Title	Need	Description
ASE Data Processing and Analysis	Required: To conduct testing of Aircraft Survivability Equipment (ASE) for missile, radar, and laser warning equipment. New test techniques have been established to support new threat warning solutions which will require real-time insight into system performance. The increased data output of these systems under test require the capture of as much as 10 terabytes/hr. of test. Current: There is currently no software and hardware to conduct real time data analysis and effective/efficient post test data processing. Additionally, the current data storage solutions lack the ability to store, maintain, and access the data generated from these systems. Finally, RTC must rely on the Program Office data analysis technicians to provide post processed data to the RTC test team for analysis. As a result, analysis on aircraft survivability test data can take upwards of four months to process. Additionally, without real time feedback on data quality tests must be rescheduled and rerun at great cost due to bad or incomplete data. Currently, approximately 25% of data collected must be re-run. This equates to 25 hours of flight time on a test that is 100 hours in duration. Current data storage capability will not accommodate the amount of data that will be generated by current and future ASE systems. Requirement Driver: Experiencing issues with providing test teams with complete post processed data in a timely manner. This issue will continue to worsen with the increase of data requirements on emerging technology. (See below for FVL impacts.)	Customize specialized software, procure hardware, and develop tools to upgrade existing data collection, processing, storage, and analysis infrastructure to create an end-to-end automated data process and analysis capability consisting of real-time data display for quality control purposes as well as a post-processing data collection, organization, processing, and analysis capability to meet current customer requirements of test data statistical analysis (regression). Additionally, post-test data processing tools will be developed to standardize data processing procedures and reduce the requirement of the man in the loop. Dedicated data storage infrastructure will be installed at the Redstone Test Center (RTC) data center and the Aviation System Test and Integration Lab (AvSTIL). Hardware procurements will focus on upgrading existing processing servers and data collection infrastructure. This upgrade will enable real-time data quality control during the test such that decision makers can make the call whether to obtain more test data before the testing completes. It will also support robust statistical data analysis and perform it in a significantly reduced timeframe.
RTC Test Area Fire and Range Control Modernization	Required Capability: To support missile testing and Active Protection Systems (APS) testing, Redstone Test Center (RTC) needs reliable, standard, and supportable fire and range control, and data acquisition systems. They must provide remote communication to the range control centers, report on instrumentation status, and ensure data acquisition is synchronized with the firing event. For safety purposes, a tool is required that can autonomously track and report the location of personnel on the range. Current Capability: The existing fire control and data acquisition system contains obsolete hardware. Inadequate inventory necessitates constant relocation of working systems to support testing, with data loss during some firing events. Custom rocket test stand hardware is not ruggedized for typical vibration/temperature environments and is not compatible with hardware on other ranges. The current capability to track personnel location on the range is done manually by radio and monitoring by range safety officers, which is subject to error during periods of high range usage. Requirement Driver: Current fire/range control equipment is faulty, obsolete, and unavailable parts results in scavenging to maintain operation. Experiencing issues related to safety for both personnel and equipment. Situational Awareness of personnel downrange has elevated risk due to current manual process. The new solution will be applied to all test ranges, allowing situational awareness and communication of personnel on overlapping ranges. Big 6: Air & Missile Defense	The proposed solution is: 1) accomplish a complete redesign of the fire and range control system, with emphasis on supportability for at least the next 10 years, standardization across all of RTC's ranges, improved functionality, and size and weight reduction, 2) replace all non-IA-approved network and computer equipment, 3) procure and fabricate sufficient quantities to allow standardization of fire and range control and data acquisition equipment across all of RTC's ranges, 4) procure high-voltage firing line controllers for precision timing of squibs and exploding bridge wires, and 5) design and fabricate a control and data distribution system for high definition video cameras. The first year of funding procures the majority of upgrades to the current fire and range control system. The second year completes the fire and range control upgrades and upgrades the data acquisition capability. The third year adds the situational awareness tool and the console mount fire control stations at TA4/5. This solution directly supports test and evaluation of Active Protection Systems (APS) for the Abrams, Bradley, Stryker, the Next Generation Combat Vehicle, and multiple Hypersonic Weapon test programs.

