Electronics & Architecture Integration

- Electronics Integration
- Data Architecture
- Condition-Based Maintenance (CBM+)
- Power Architecture/Management

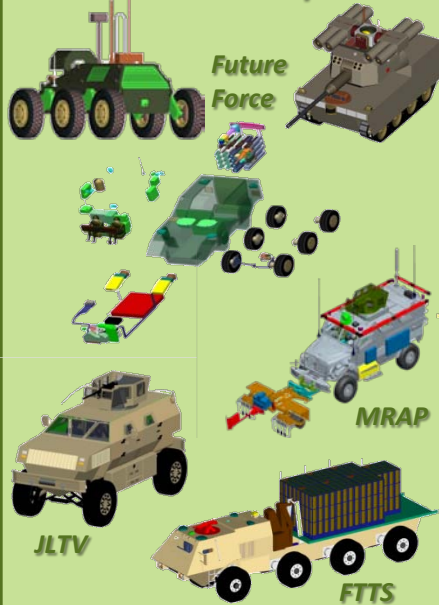
C

A

SS

I

Advanced Concepts



Analytics



Hardware & Man-In-The-Loop Simulation



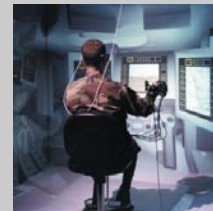
Integration & Demonstrators



HPC & Data Management



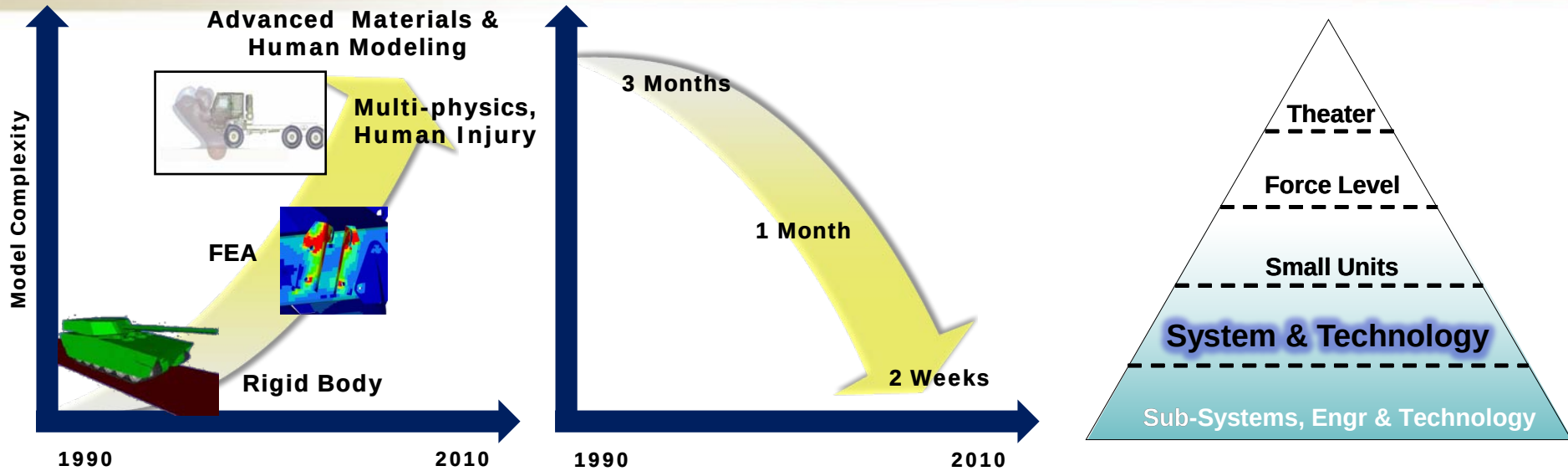
HPC



CAVE



ACE



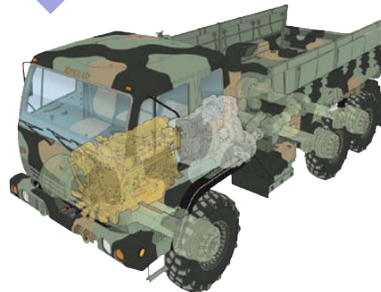
**Increasing Demands and Operational Flexibility
Require Strategic Investments in Key Areas**



