L3HARRIS™
FAST. FORWARD.

BIG TOP SPACE
CONTROL ENVIRONMENT

The U.S. Space Force's Big Top program, developed and sustained by L3Harris, offers dynamic live, virtual, and constructive training, test, and exercise environments to better prepare space control warfighters.

REAL-WORLD SIGNAL ENVIRONMENTS

With increased potential for adversaries to disrupt the flow of critical information and threaten national security, space control warfighters must be at the top of their game. U.S. Space Force's Big Top program prepares space control warfighters for everything from protecting against system attacks to keeping up with technology innovations and new satellite spectral environments.

Designed and built by L3Harris, Big Top represents a new approach to space control training. Space control operators stay up to date on systems and procedures by using realistic scenarios that reflect real-world signal environments, facilitated by multiple antennas that capture actual satellite spectrum data. A closed-loop test and evaluation environment enables operators to try new and innovative tactics and techniques in a safe environment with no impact to on-orbit assets.

Additionally, Big Top's modular, scalable physical architecture offers maximum capability training in the smallest footprint possible and allows for inclusion in both unit-level and national-level training exercises. These innovations help advance the state-of-the art in Space Mission Force tactics and techniques.

REALISTIC, TOTAL IMMERSION

To create a realistic, total-immersion training experience, Big Top delivers sample training scenarios using a graphical user interface (GUI) with a high-fidelity display that connects to operational systems.

The GUI is the first instantiation of new web application guidelines established by the Space Superiority Logistics and Sustainment Division. Operators work within a training environment that emulates a live signal environment. As a bonus, Big Top is small and modular, designed to go wherever the operators go, and helps reduce sustainment and maintenance costs.

Virtual Space Control Training, Test and Evaluation

BENEFITS

> Complements the Space Test and Training Range

> Prepares warfighters for real-world signal environments

> Offers networking capability to provide a common training environment for geographically dispersed users

> Keeps operators adept in current industry trends and future applications

> Provides significant improvement to the quality, quantity, and timeliness of space control training

TRAINING THE SPACE-READY WARFIGHTER

The use of space for transmitting communications signals—data, voice, internet, and other media—has become commonplace. Today's training must address the increased potential for adversaries to disrupt the flow of critical information and threaten national security.

REAL-TIME SATELLITE CAPTURES

Big Top provides multiple antennas to capture satellite signals from around the world. The recorded signals contain current data to assist instructors in determining the most appropriate signal environments to select for mission training scenarios. The signal data can then be incorporated into new training scenarios in days compared to the months it took previously.

TRAIN THE TRAINER

L3Harris' train-the-trainer manuals and instruction helps U.S. Space Force trainers transition to independent operation of the new tool. They have the ability to create highly customized training scenarios that contain constantly refreshed, real-world satellite spectrum data combined with instructor-generated synthetic signals. The result is a truly unique satellite signal environment simulation. Once created, these scenarios provide a repeatable and standardized set of training components to provide objective evidence of Space Mission Force crew readiness.

Big data analytical capabilities incorporated into Big Top enable trainers to better evaluate the effectiveness of human operators paired with hardware and software systems. Trainers are able to conduct formal evaluations by identifying trends in the effectiveness of operators within individual units across unit-level and national-level exercises.

Training is only the beginning. Big Top promises to be equally applicable and important to evaluation, testing, and exercise activities in the future.

ADVANTAGES FOR THE FUTURE

In addition to training applications, Big Top will be important to future evaluation, testing, and exercise activities. Improvements being added include:

> Hardware to facilitate use of other SATCOM frequency bands

> Compatibility with various space control mission emulators

> Enterprise network that allows multi-level security compatibility and the ability to push and score global scenarios

For more information, contact spacesuperiority@L3Harris.com.

ADDITIONAL ADVANTAGE

Big Top can be used as a proving ground for new systems by using simulation and test to verify system requirements—reducing risk and time to capability

Linear editing tool creates time-based, dynamically reactive satellite spectrum simulation capability

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