Title	Need	Description
RTC MOSA and Integrated Mission Equipment Test Bed	Required Capability: A Future Vertical Lift (FVL) surrogate aircraft to test weapons, mission equipment, and air launched effects in flight profiles from Hover to 220 knots and altitudes above 15,000FT. Current Capability: No capability exists to perform weapon, mission equipment, and air launched effects testing at high altitude/high airspeed flight profiles. Testing by the Original Equipment Manufacturer (OEM) is a cost prohibitive alternative and would contain no independently verified data. Difference: Funding will enable the Army Test & Evaluation Command (ATEC) to effectively and efficiently provide test services to the FVL Captive Carry Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines. Requirement Driver: Big 6 + 2 (Future Vertical Lift); MOSA is #4 LOE for FVL- no capability exists to test MOSA-enabled equipment in any airframe. MOSA-enabled sensors are anticipated needing test by FY24 at the latest.	Gather requirements and develop an autopilot system that can accept external inputs and controls. Upgrade the C-12C engine, prop, and door to create an integrated surrogate test bed. Upgrade the Stabilized Electro-Optical Airborne Instrumentation Platform (SEAIP) capability on the existing UH-60 Black Hawk to support interfacing with modern standard electronic interfaces. This will leverage investments made into the development of the C-12C captive carry aircraft and the UH-60 SEAIP aircraft to create a test bed architecture for use in testing Modular Open System Architecture (MOSA), mission equipment, weapons systems, and air launched effects. The C-12 and UH-60 will provide a surrogate platform that can achieve similar flight conditions to the proposed Future Vertical Lift (FVL) solutions while providing enough carriage and instrumentation options to integrate multiple systems under test effectively. This will enable Redstone Test Center (RTC) to provide input into the fielding decisions for the FVL aircraft and products (FLRAA, FARA, ALE, and FUAS) to include effectiveness, suitability, survivability, safety, and airworthiness.
RTC Enterprise Expeditionary Test Instrumentation Package	Required Capability: To characterize and assess Future Vertical Lift (FVL) aircraft and mission equipment, three mobile suites of test instrumentation and command/control (C2) equipment are required to conduct data collection at off site locations. Current Capability: Currently RTC does not have the capability to fully test the FVL equipment performance or provide enough crucial data. Current capability leverages equipment that has not been upgraded/tailored to support FVL equipment testing and can operate in a fixed scenario only. The Center currently maintains one mobile telemetry trailer with limited capability to conduct test operations or perform data processing and analysis. Additionally, the Center maintains three suites of RATH that provide dedicated support to Program Management Office Aircraft Survivability Equipment (PMO-ASE) test activities. Difference: Funding will enable Army Test & Evaluation Command (ATEC) to effectively and efficiently provide test services to the FVL Cross-Functional Teams(CFTs)/Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines. Requirement Driver: (Big 6 + 2: FVL); the FARA Competitive Prototype (FCP) fly-off will take place in FY23. The two awardees will require RTC to provide safari test support.	To provide input into the fielding decisions for the Future Vertical Lift aircraft (FVL), Redstone Test Center (RTC) requires the capability to conduct intensive data processing and analysis on data collected from these aircraft and systems. This data must be collected, managed, organized, distributed, processed, and analyzed in compressed timelines to support rapid fielding decisions. In addition, data collected will support modeling and simulation activities associated with these test programs and enable the use of a model-test-model approach for these programs. As these aircraft begin to leverage more sensor and network centric approaches to increasing combat effectiveness, data generation volume and required capture speed is expected to sharply rise. FVL testing is intended to be parallelized and distributed to increase throughput with limited test assets. RTC must develop three mobile suites of instrumentation to conduct test operations and collect/process/analyze data pertaining to the assessment of FVL aircraft and systems in an expeditionary fashion to support this intent. This solution will leverage previous RTC development of the RTC/ASE Architecture for Test and Evaluation of Hostile Fire Systems (RATH) and "ASE Data Analysis and Processing" project and expand the architecture to support FVL use cases. The solution will allow RTC to provide all required instrumentation and range support infrastructure at any location required for testing FVL aircraft and systems.