Blast Modeling



HPC



Dynamics, CFD & Reliability



Physical Testing



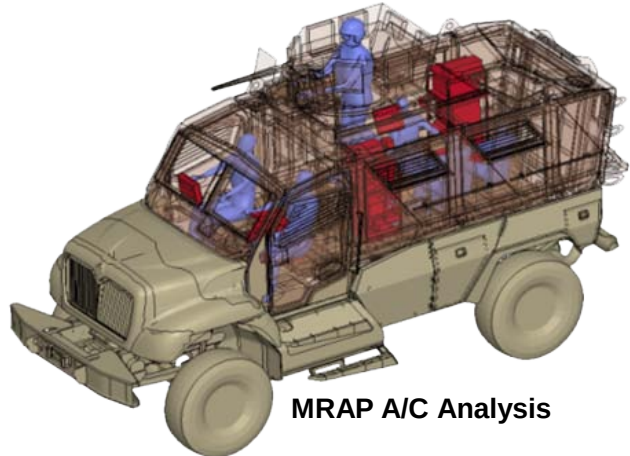
Human-in-the-loop

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Vehicle development process expedited by M&S



Supporting the Current Force

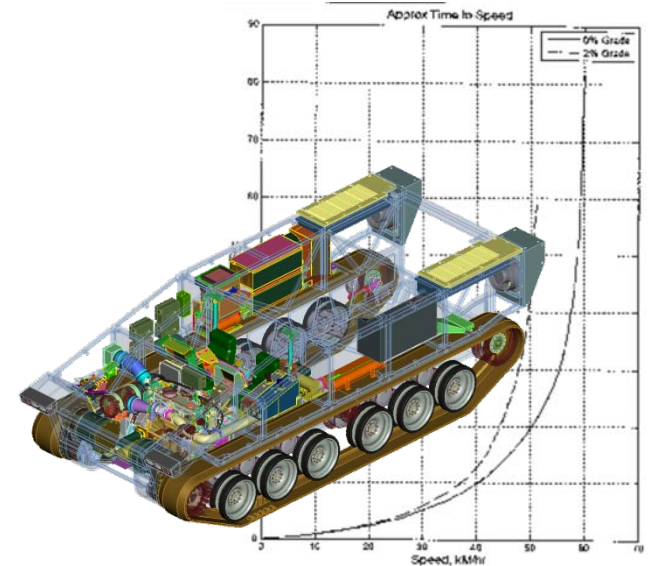


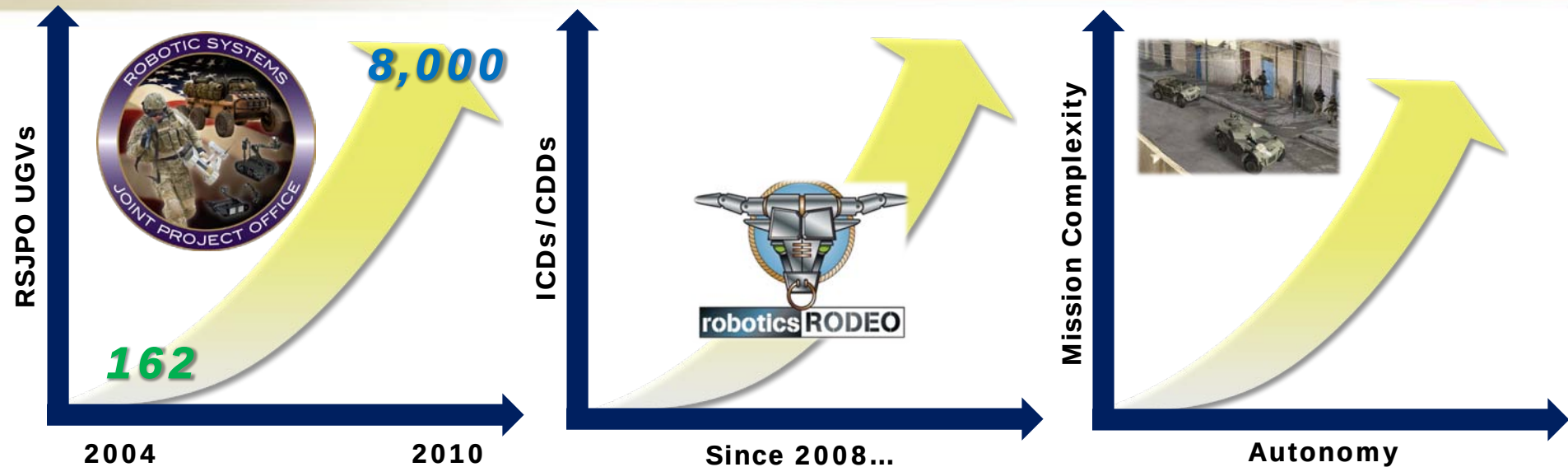
MRAP A/C Analysis

MRAP
Characterization
& Testing



Enabling the Future Fight





**Increasing Demands and Operational Flexibility
Require Strategic Investments in Key Areas**



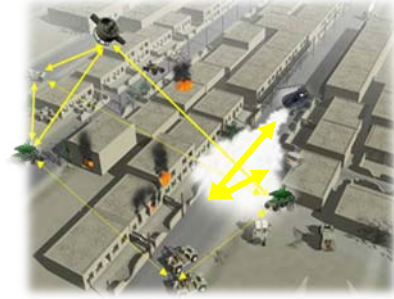
Reliable operations



Intelligent Control

