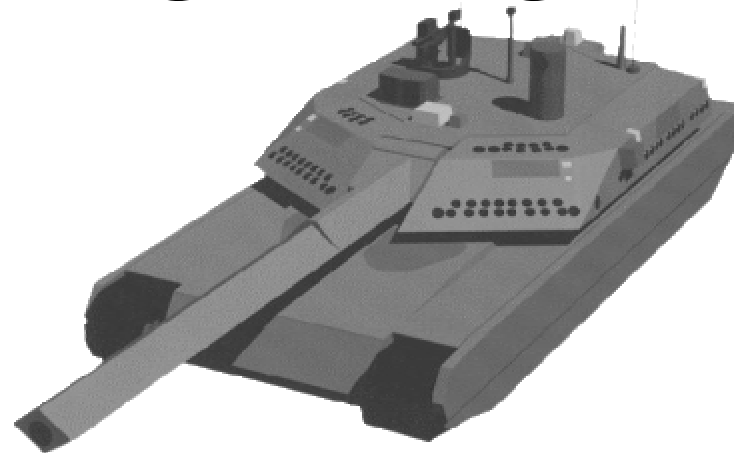




TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army

Tank-Automotive Research, Development, and Engineering Center



Technologies for the Objective Force

Mr. Dennis Wend

Executive Director for the National Automotive Center



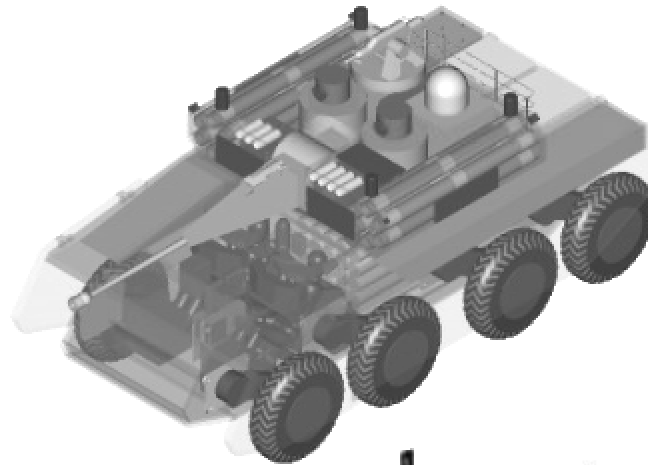
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TARDEC's Vision