Title	Need	Description
RTC RAPIDS Data Management and Analytics	Required Capability: A Data Management capability is required to enable RTC to manage the test data that it creates. Having a common way to store, access, analyze and manage this data improves the security and process for the product that RTC delivers to its customers. Current Capability: RTC employs various methods across the center to collect, store, process or deliver their data product to its customers. The current process consists of multiple format and platforms for data collection; data stored on all types of media; various custom software tools to process and analyze the data; and customer specific data products delivered. Difference: A Data Management and analytic solution for RTC would help create a way to have uniformity across the divisions as well as streamline the process to manage RTC's product. With creating a shared way to store, access, analyze and manage this data, it will provide the S6 a more efficient way protect the valuable data that is collected, analyzed and stored for delivery to RTC's customers. This will provide more commonality across the center, improving efficiencies. Requirement Driver: There is a high risk of data loss due to many manual processes and varying processes across the center, especially with transitioning technicians.	Procure and implement big data knowledge management and analytic software, servers, and scalable data storage. Implementation of a data management solution will enable RTC to better store, access, analyze and manage critical test data. With current storage capability adding this data management and analytic solution allows for a more robust and streamlined process. The data management and processing software will be integrated to work with the data storage and access functionality to manage the data. This will improve Redstone Test Center's (RTC's) capability to store, access, analyze and manage their data.
Modular Open System Architecture (MOSA) M&S Capability	Required Capability: All Army Cross Functional Teams (CFTs) have a requirement to be compliant with a MOSA within the FY24-25 timeframe. It is a major line of effort (LOE) across Future Vertical Lift (FVL), Long Range Precision Fires (LRPF), and Next Generation Combat Vehicle (NGCV). No capability exists to test the compatibility of MOSA in an M&S or hardware-in-the-loop (HWIL) type capacity. There is no lab type capability to utilize M&S and HWIL techniques to support MOSA testing. An architecture needs to be built that could test the "plug and play" type of compliance the Army seeks. Current Capability: There is currently no architecture in place to support MOSA testing at RTC. Difference: Building a MOSA Avionics Lab would allow for differnt avionic components to be used in conjunction witht he AvSTIL/FAST Lab and the DTCC to test spcific avionics systems. This would allow for MOSA testing. Requirement Driver: Big 6 + 2 (FVL); MOSA is #4 LOE for FVL- no capability exists to test MOSA-enabled equipment at a component level.	To support Modular Open System Architecture (MOSA) Modeling and Simulation (M&S) Testing, a component level avionics Lab needs to be built. This lab would allow component hardware to place in virtual prototype environment to allow for MOSA testing at the component level. To build this lab, Redstone Test Center (RTC) will need to procure supporting computer hardware, cabling, and networking hardware. RTC will develop immersive environment software and emulation software to properly test the component. Using component level MOSA will save time and money of testing MOSA compliance prior to integration on an aircraft.