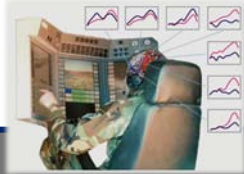


Lighten the Load



**Collaborative
Interoperability**

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Transition

Requirements

Concepts

Analysis

Component Development

Component Testing

System Integration

Virtual Proving Ground

Vehicle Testing/Demo

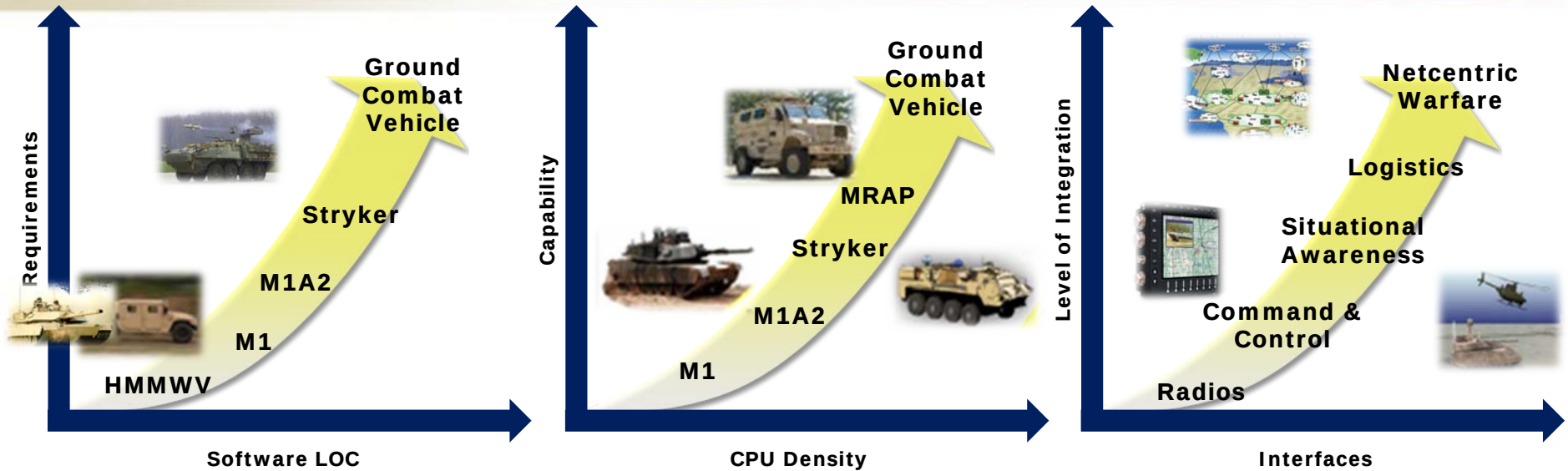
Supporting the Current Force



Enabling the Future Fight



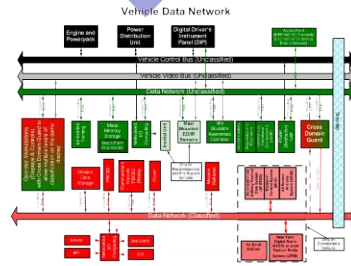
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**Increasing Demands and Operational Flexibility
Require Strategic Investments in Key Areas**