Superior Technology for a Superior Army



Committed to Excellence

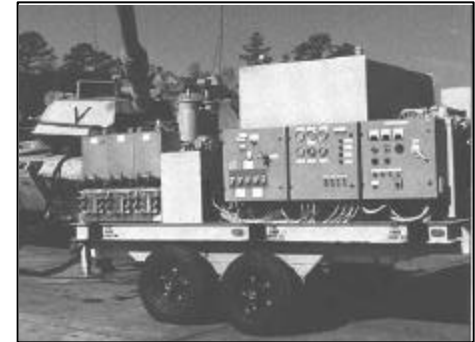
TARDEC's Six Principal Product Lines



Combat and Tactical Vehicles



Military Bridging



Logistics Equipment



Fuels and Lubricants



Countermine Equipment



Water Purification Equipment

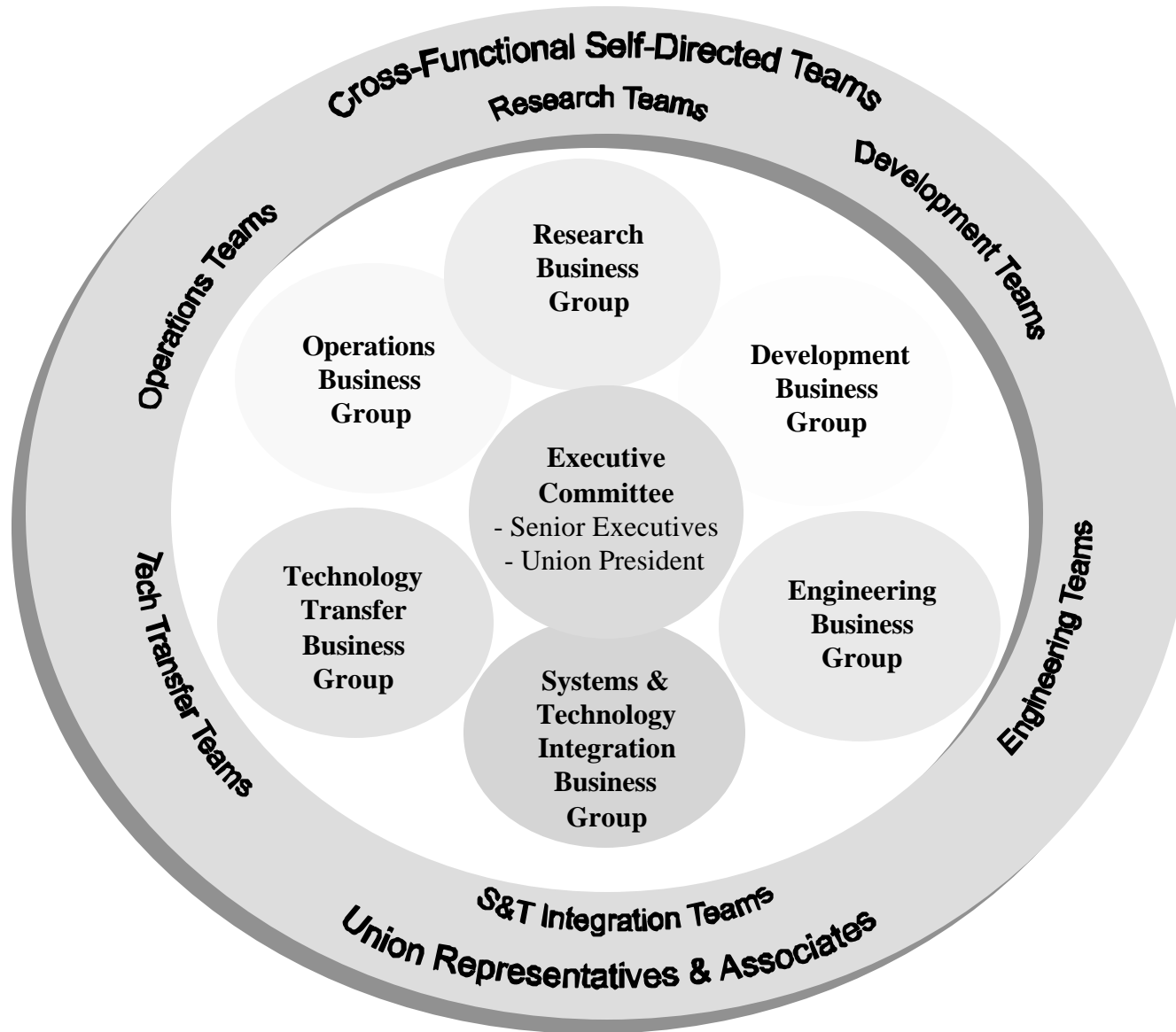
Committed to Excellence

TARDEC's Principal Laboratories

- *Simulation Lab*
- *Concepts Lab*
- *Perception Lab*
- *Fuels & Lubricants Lab*
- *Water Purification Lab*
- *Propulsion Lab*
- *Vetronics Integration Simulation Lab*
- *Laser Lab*
- *Composite Application Lab*
- *Robotics Lab*
- *Virtual Prototyping Lab*
- *Track & Suspension Lab*
- *Rapid Prototyping Lab*
- *High Performance Computing*
- *Terrain Sensing Lab*
- *50+ Special Facilities*

Investing in Intelligent Systems

TARDEC's Organization



Committed to Excellence

Research Business Group

- *Vehicle Electronics*
- Survivability Optimization
- Armor
- *Active Protection*
- *Signature Management*
- *Robotics*
- *Propulsion*
- *Track & Suspension*
- *Crew Station Design*
- Life Cycle Software Management
- *Vehicle Power Management*
- Laser Eye Protection



Soldier operating a crew station simulator.

National Automotive Center



Dual Use/Dual Needs Focus

Dual Use Science & Technology (DUS&T) Program

Advanced Automotive Developments

Military

Industry/Academia

**Leverage Shared Technology/
Technology Transfer**



FAR Contract

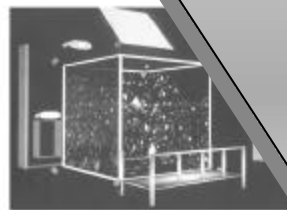
Cooperative Agreement (CA)

Other Transaction (OT)

Cooperative Research and Development Agreement (CRADA)

Small Business Innovation Research (SBIR)

Automotive Research Center (ARC)



