

»»» Operational Test & Training Infrastructure (OTTI)

Enabling High-End Advanced Test, Training, and Tactics Development (HEAT3)



The OTTI Program Executive Office of Space Systems Command is responsible for integrating and synchronizing the acquisition, development, and sustainment of integrated test and training capabilities to ensure the delivery of fully burdened force designs to the United States Space Force. Our area of responsibility encompasses the collection of distributed, enterprise-wide test and training systems and processes that establish and sustain combat readiness across the spectrum of conflict.

Strategic Guidance

Chief of Space Operations Line of Effort #1, Field Combat-ready Forces: "Force design and resourcing recommendations must be 'fully burdened' to incorporate crew force requirements, command and control, intelligence, networks, cyber defense, test and training infrastructure, sustainment, and facilities."

Space Test Enterprise Vision: "Space Force must go beyond the paradigm of traditional test ranges and provide a rapidly configurable, validated space test infrastructure. This infrastructure will enable training of our Guardians, as well as the delivery of agile capabilities that support mission threads from across the functional disciplines of the USSF."

Key Objectives

Establish an integrated system-of-systems architecture, inclusive of live, virtual, and constructive environments, that enables Guardians to test, train, and develop tactics in an operationally relevant employment scheme to achieve and sustain full-spectrum readiness.

Execute HEAT3 to generate and field combat-ready forces; enable operational concept development, refinement, and validation; and serve as a risk reduction capability to solve operational challenges.

The race is on to get resilient capabilities into space ahead of emerging threats. Space Systems Command is accelerating the pace of innovation through partnerships with the commercial space industry, traditional and non-traditional defense contractors, academia and allied nations. For more information and to get involved, contact SSCFrontDoor@spaceforce.mil.

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The OTTI Program Executive Officer (PEO) and Integrated Program Office (IPO), a partnership between Space Systems Command and STARCOM personnel, establishes Unity of Command at the FLDCOM level for planning and execution of OTTI programs. OTTI programs ensure the delivery of a fully burdened force design by integrating and synchronizing the acquisition, development, and sustainment of an enduring test and training capability architecture for the USSF.

OTTI SYSTEMS

Live Ranges: Test and training activities require access to live range threat representations. The live ranges include space, ground, and link segments. Live ranges are the ultimate verifier of ground truth for system and tactics evaluations.



Models and Trainers: OTTI shapes the development of verified, validated, and accredited (VV&A) digital twins, models, and simulators as well as Full-Mission Trainers.



Opposing Forces: Aggressor squadrons are critical for representing threats and adversary reactions across mission threads.

Synthetic Test and Training Environments: Synthetic environments will replicate the space domain with its resident space objects, adversary space capabilities, and associated orbital parameters for specific events. These environments will be adaptive, collaborative, and interoperable with other platforms and space systems, enabling distributed and realistic interaction between multiple blue and red forces.



Secure Facilities and Assured Networks: A secure computing and communication infrastructure will enable distributed test and training resources to interact realistically while meeting needs for bandwidth, latency, and reliability.