



U.S. ARMY  
**RDECOM**  
TECHNOLOGY DRIVEN. INTEGRATED SOLUTIONS.



# 30-YEAR STRATEGY

April 2014 - Version 1.1

UNCLASSIFIED: Distribution Statement A. Approved for public release.

## INTRODUCTION

TARDEC – the U.S. Army’s Tank Automotive Research, Development and Engineering Center – provides engineering and scientific expertise for numerous U.S. Department of Defense (DoD) ground system conceptualization, research, development, testing, evaluation, acquisition and sustainment efforts. TARDEC’s 30-Year Strategy provides an overarching framework to develop, integrate and sustain advanced manned and autonomy-enabled ground system capabilities for the Current and Future Force.

The strategy is shaped through TARDEC’s enduring engagement with the Training and Doctrine Command (TRADOC), our higher headquarters – specifically, the U.S. Army Materiel Command (AMC) and the Research, Development, and Engineering Command (RDECOM), the Army’s acquisition and program of record management community, numerous other Science and Technology (S&T) organizations across DoD, other federal agencies, industry, academia and international partners.

Also informing TARDEC’s strategy are the realities presented in the country’s strategic, technological and fiscal environments. To sufficiently address this complex operating environment, TARDEC planners reviewed almost all national, defense and Army guidance published after 2010, while collaborating closely with our stakeholders to understand their perspectives.

## MISSION

TARDEC's mission is to develop, integrate and sustain the right technology solutions for all manned and unmanned DoD ground systems to improve Current Force effectiveness and provide superior capabilities for the Future Force.

## VISION

TARDEC's vision is to be the first choice of technology and engineering expertise for ground vehicle systems and support equipment – today and tomorrow.

Overall, TARDEC's mission and vision support the strategic direction of the Army by focusing on efforts that will provide enduring value to the U.S. Army's fleets of ground vehicles. TARDEC aims to achieve this goal by organizing its investments and initiatives along three interrelated lines of business. TARDEC will advise our requirements partners to shape the future force; assist our acquisition partners improve capability on existing programs of record; and continue to invest wisely in development and provision of world-class engineering services.



*Protected Mobility initiatives enable U.S. army ground vehicles to be worldwide deployable in a variety of environments, while also maintaining security against conventional and asymmetric threats.*

## OUR NEW APPROACH

Since 9/11, Army S&T organizations have been called on to play a larger role in supporting the current fight. Other mission requirements – informing the Army requirements community, improving the capabilities of current programs and providing engineering services – remain more important than ever. To address these competing challenges, TARDEC developed its 30-Year Strategy to pivot away from maintaining traditional business operations, which align individual groups to individual stakeholders. Instead, the 30-Year Strategy adopts an integrated, holistic and long-term approach that draws on multiple elements from across the organization to address a broader set of stakeholder demands. Recognizing that a stakeholder in the requirements community may have a very different set of needs compared to a Program Manager, TARDEC organized its efforts into inter-related value streams in an effort to better serve its distinct stakeholder sets.

The TARDEC 30-Year Strategy is built upon these **value streams** (VS1, VS2 and VS3) and managed along subordinate **lines of effort** (LoEs). The LoEs are strategic thrust areas within each value stream. Collectively, the roadmaps for each LoE layout the path to achieve TARDEC's 30-Year Strategy. **Key outcomes** (KOs) highlight achievements of individual objectives or milestones within the LoEs. The principle output from each value stream may be manifested in several different ways: the culmination of a program effort, the demonstration of a set of capabilities on a vehicle, the transition of a proven technology for incorporation in a program of record or the provision of an engineering or engineering support service.

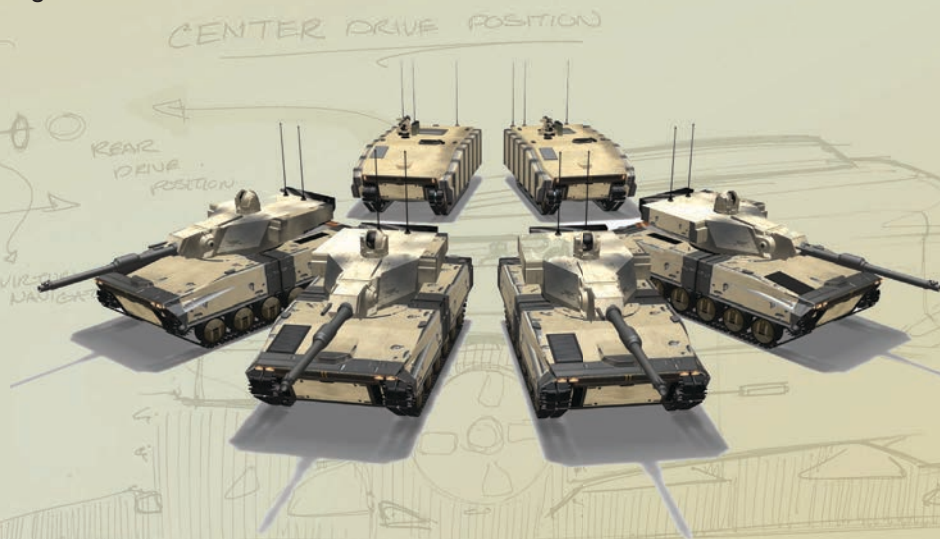


*TARDEC's three value streams form the basis of the 30-Year Strategy. Each value stream aims to provide an integrated, holistic response to the unique needs of TARDEC's stakeholders.*