Title	Need	Description
Air to Air Infrared Signature Collection	Required Capability: Quantify infrared signature data for existing and emerging ASE systems. An air to air IR signature collection capability of which would provide data collection on various profiles in flight. Enhance existing surface-to-air measurement capability by quantifying absolute transmission and calibrating imagery to radiometric units. Defining methodologies to ensure signature data is calibrated at the correct ranges and temperatures, adjusting data collection for atmospheric conditions, and finally applying this methodology to air-to-air data collection. Current Capability: Currently, there is a robust surface to surface IR signature collection capability that stems from legacy missile flight testing and the calibration of target signatures. The current surface to air IR signature collection methodologies provide limited signature data for aircraft at various profiles. There is no validated method for insuring the data is radiometrically calibrated and determining how atmospheric conditions impact sensor performance. Difference: An air to airIR signature collection that will provide accurate modeling for an aircraft in flight, supporting performance assessment of FVL aircraft countermeasures. Requirement Driver: Ability to quantify IR signature data of aircraft in flight to test out ASE systems (Big 6 + 2 Future Vertical Lift (FVL) supporting FARA/FLRAA)	Develop the capability to collect calibrated Infrared (IR) signatures of US Army aircraft to support Aircraft Survivability Equipment (ASE) modeling and simulation while in flight. Past measurements have been collected for surface to air configurations, to capture dynamic IR signatures of fixed-wing aircraft. These measurements produced data that neglected absolute transmission effects, and imagery data was not radiometrically calibrated. The air to air IR signature collection system would provide the ability to collect calibrated Watts/Steradian (W/sr) as a repeatable measurement standard, and incorporate absolute transmission to assess atmospheric conditions and countermeasure effects. An initial ground-to-ground solution will progressively lead to an air-to-air solution. Trials would be conducted for validation as well as training to increase expertise in making accurate measurements. A methodology will be performed to maximize data collection efficiency, reduce overall test time, and maintain maximum safety for test aircrews. This solution will enable input into the fielding decisions for the Future Vertical Lift (FVL) aircraft and products to include effectiveness, suitability, survivability, safety, and airworthiness.
Future Aircraft Systems Test (FAST) Lab	Required Capability: Future Vertical Lift (FVL) must reduce schedule and cost of future aircraft testing. To meet that requirement, installed system testing must be utilized to offset flight test hours. Army Test & Evaluation Command (ATEC) will be required by FY24 to test and assess the FVL FARA aircraft and all associated integrated systems. Testing will include: Effectiveness and Performance (Comms/Navigation/AIMS/etc.), Degraded Visual Environments, Survivability / Electronic Warfare, and Autonomy/Artificial Intelligence. Current Capability: Current installed system's test for currently fielded aircraft is done at Redstone Test Center (RTC) in the AvSTIL. Currently RTC can put aircraft into virtual flight to test avionics systems such as ASE and Manned-Unmanned Teaming operations (MUM-T) in AvSTIL. Testing aircraft in AvSTIL requires custom solutions due to architectural differences in the aircraft frames. Difference: The lab upgrades will leverage gains from CTEIPs: AIT and EO/IR direct injection in the areas of sensor injection/projection and autonomy testing and CTAST/CTARAP and CVATE for FVL cyber testing. It will fill aforementioned gaps as for FVL, augmenting RTC's current capability and saving critical test time and cost over live flight testing. It will also provide stable risk reduction integration testing prior to live flight. Requirement Driver: FVL FARA/FLRAA testing.	Upgrade the Aviation Systems Test and Integration Laboratory (AvSTIL) to accommodate future aircraft systems in an installed systems test capability. This will require updates to the current AvSTIL capabilities to include Mudbucket for virtual flight, sensor projection to Aircraft Survivability Equipment (ASE) Systems Under Test (SUTs), and updated data recording and visualization tools to account for the new aircraft and new SUTs. New capabilities will be added into the lab for simulated Global Positioning System (GPS) denied spoofing, installed Assured Positioning, Navigation and Timing (APNT) system testing, simulated and installed autonomy testing, simulated Degraded Visual Environment (DVE) testing, simulated environment for cyber testing, and to support distributed testing. This will fill the gaps for Future Vertical Lift (FVL) in the following technical areas: installed systems APNT test capability / simulated GPS denied spoofing capability (including M-Code), Modular Open Systems Approach (MOSA) compliant instrumentation and benchtop mini-system integration laboratory (SIL), high fidelity Future Attack Reconnaissance Aircraft (FARA) and Future Long-Range Assault Aircraft (FLRAA) virtual flight capability, simulated and installed autonomy test capability (including for Air Launched Effects (ALE)), aircraft sensor injection/projection capability (For ASE and other sensors), simulated DVE capability, simulated environment for cyber test support.