Vehicle Networks



Architectures



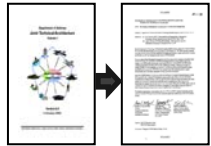
Computers



Software

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Full System Lifecycle Support



Systems Engineering Processes

Requirements

Architectures
& Standards

Software
Development

System
Integration

Testing

Field
Support

Sustainment

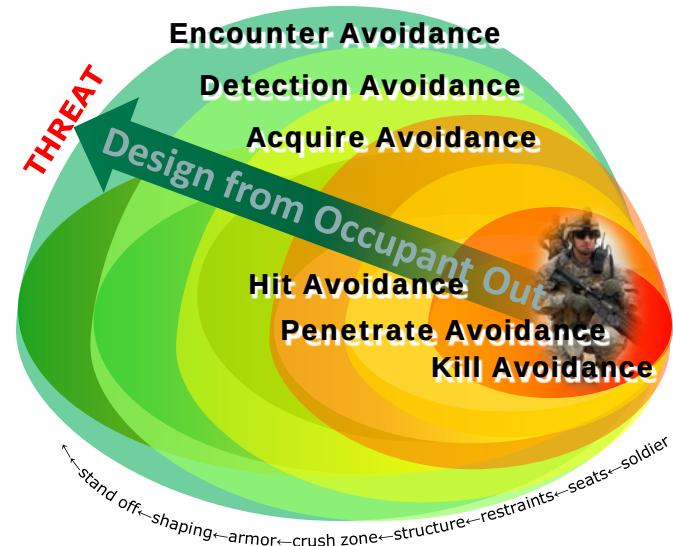
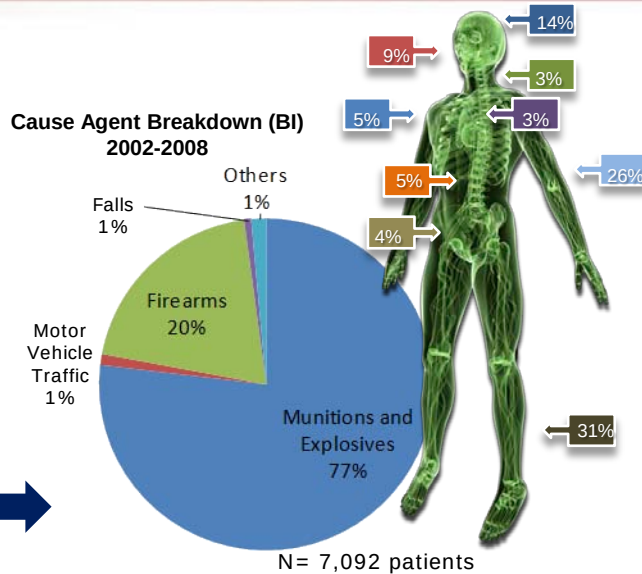
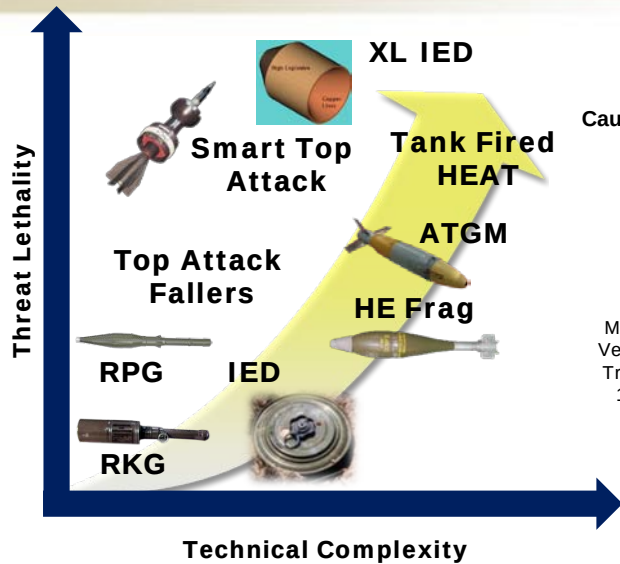
Supporting the Current Force



