

Project Title	Description	Products	TRL 6 Date	Primary Lab
Advanced Lethality and Accuracy System for Medium Caliber (ALAS-MC)	Provide the Warfighter with an armament system that integrates a medium caliber weapon, ammunition, fire control, and sensors necessary to efficiently engage Next Generation Combat Vehicle (NGCV) target sets at extended ranges.	Next generation medium caliber weapon	FY20 Q2 FY20 Q4 (TRL 7)	AC
Next Generation Close Combat Missile	Next Gen Close Combat Missile with a multi-pulse, boost-sustain flight propulsion system providing extended range and decreased time of flight for enhanced soldier/platform survivability.	Next generation extended range close combat missile		AvMC
Next Generation Intelligent Fire Control	Develop hardware and machine learning algorithms to accelerate the target engagement process and deliver decisive lethality	Optimized delivery of lethality effects	FY25 Q4	AC
Advanced Direct In-Direct Armament System (ADIDAS)	Develop major subsystems for a lightweight, low recoil, unmanned large caliber armament system demonstrator while maturing technologies for increased energy on target and improved delivery accuracy	Research into future armament technology	FY25 Q4	AC
Extended Line of Sight (ELOS)	Develop a precision guided fire and forget 120mm tank munition to defeat high value targets including heavy armor, anti tank guided missile (ATGM) threat (dismounted and mounted), and light armor at extended ranges.	Fire and forget long range munition	FY21 Q2	AC
Autonomous Ground Resupply (AGR)	Develop baseline open unmanned vehicle architecture. Develop behaviors on the module level. Define interfaces and messages for open competition.	Reusable code for autonomous behaviors, common interfaces, and modular architecture	FY21 Q4	GVSC
Combat Vehicle Robotics (CoVeR)	Incremental effort to spiral increasing autonomous behaviors to the open architecture autonomy framework. Focused on improving unmanned maneuver, reducing burden on soldier operators, proving the safety case for unmanned systems and pushing UGVs into combat applications	Software for autonomous behaviors	FY19 Q4 Inc. 1 FY20 Q4 Inc. 2 FY21 Q4 Inc. 3 FY22 Q4 Inc. 4 FY23 Q4 Inc. 5 FY25 Q4 Inc. 6 FY26 Q4 Inc. 7	GVSC
Sensors for Autonomous Operations and Survivability (SAOS)	Research and development of advanced multi-function targeting, situational awareness (SA) and threat cueing sensors combined with embedded processing to enable innovative algorithms for target and threat detection, automated sensor exploitation, and 360°SA.	Sensor enabled automated search and detection of concealed targets and integrated threat cueing to reduce cognitive burden on the Warfighter	FY21 Q3 FY22 Q4 FY23 Q4 FY24 Q4 FY25 Q4 FY25 Q4 FY26 Q4	C5ISR
Tactical Navigation and Lasers (TNL)	Novel lasers which will enable active imaging systems to scan large fields of regard at extended ranges for detection of current and future threats. These lasers will also enable autonomous systems to avoid obstacles, and preemptively deter threats from engaging US Forces.	Sensors for the interrogation of complex environments, scanning of large fields-of-regard at extended ranges and detection of small/hidden targets for improve maneuver and survivability	FY20 Q4 (TRL5) FY21 Q3 (TRL5) FY21 Q4 (TRL5) FY23 Q4 (TRL5) FY25 Q4 (TRL 5)	C5ISR