Title	Need	Description
RCCTO Multi-purpose Expeditionary Test Capability	Required Capability: A mobile capability to test at multiple locations and execute technical testing for DE-MSHORAD, HEL-TVD, and future hypersonics weapon systems prototypes to be fielded out of the RCCTO. Requirements will include a Command and Control (C2) trailer, meteorological instrumentation, situational awareness and high-speed cameras, beam analysis instrumentation (as needed), and the RATH 2.0 hardware and software for data collection/real-time data analysis. Methodologies for tailoring the test architecture to the DE use case will also be required, in addition to the material solution components. Current Capability: There is no expeditionary test capability in place to support RCCTO testing. The RATH 2.0 test architecture backbone is near completion, but only tailored toward the ASE use case. Meteorological and imaging instrumentation resources are available, but will not be exclusively available to support RCCTO testing at peak expeditionary OPTEMPO. Difference: The initial capability build will support directed energy (DE) test efforts, and versatile enough to support future RCCTO test capabilities (to include hypersonics efforts). This includes lowering future test costs by shortening the time needed between setup for test and the actual test. Requirement Driver: RTC is a critical path for providing risk reduction testing and data analysis for both hypersonics and directed energy efforts.	Develop a multi-purpose expeditionary test capability solution that combines multiple instrumentation into a Redstone Test Center (RTC)/Aircraft Survivability Equipment (ASE) Architecture for Test and Evaluation of Hostile Fire (RATH)-based architecture to facilitate efficient, rapid data collection and analysis. This solution is vital to execute Army Rapid Capabilities and Critical Technologies Office (RCCTO) testing at multiple expeditionary locations, to include remote and unimproved test sites. This capability is required to conduct rapid testing and maintain data quality across the life of RCCTO and other programs.
FVL Airborne Instrumentation Suite	Required Capability: The Center requires the capability to measure, collect, process, and distribute data collected onboard FVL aircraft to include new avionics/data bus architectures, sensors, and mission equipment packages. Bi-directional telemetry will be required to enable ground based command/control, networked data collection, and data transmission selection. On-board processing systems must be developed to enable rapid sortie generation and enable near-real time return-to-flight decision making. Current Capability: The Center currently maintains the capability to collect data across Ethernet and MIL-STD-1553 data buses as well as current generation sensor and mission equipment packages. One-way TM and off-board post processing is standard. Difference: Funding will enable ATEC and RTC to effectively and efficiently provide test services to the FVL CFT/Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines.	Procure on-board position/timing hardware, data download stations, and instrumentation network equipment and upgrade airborne instrumentation to facilitate the collection of high volume and high velocity data being generated by the Future Vertical Lift (FVL) aircraft and systems. Upgrade to bi-directional telemetry to enable selection of real-time data streams to be transmitted under a restricted spectrum. Upgrade legacy on-board processing systems along with flight test engineering data collection consoles for rapid sortie generation to enable near-real time return-to-flight decision making. Airborne instrumentation will have to be adapted to facilitate collection of data across new avionics/data bus architectures, sensors, and mission equipment packages. This enhancement will support input into the fielding decisions for the FVL aircraft and systems.
FVL Mission Equipment Test Modernization	Required Capability: The Center requires expanded communications and navigation test capabilities to incorporate GPS Denied/Spoofed environments, instrument approach/departure procedures, and communications/network systems. Current Capability: Currently only two GPS RNAV approaches into the Redstone Army Airfield exist. This requires the test team to travel to off site locations to gather all required data for qualification of aircraft flight management software and hardware. Communications testing is focused on voice communications with only limited capabilities to test network enabled communication systems. Additionally, these systems cannot be tested a simulated GPS denied/spoofed configuration. Difference: Funding will enable ATEC to effectively and efficiently provide test services to the FVL, APNT, and Networks CFT/Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines.	Redstone Test Center (RTC) will be required to provide input into the fielding decisions for the Future Vertical Lift aircraft and products (FLRAA, FARA, ALE, and FUAS) to include effectiveness, suitability, survivability, safety, and airworthiness. With the development of advanced navigation, communication, and network enabled warfighting capabilities that will be integrated into the FVL aircraft product lines. Additionally, the capability to test these systems in a GPS-denied or spoofed environment must be developed. The capability to perform this testing at Redstone Arsenal must be modernized to support the full breadth of required testing of the FVL mission equipment.