Advanced Collaborative Environments

High Performance Computing

Analytical Simulation

Physical Simulation

Virtual Prototyping Tools

Committed to Excellence

TARDEC Robotics

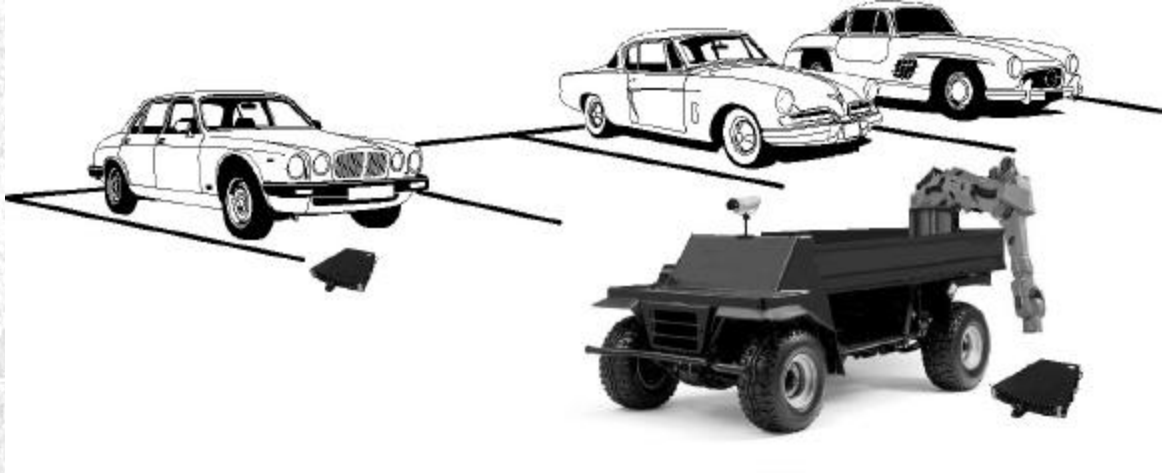
TARDEC Robotics
Laboratory

Crew Automation and
Robotics Team

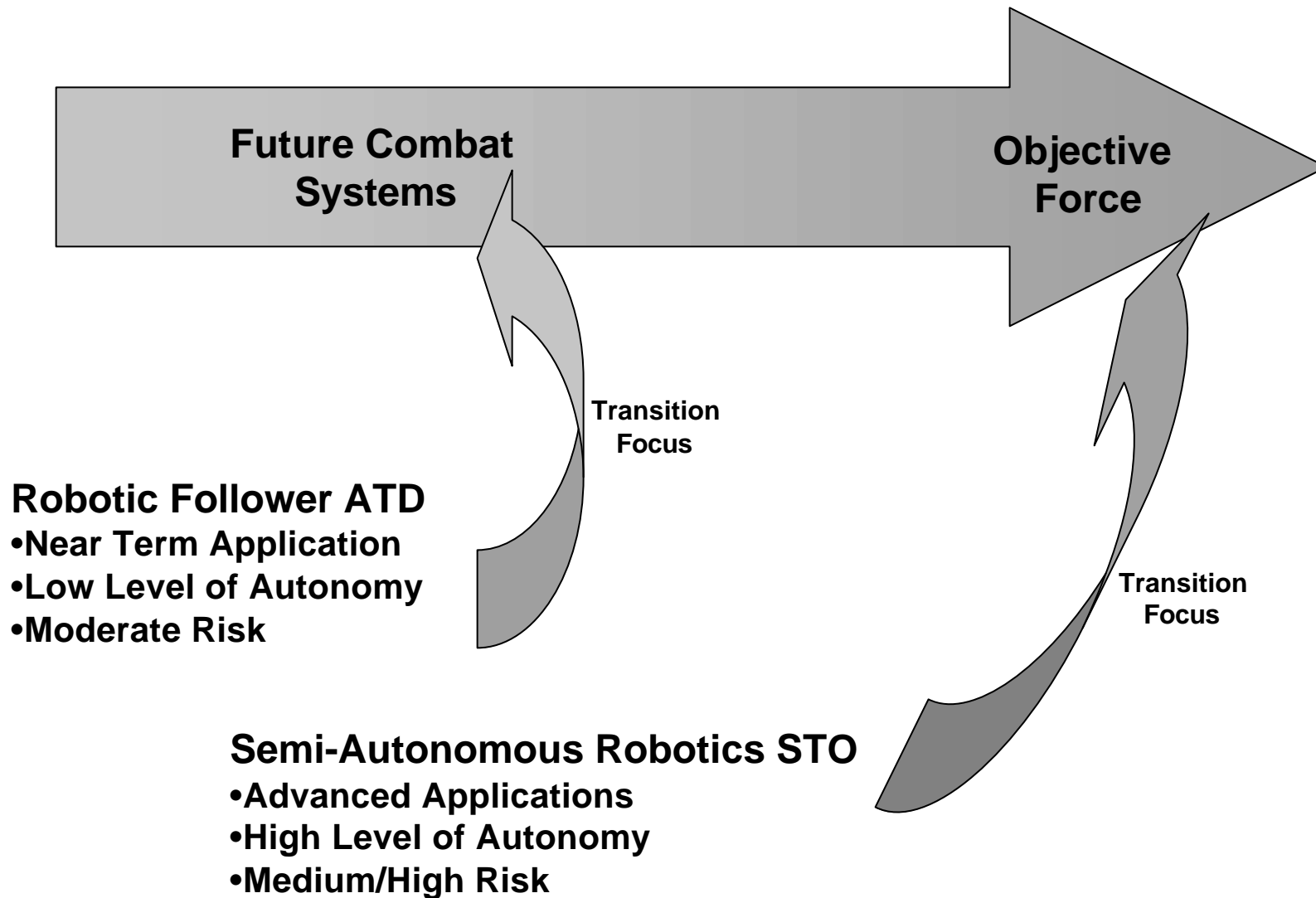
6.1

6.2

6.3



Army Robotics Transition Strategy



AUTOMOTIVE RESEARCH CENTER

A Partnership of Eight Research

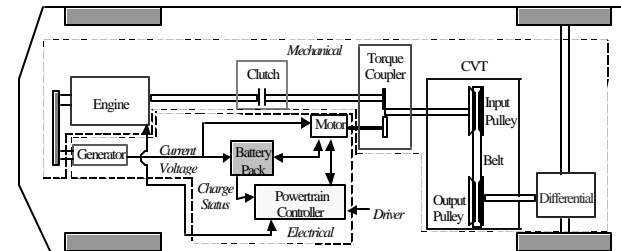
Universities

1st Thrust Area: Intelligent Vehicles and Robotics

- Enhance mission efficiencies
- Enhance fleet logistics
- Enhance driver/soldier efficiencies
- Reduce fuel consumption
- Increase mission safety margins
- Reduce overall emissions
- Reduce mission crew size

- Dynamic Route Guidance
- Driver Condition Systems
