



U.S. ARMY  
**RDECOM**

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## U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

### Tank Automotive Research, Development and Engineering Center

#### Overview

- TARDEC serves as the nation's laboratory for advanced military automotive technology.
- TARDEC drives integration, innovation and efficiency to leverage the knowledge and experience of its subject-matter experts and collaborative partners to meet organization and critical stakeholder needs.
- The center's 1,500 employees provide engineering support for more than 2,800 Army systems, including many DoD joint development programs.
- TARDEC maximizes the research, development, transition and sustainment of technologies and integration across ground systems.
- Core competencies: ground system design (propulsion, mobility, survivability, structures), robotics, alternative fuels and lubricants, weapon and sensor integration (vehicle electronics and power management).
- Major Partners: TACOM, Program Executive Office Ground Combat Systems, PEO Combat Support and Combat Service Support, PEO Land Systems (U.S. Marine Corps).
- People:
  - 1,419 civilians
    - 1,086 scientists and engineers
      - 43 doctorates, 465 master's degrees, 439 bachelor's degrees
  - 11 military
  - 221 contractors



## 2014 Successes

- TARDEC's 30-Year Strategy led to the formation of the Program Manager Combat Vehicle Prototyping office to oversee the execution of the next-generation combat vehicle for the Army. PM CVP's mission is to execute a five-year ground vehicle technology development program that will demonstrate leap-ahead combat vehicle subsystems, inform future combat vehicle requirements and reduce risks to future combat vehicle programs of record.
- TARDEC conducted several capability advancement demonstrations in 2014, showing how autonomy-enabled technologies like the Autonomous Mobility Appliqué System can enhance driver safety and equip warfighters with new capabilities. The AMAS common appliqué kit can be installed in nearly any military vehicle to transform it into an optionally manned vehicle.
- Using federal installations and universities as living laboratories, Applied Robotics for Installation and Base Operations autonomous shuttle pilot projects tested and demonstrated systems of autonomous vehicles, which improved the reliability of these systems and increased the trust and confidence of users and non-users.
- In the Extending the Reach of the Warfighter through Robotics capability assessment, TARDEC used a K-MAX unmanned helicopter and a Squad Mission Support System unmanned ground vehicle to conduct a completely autonomous resupply and reconnaissance mission at Fort Benning, Georgia, in August 2014.
- The Manned Unmanned Teaming capability assessment's goal was to reduce manpower, increase lethality and promote operational flexibility. A group of Soldiers demonstrated how three key mission types are enhanced by mobile direct and indirect fire unmanned systems at Fort Benning, Georgia, in November 2014.
- New active protection systems under development feature semi-autonomous or autonomous systems that can be integrated onto vehicles to give Soldiers the capability to detect, classify, receive warning cues, and use countermeasures to address threats or imminent threats in the field. The Modular Active Protective System can detect threats in the air and defeat them faster than Soldiers can react.