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Modeling & Simulation for MUM-T	This effort will provide a real-time and high-fidelity, hardware and software-in-the-loop simulation environment for evaluation of autonomous systems, and algorithm design and development for the same; demonstrates novel analysis methods for modeling and simulation to provide enhanced demonstrations of autonomous ground vehicles to include adverse environmental conditions.	Tools for rapidly developing and testing autonomous systems	FY23 Q4 FY25 Q4 FY26 Q4 FY28 Q4	USACE ERDC
Artificial Intelligence and Machine Learning	Develop AI-enabled autonomous maneuver algorithms for Next Generation Combat Vehicles (NGCVs)	AI-enabled autonomous maneuver algorithms	FY25 Q4 (TRL 4)	ARL
MUMT Platform Enabler	The purpose of the project is to mature technologies and support the MUM-T Campaign of Learning through two synergistic integration efforts: Unmanned Aerial System (UAS) to ground platform standardization and integration and a transportable MUM-T simulation environment to advance the Soldier Machine Interaction (SMI).	Matured soldier machine interface (SMI) software and control station Supporting documentation and software	FY20 Q4 FY22 Q4 (TRL 7)	GVSC
Autonomous Mobility thru Intelligent Collaboration (AMIC)	Develop/integrate Artificial Intelligence and Machine Learning (AI/ML) technologies to increase autonomy and mobility to perform teamed operations with manned and unmanned air and ground vehicles in a military relevant environment through data collection on relevant Soldier training exercises.	Big Data for AI development	FY25 Q4	GVSC
Crew Augmentation & Optimization (COAT)	Utilization of emerging human-interaction technologies, automations, machine intelligence and the provision of cohesive domain personalization will permit Soldiers to achieve leap-ahead performance beyond today's constrained ground vehicle environment. Vehicle integrated multi-modal hardware, controls & displays, 360 SA, driving aids, and Soldier-Machine Interface for increasing crew performance while reducing the physical and cognitive load.	Increased soldier performance and reduced workload through advanced soldier machine interfaces	FY22 Q4 FY26 Q4	GVSC
Protection for Autonomous Systems (PAS)	Mature and integrate a protection concept for unmanned ground system against electromagnetic threats	Protection from electromagnetic threats	4QFY24 (TRL 4)	
C4ISR Modular Autonomy	Develop software for Army Mission Command (MC) systems to synchronize robotic mission planning, execution, common operating picture & contingency tasking of platforms w/o bandwidth for tele-operations.	Plugin software for Army Mission Command Systems	FY20 Q4	C5ISR
Smart Targeting for Lower Level Assets (STELLA)	Provide small units with non-kinetic options and a faster targeting process in a Multi Domain Operations environment.	Non-Kinetic effect workflow request, recommendor and faster target aggregation and distribution software.	FY25 Q4	C5ISR

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Advanced Targeting and Lethality Aided System (ATLAS)	Leap ahead aided target acquisition and fire control technologies for ground vehicles to enable an automated turret with the Soldier in-the-loop control.	Significantly reduced target acquisition and engagement timelines	FY20 Q4	C5ISR
Ground Degraded Visual Environment	Increased situational awareness (SA) for ground vehicle systems in degraded visual environments including: day, night, dust, or smoke	Increased situational awareness	FY19 Q2	GVSC
Modular Active Protection System (MAPS)	Developing modular technology and architecture to improve combat vehicle survivability by enabling integration of Active Protection Systems (APS) and future Vehicle Protection Systems (VPS)	Technical Data Package (TDP), interfaces, standards	FY19 Q4	GVSC
CVP Survive	Design, develop and demonstrate state-of-the-art ballistic/active protection, blast mitigation, and advanced material technologies to influence the next-generation of Infantry Fighting Vehicles.	Level 2+ TDP of hull, frame, body cab designs	FY20 Q1	GVSC
Ground System Active Defense (GSAD)	Develop active survivability subsystems and effectors which sense, track and respond to neutralize threat prior to terminal effects. The subsystems will leverage the survivability and protection controls architecture to provide threat defeat redundancy and layered survivability to optimize protection with reduced weights.	Design documents, hardware demonstration results, test results	FY24 Q4 FY25 Q4 FY26 Q4	GVSC
Advanced Concepts for Active Defense (ACAD)	Investigates, designs, and develops adaptive and hybrid multi-threat armor mechanisms, experimental methods, and computational models that enhance platform survivability against current and emerging threats at reduced weights	Research into future protection technologies against emerging threats	FY25 Q4 (TRL 4)	ARL
Active Protection Systems Integration (TMI)	Mature, integrate, and demonstrate MAPS compliant protection and survivability technology suites to reduce risk for transition to PEO / PM partners.	Integration of MAPS compliant protection and survivability technology	FY21 Q4	GVSC
Survivability Systems Controls	Evolve the active survivability architecture (framework and controller) to host additional sensors and effectors to provide additional capabilities, e.g. Iterative process to integrate Survivability System capabilities that are designed for safety, cybersecurity, and compliant with a modular approach to defeat evolving threat environment.	MAPS compatible control algorithms to increase safety and cyber security	FY25 Q4	GVSC
Ground Vehicle Holistic Defense	This project will develop a holistic survivability framework enabling integration of multiple vehicle protection technologies to protect against escalating threats while meeting combat vehicle space, weight and power (SWaP) constraints	Integration of multiple vehicle protection technologies onto a combat vehicle	FY25 Q4	GVSC