## VALUE STREAM I

VSI supports TARDEC's stakeholders in the requirements community so that these organizations may better understand the "art of the possible" for future ground vehicles. The organization will shift from focusing on components with a sole focus on broad acquisition needs to system-level demonstrators that can influence requirements for future systems. VSI LoEs will create advanced leap-ahead capabilities for future ground vehicles with an emphasis on maximizing flexibility and adaptability. VSI is comprised of four LoEs that are focused on the technology areas with the most potential to ensure the enduring value of the future ground vehicle fleet, each of which directly supports Army S&T Priorities. The four LoEs are: (1) Autonomy-Enabled Systems; (2) Ground System Architecture; (3) Protected Mobility; and (4) Power Density and Energy Efficiency.

The requirements community speaks in terms of capability, not technology. So, TARDEC will focus VSI efforts on programs called **capability demonstrations** (CDs). These initiatives are high-level, cross-organizational, integrated demonstrations of new ground system capabilities that are designed to influence the requirements of future programs. They will also inform the requirements community about possible S&T solutions that address newly defined national-level strategy and guidance.



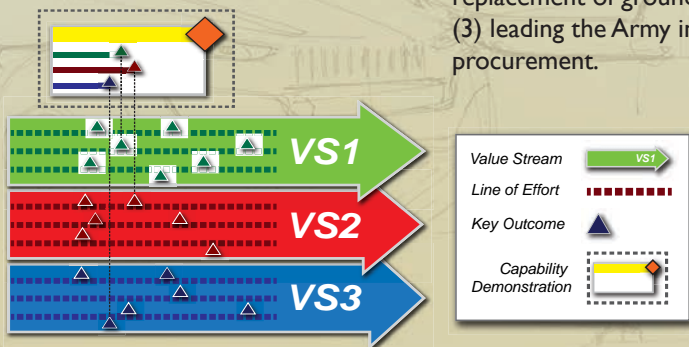
*Value Stream I will lead to advances in how the Army employs autonomy enabled vehicles in warfare. In the main battle system concept drawing pictured above, four unmanned fighting vehicles guard two manned control vehicles in the rear during a movement.*

## VALUE STREAM 2

VS2 supports TARDEC's partners in the ground system acquisition community through purposeful investments in the development, integration and transition of technologies to meet high-priority needs. VS2 was created to provide a sharper focus on the planning and execution of PM-directed or validated capabilities tailored to very specific, current needs. It focuses on upgrading current platform capabilities to maintain technological superiority, ensures capacity to accommodate new capabilities, and develops a means to understand and mitigate the costs of sustaining each platform. The LoEs that will drive improvements in the Current Force are: (1) focused efforts to enhance capability on current programs of record; (2) initiatives to improve space, weight; power and cooling parameters in the current ground system fleet; and (3) efforts to reduce life-cycle costs in military ground systems.

## VALUE STREAM 3

VS3 provides world-class services and support to the ground system domain, which includes S&T, acquisition and sustainment organizations. VS3 focuses on strategically investing in new or improved engineering-enabling capabilities that provide engineering services and matrix support throughout the vehicle life cycle. The LoEs that will help TARDEC provide world-class engineering services and support are: (1) investing in people, facilities and service capabilities that enable advanced engineering services and support; (2) improving communication with deployed forces to understand system employment on the battlefield, rapidly provide solutions to deployed units, and expedite repair and replacement of ground systems; and (3) leading the Army in secondary item procurement.



*The TARDEC 30-Year Strategy is built upon value streams (VS1, VS2 and VS3) and managed along subordinate lines of effort (LoEs) that are strategic thrust areas within each value stream. Key outcomes (KOs) highlight achievements of individual objectives or milestones within the LoEs. Collectively, these efforts feed development of capability demonstrations (CDs).*



The requirements community will benefit from future TARDEC technology demonstrators, such as the early entry combat vehicle.



The acquisition community is continually seeking solutions and systems that improve fleet performance, such as improved track for the Bradley Fighting Vehicle.



Numerous stakeholders benefit from TARDEC's engineering support services and facilities, such as the power and energy vehicle environment laboratory.

TARDEC value streams help to inform, add capability and provide support to several key partners.

## OUTLOOK

TARDEC executives and associates are heavily engaged with our stakeholders and partners to prioritize the efforts and supporting initiatives that align to this strategy. The organization has outlined a process to engage these efforts while continuously gathering feedback.

As of early 2014, some of the capabilities in planning include, but are not limited to:

- Demonstration of significantly enhanced combat vehicle technologies in the areas of power density, fuel efficiency, electrical power, survivability weight-reduction and system weight-reduction and in-house systems engineering and integration skills and tools for future combat vehicle programs of record.
- Demonstration of unmanned vehicles capable of maneuvering with mounted and dismounted units.
- Demonstration of robotic technology and capabilities that enable unit resupply and sustainment using optionally-manned and unmanned vehicles.



Please direct all comments or queries to the Deputy Chief of Staff for Ground Domain Planning and Integration, TARDEC. Phone 586-282-4233.