Title	Need	Description
FVL Data Processing and Analysis	Required Capability: Hardware and software to support data size and velocity requirements as high as 3 TB per aircraft per flight to provide input into fielding decisions for the FVL aircraft and systems. Current Capability: Redstone Test Center (RTC) can support data generations rates of 500GB per aircraft per flight. As aircraft begin to leverage more sensor and network centric approaches to increasing combat effectiveness, data generation volume and velocity is expected to sharply rise. The current levels of data generation (volume and velocity) have steadily increased as the platforms have begun to install sensor and network centric systems to enable increased combat effectiveness. Current data processing and analysis capabilities are at peak capacity to meet current requirements for legacy platforms. The legacy data processing and analysis systems are already being stretched beyond capacity with degraded visual environment and aircraft survivability test data generation (DVEPS 500 GB/aircraft/flight, ATW 7 TB/aircraft/flight, LIMWS 3 TB/aircraft/flight). In addition, the analysis of this data increases the collected data size by 3-4 times for full test results to be realized. Difference: Adequately meet FVL data size and velocity requirements.	Develop an Agile Forge Hardware Suite consisting of two servers, a storage device, 10 thin clients, fiber switches, monitors, and seven database hardware nodes that will support conduct of intensive data processing and analysis on data collected from Future Vertical Lift (FVL) aircraft and systems. This solution will leverage capability procured in the Telemetry System Modernization (TSM) Major Instrumentation project. In addition, data collected will support modeling and simulation (M&S) activities associated with these test programs and enable the use of a model-test-model approach for these programs. This solution will upgrade legacy systems and capabilities while leveraging previous Redstone Test Center (RTC) development of the RTC/ASE Architecture for Test and Evaluation of Hostile Fire Systems (RATH) and ASE Data analysis and processing TDAP.
FVL Countermeasure Performance Characterization	Required Capability: To quantify the probability of countermeasure for existing and emerging Aircraft Survivability Equipment (ASE) systems. Current Capability: The US Army does not have the capability to assess countermeasure performance of aircraft survivability systems. Difference: Funding will enable ATEC and RTC to effectively and efficiently provide test services to the FVL Cross-Functional Team (CFT)/Program Offices. Additionally, this will enable the Army Test & Evaluation Command (ATEC) to provide a technically robust assessment and qualification of all FVL mission equipment product lines.	Develop a dedicated open air, Infrared (IR) missile seeker test capability to measure countermeasure effectiveness for Future Vertical Lift (FVL) aircraft. With the Counter-Countermeasures (CCM) seeker test van being repurposed to support high energy laser work, a gap has emerged in the Armyâ€™s capability to assess this critical piece of the overall aircraft survivability. This solution will leverage existing investments (RATH, ASE data analysis and processing) and expand them to enable open air countermeasure effectiveness testing. This solution will procure and integrate the necessary items to deliver an open air countermeasure capability with up to eight IR missile seekers. Additionally, this solution will align this capability with existing cross-service seeker test van investments and seek to leverage those investments to the maximum extent possible.
