U.S. ARMY

TECHNOLOGY COMPLEX

World-class facilities and equipment enabling technological discovery in directed energy, space and high altitude, cyberspace, hypersonic and strategic weapons, and integrated air and missile defense.

When completed, the U.S. Army Space and Missile Defense Command Technical Center's Technology Complex will be a 163-acre campus hosting multiple research and development facilities. The complex is designed to create a collaborative environment that is essential for innovation and technology development.

Currently, the Aerophysics Research Facility and Directed Energy Systems Integration Laboratory anchor the complex. Additional short-term projects to expand the Technology Complex capabilities include the DESIL expansion, the Digital Simulation and Analysis Center, the Reagan Test Site Operations Center-Huntsville, and the Central Building.

Future mid-term Technology Complex facilities will include the Space Laboratory, High Power Microwave Effects Laboratory, Air and Missile Systems Integration Laboratory, and the Weapons Technology Laboratory.

- *Space*: Environmental testing, payload demonstration, and assured position, navigation, and timing labs
- *Directed Energy*: System integration, atmospheric characterization, beam control, laser lethality, high power microwave effects labs, and anechoic chamber
- *Hypersonic*: Aerophysics, Hypersonic System Integration, and Aerothermal Integration Labs
- The facilities will include Hardware in the Loop capabilities

Excellence in the U.S. Army Space and Missile Defense Command Technical Center's four core competencies – directed energy, space and high altitude, test and evaluation, and hypersonic and strategic weapons – has positioned the Technical Center as the science and technology lead for multiple Army and Department of Defense modernization priorities.

The 2021 update to the Army Modernization Strategy reaffirmed the six modernization priorities from the 2018 strategy. The strategy highlighted the need for a "modernized Army ready to conduct multidomain operations as part of an integrated joint force" and pledged to "modernize [Army] installations and facilities to support new technologies and materiel that enable MDO."

As the Army emphasizes rapidly transitioning critical technologies to the warfighter, the Technical Center is keeping pace and modernizing facilities. Development of the Technology Complex postures USASMDC to lead science and technology and experimentation to help define the Army of 2040.

In fiscal year 2022, the Army's first end-to-end systems integration lab for directed energy opened. The existing Aerophysics Research Facility was also upgraded and refurbished. In fiscal year 2025, construction of the Digital Simulation and Analysis Center was completed.

- The DSAC is a state-of-the-art computational research development and analysis facility supporting computational and analytical capabilities for the Technical Center's hypersonic, directed energy, tactical space, and high-altitude laboratories.

Short-term plans include construction of a DESIL expansion facility, the Reagan Test Site Operations Center-Huntsville, and a Central Building to facilitate fabrication efforts and collaboration between technical experts around the complex.

- The Central Building facility will serve as the primary entrance and main hub of the Technology Complex.
- The DESIL expansion will be a state-of-the-art facility that allows industry and government customers the space to integrate and evaluate directed energy weapon systems.
- The Reagan Test Site Operations Center-Huntsville will provide an on-post command and control facility for missile defense testing and for space operations despite being more than 6,500 miles from Kwajalein Atoll in the Republic of the Marshall Islands."

Mid-term facility modernization projects include a High Power Microwave Effects Laboratory, High Energy Laser Lethality Lab, Space Lab, and a Weapons Technology Lab.

- The HPM Effects Lab will focus on radio frequency weapon development and effects testing. Tests will focus on fundamental experiments to test the physics of interactions with a variety of target materials to include metals, composite aerospace materials, energetic materials, optical materials, and sensors.
- Within the Space Laboratory, personnel will simulate satellite orbits and conduct on-orbit payload demonstrations supporting the Technical Center small satellite programs. Space Laboratory is also capable of thermal vacuum testing and outgassing, shock and vibrations testing, and multi-axis simulation using air bearing equipment.
- The Weapons Technology Laboratory simulates, characterizes, and develops pioneering technologies assuring PNT resiliency to the warfighter.

The laboratory space at the Technology Complex will not only enable cutting edge research and development for new weapons systems, the work will continue in sustainment and upgrades as these systems are fielded.

The USASMDC Technical Center workforce will continue their excellence in science and technology work as the Technical Center adds new focus areas such as reliability and maintainability.

The facilities at the Technology Complex will provide for hands-on mentoring of the next generation of Technical Center scientists and engineers to ensure continued success. The workspace in the facilities will be designed and built to be safe, secure, resilient, and sustainable. In addition, the facilities will be flexible and adaptable to enable the Technical Center to easily adjust to future mission requirements.

For more information, please contact: USASMDC Public Affairs Office

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