Enabling the Future Fight



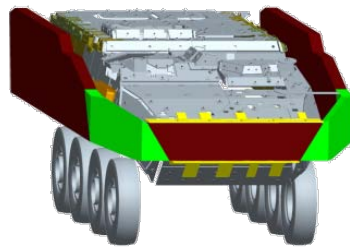
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**Increasing Demands and Operational Flexibility
Require Strategic Investments in Key Areas**



Kill Avoidance



Penetration Avoidance



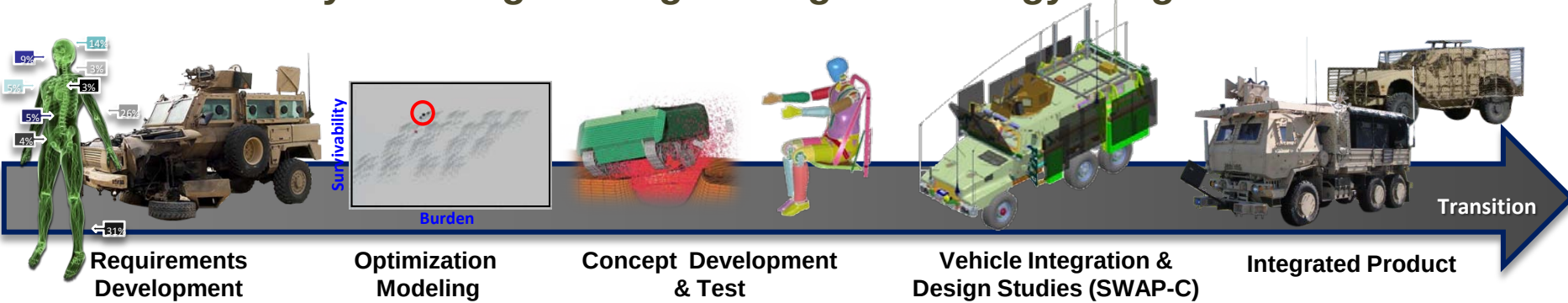
Hit Avoidance



Detection Avoidance

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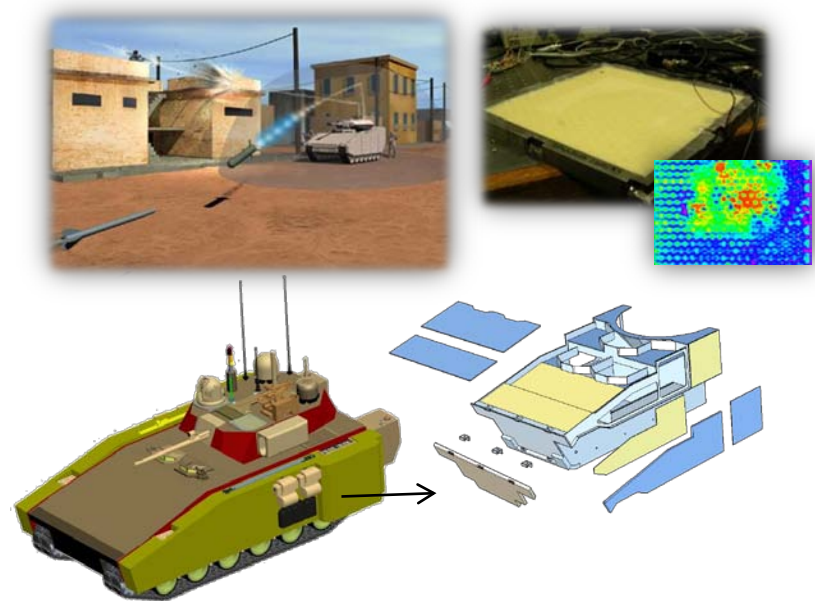
System Engineering Driving Technology Integration