- Vehicle Dynamics/Stability

Design of Control System for Continuously Variable Transmission (CVT) System



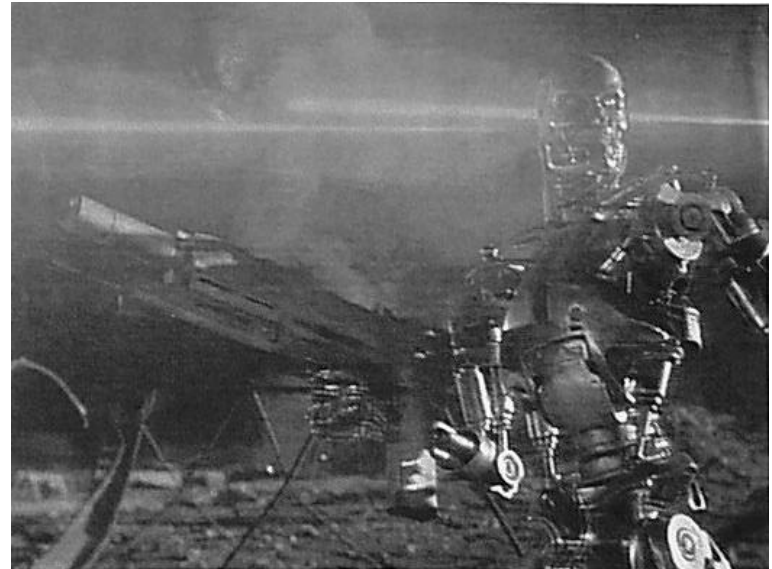
Parallel Hybrid Vehicle Featuring a CVT

- Fleet Management
- Vehicle Diagnostics
- Vehicle Optimal Design

Conclusions: Investing in Intelligent Systems

TARDEC Intelligent Systems Groups:

- 21st Century Truck – Vehicle Intelligence Team
- TARDEC Robotics Lab
- Crew Automation and Robotics Team
- Vehicle Electronics (Vetronics)
- Telematics for Prognostics and Diagnostics
- Perception Lab
- Automotive Research Center



Pushing the envelope
with intelligent systems

SmartTruck Current Capabilities

Bullet
Glass

On-Board
Diagnosis

Vehicle
Communication

Vehicle
History

Night
Vision

RF-Capable
Antennas

Touch
Display

RFID
Detection

Global
System