DVE Integrated Sensor Performance Characterization	Required Capability: Redstone Test Center (RTC) must quantify integrated Degraded Visual Environment (DVE) sensor performance as well as qualify pilotage systems in the full spectrum of DVE. Current Capability: Current capability consists of only performing open air testing related to helicopter generated DVE. Other environments can only be tested if the natural environment presents an opportunity. This can be cost prohibitive. Difference: Funding will enable ATEC to effectively and efficiently provide test services to the Future Vertical Lift (FVL) Cross-Functional Teams (CFTs)/Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines. Requirement Driver: FLRAA will most likely need DVE-systems installed on aircraft by FY26, which will need to have been fully tested.	Procure and integrate atmospheric measurement, aircraft instrumentation, and data processing/analysis equipment to enable rapid sensor performance assessments for installed Degraded Visual Environment (DVE) systems. The FVL mission equipment is intended to include a DVE capability and will require risk reduction initiatives utilizing systems integrated onto live aircraft. Redstone Test Center (RTC) will leverage and expand the System of Systems Cooperative Engagement Test Infrastructure (SCETI) capability to enable integrated sensor testing and provide a local risk reduction DVE test capability to support the Environmental Exploitation System developmental testing requirements associated with the Future Vertical Lift (FVL) family of systems. The system will utilize a series of mobile instrumentation nodes that will enable expeditionary testing at both local and off-site locations. This solution will leverage investments in RATH, ASE Data Analysis and Processing, as well SCETI to enable end-to-end aircraft DVE testing.

Title	Need	Description
DVE Open Air Test Capability	Required Capability: The FVL mission equipment is intended to include a DVE capability and will require risk reduction initiatives utilizing systems integrated onto live aircraft. Army Test & Evaluation Command (ATEC) must have the capability to perform local DVE sensor integration testing and risk reduction efforts in rain, smoke, fog, and dust DVE. Current Capability: ATEC can only perform open air testing related to helicopter generated DVE. Other environments can only be tested if the natural environment presents an opportunity. This method can be costly and can introduce marginal risk in test schedules. Difference: Funding will enable ATEC to effectively and efficiently provide test services to the FVL Cross-Functional Team (CFT)/Program Offices. Additionally, this will enable ATEC to provide a technically robust assessment and qualification of all FVL mission equipment product lines.	Construct a 150 x 150 concrete pad with power, network, and conduits to support environmental generation equipment. Procure barrels, boxes, wires, poles, and other configurable targets and improve an area of range to provide a local risk reduction Degraded Visual Environment (DVE) test capability. The solution will leverage environmental generation equipment developed under the SCETI program and expand it to enable integrated sensor testing. It will also leverage the Active Protection System (APS) clutter investment by incorporating the environmental generating and structures developed in that program to enrich the open air test environment. This will support the Environmental Exploitation System developmental testing requirements associated with the Future Vertical Lift (FVL) family of systems.
Active Protection System Expeditionary Test Capability	Required Capability: As the ATEC 10-Series holder for Active Protection System (APS) Technical Performance testing, RTC has the requirement to execute testing at home, at other test centers, and at remote locations. RTC intends to fulfill this requirement using the current RATH model for Aircraft Survivability Equipment (ASE) testing, which is to develop a full expeditionary test capability complete with a mobile command and control (C2) trailer, high speed network infrastructure with classified wireless capability, the instrumentation needed to capture all required performance data, and modern data analysis and transfer tools. Existing RTC capabilities will be leveraged to the maximum extent possible. Current Capability: RTC's APS test group has no equipment of its own. Current test efforts are performed using borrowed equipment owned by other Army agencies and other RTC groups. In each case, the equipment must be competed for use with other project requirements.	Procure and equip a mobile command and control center that allows test engineers, test directors, system-under-test (SUT) operators, and important visitors a place from which they can execute the test, and analyze, view and store the test data. Develop and procure an ultra-high speed network that minimizes download time of large video files, allows wireless transmission of network traffic to eliminate external cables that connect to the SUT. Procure instrumentation that can measure and collect data about the threat, the vehicle, and the SUT. Leverage current RTC capabilities to develop data analysis methods, and procure additional capabilities as necessary. Develop methodologies to incorporate the capabilities of the APS Clutter Facility into APS testing.