Supporting the Current Force

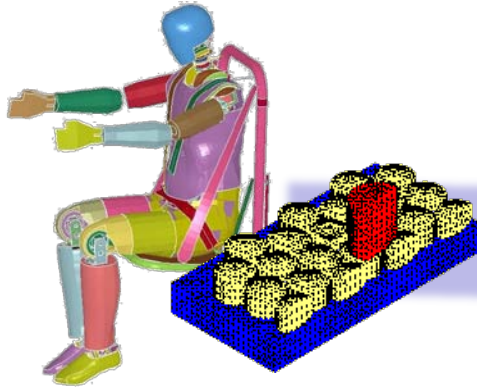


Enabling the Future Fight



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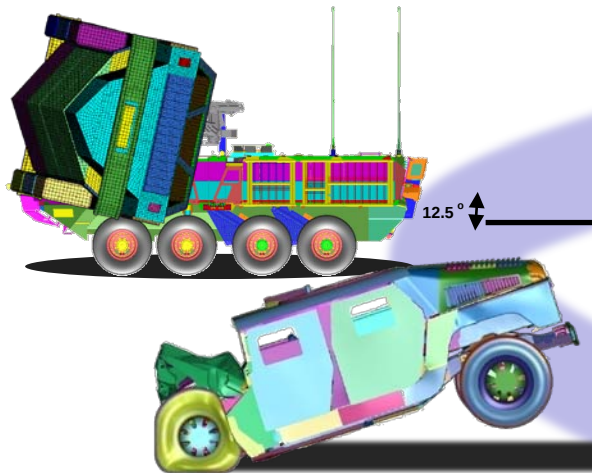
Outreach & University



Shaping Requirements



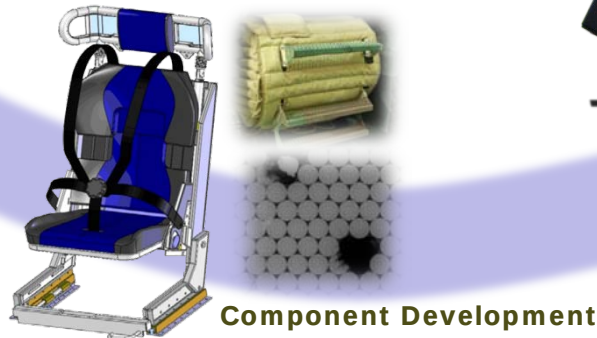
Laboratories & Facilities



Building Modeling & Simulation



International



Component Development

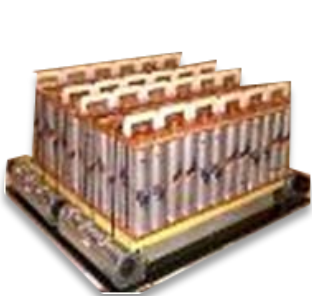


System Analysis & Prototypes

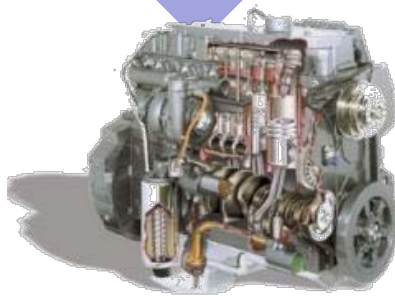
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.



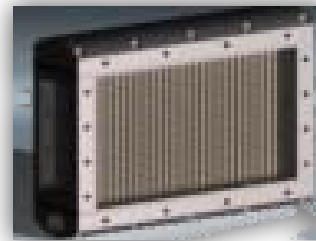
**Increasing Demands and Operational Flexibility
Require Strategic Investments in Key Areas**