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Obscuration	The obscuration program is an enduring fundamental program that supports the CBC core competency of aerosol sciences. The goal is to develop obscurants that effectively and efficiently counter enemy targeting and acquisition of friendly forces over the electromagnetic spectrum (EMS) including advanced weapons and sensors (Spectral Dominance). There is no industrial base to develop and produce specialized materials for obscuration.	Development of advanced obscurants	FY23 Q4	CBC
Materials Application & Integration	Material Maturation Integration, Design Tools, Operational Metrics, Joining Technology, Additive Manufacturing	Lightweight materials, advanced manufacturing, and joining technologies	FY21 Q2	GVSC
Sensor Protection	Technologies to make sensors difficult to detect, difficult to dazzle, and difficult to damage by new and proliferating laser threats.	Greatly improved sensor protection capabilities	FY22 Q4 FY25 Q4 FY26 Q4	C5ISR
Advanced Powertrain Demonstrator	Demonstrate an advanced combat vehicle powertrain to improve mobility, available power, and efficiency under armor including a modular engine, transmission, integrated starter-generator, and thermal management system optimized for military environments.	Integration of high power density power pack, electrical generation, and thermal management system on a combat vehicle	FY20 Q3	GVSC
Advanced Running Gear	Demonstrate a state-of-the-art combat vehicle track, suspension and track tensioner for the 50 ton class vehicle to increase off-road mobility, augment survivability and transportation, and reduce maintenance intervals and operating costs.	Advanced lighter weight track, suspension, and tensioner to reduce weight and increase reliability	FY20 Q2	GVSC
Advanced Mobility Experimental Prototype (AMEP)	AMEP will integrate Advanced Powertrain Demonstration (APD), Advanced Running Gear (ARG) and robotic drive systems in a combat vehicle platform to provide enhanced mobility.	Integration of power generation and mobility technologies on to a combat vehicle	FY23 Q4 TRL 7	GVSC
Enhanced VETRONICS	Advanced vetronics architecture for ground vehicles addressing advanced networking, flexible Line Replaceable Unit (LRU) Input/output (I/O), digital containerization, tactical situational awareness, cooperative engagement, mission package integration, and the development of an advanced slip ring to support turret integration.	Military standard open electronic architecture, test results, and software	FY24 Q4	GVSC
Platform Electrification & Mobility	Develop, test and integrate scalable electrification technologies necessary to demonstrate a series hybrid-electric powertrain for an unmanned 10-20T platform and for manned 25-35T platform to support emerging capabilities of e-weapons, e-armor, silent mobility, low thermal signature, Vehicle-to-vehicle and Vehicle-to-Grid power sharing (import/export), radar, high power jamming, and command and control on the move.	Integration of hybrid electric power train on to a combat vehicle	FY24 Q1	GVSC

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Virtual Prototyping	Provide TRADOC, NGCV CFT, PEO GCS and PM NGCV with independent manned and unmanned vehicle concepts, performance analysis, tradespace analysis, and virtual experimentation results. VP results inform NGCV requirements, technology performance, shape demonstrator investments and support NGCV Phase 2 and 3 Test & Evaluation experiments.	Vehicle concepts, performance analysis, and virtual experimentation results to decrease development time for future vehicle programs	FY20 Q1 for RCV FY20 Q4 for OMT FY22 Q4 for OMFV (Additional results for future concepts)	GVSC
Vehicle Mobile Demonstrator	Demonstrate on a combat vehicle a power and data architecture common across combat vehicle platforms enabling a reduction in volume and weight and increased power and bandwidth for integration of new technologies such as advanced protection, lethality and network systems	Demonstration of power and data architecture on a combat vehicle platform	FY20 Q4	GVSC
Vehicle System Security (VSS)	Demonstrate an enhanced combat vehicle electrical and data architecture to operate in a cyber-contested environment.	Increased vehicle security in cyber-contested environments	FY25 Q4	GVSC
All Electric Power Train	Provide Next Generation Combat Vehicle (NGCV) platforms with advanced power & energy solutions to enable combat vehicles with full time silent operation. Develop, integrate, and test essential electrification technologies necessary to convert the series hybrid Next Generation Combat Vehicle (NGCV) platforms to All-Electric vehicles for soldier experimentation.	All electric powertrain for combat vehicles	FY27 Q4	GVSC