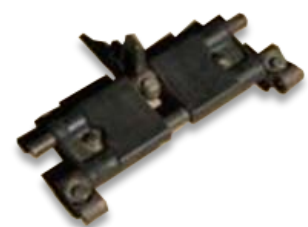
Energy Storage



**Power Generation
& Control**



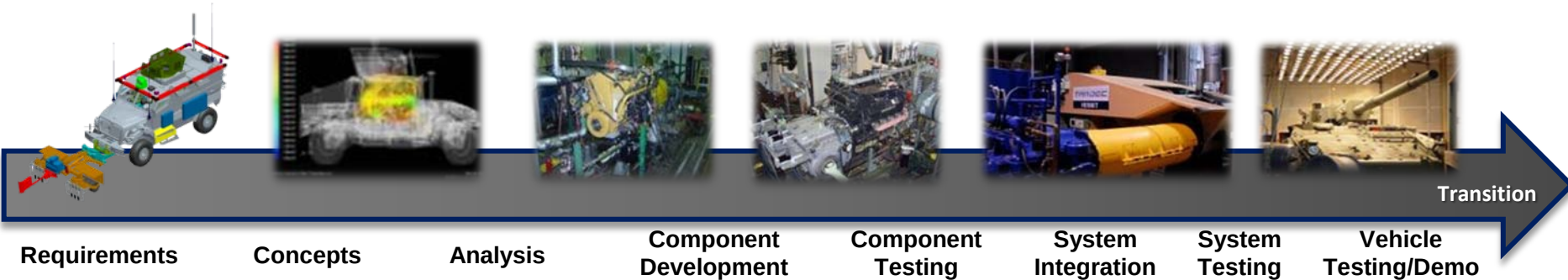
Thermal Management



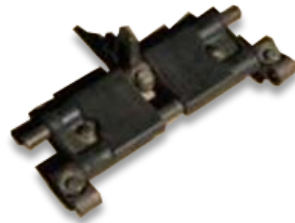
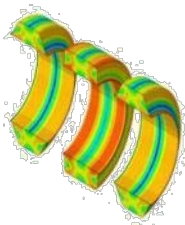
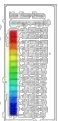
Track & Suspension

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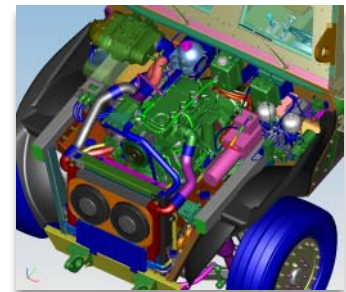
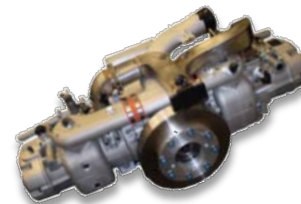
System Engineering Driving Technology Integration



Supporting the Current Force



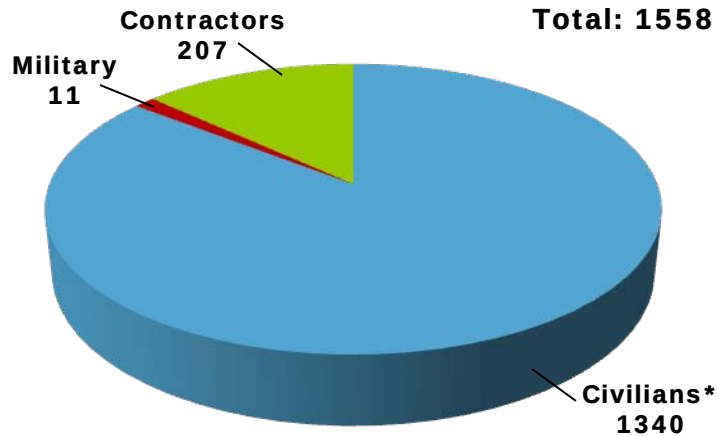
Enabling the Future Fight



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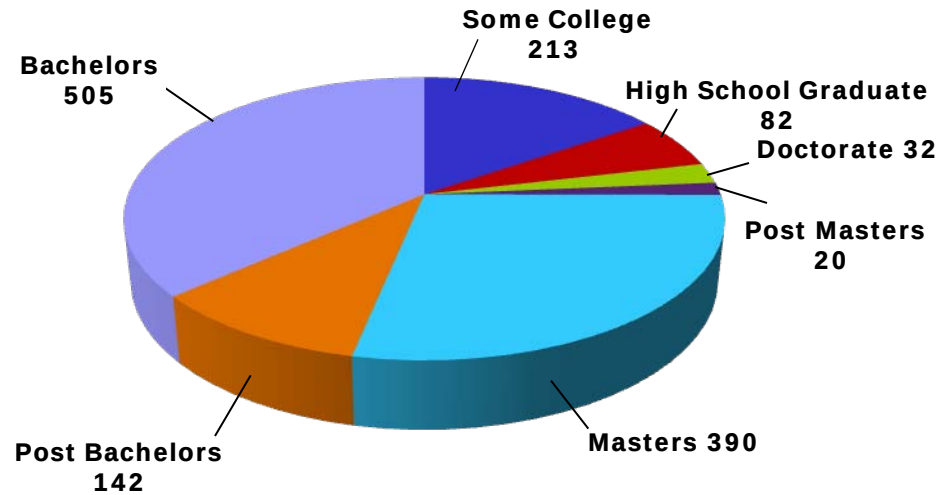
Total Workforce

Total: 1558



*Includes permanent/term employees, local interns, STEPs, and local SCEPs (in a pay status).

Education



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