

*The latest in ATC training and simulation at your command:*

# MT-ASIST

The Aerospace Department at Middle Tennessee State University (MTSU) has launched the world's most advanced ATC simulator. The MTSU ATC Simulation and Integration System Trainer (MT-ASIST) features a 360-degree, seamless panoramic view, allowing realistic, real-world adaptability for research and training.

High-fidelity, real-time simulation capabilities and reconfigurable environments can be tailored for NextGen research and simulation as well as testing and validating new SE2020 concepts.

Simply put, our goal is to assess and validate NextGen concepts in a realistic environment.



**MIDDLE  
TENNESSEE**  

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**STATE UNIVERSITY**

*Aerospace Department*

MT-ASIST can provide a rich source of experienced AT controllers and airline pilots with extensive NAS experience who are available to act as "pseudo-pilots" during concept assessment. In collaboration with CSC, our MT-ASIST is capable of rapid scenario development and implementation.

[www.mtsu.edu/aerospace](http://www.mtsu.edu/aerospace)



## Under the Radar

MT-ASIST's radar stations simulate the en route environment as well as the TRACON and provide the most realistic environment possible short of being in an actual ATC facility.

## Capabilities

The simulator includes the ability to demonstrate gate-to-gate flight operations that model actual interactions between pilots, en route TRACON, and tower controllers. This enables users to conduct training, testing, and research using both current FAA-approved flight procedures and new concepts for airspace management and flight operations; it also provides training encompassing all aspects of the ATC environment.

- ▶ MT-ASIST has the ability to download any airport in the world.
- ▶ The complete simulation environment is the NexSim product built and maintained by CSC—a leading authority in ATC simulation.

## Pilot's Seat

The ATC lab is equipped with 12 pseudo-pilot stations manned by commercial pilots to simulate actual interaction in the ATC environment. These pilots are able to control a variety of aircraft to simulate the realistic conditions ATC controllers would face.

- ▶ Automated pilot interactions can be generated by the simulation computer when pseudo-pilots are unavailable.
- ▶ Voice interaction between pilots and controllers follows FAA standard procedures.
- ▶ Speech-to-text and text-to-speech capabilities are also available in the system.



## View from Above

The tower station simulator can simulate any tower environment worldwide. The 360-degree, seamless panoramic view allows realistic, real-world adaptability for research and training. Highlights include

- ▶ approach operations;
- ▶ configurable positions including clearance delivery, local control, and ground control accommodating seven positions;
- ▶ full scale realism—size, views, communications, procedures;
- ▶ variable airport models of actual airports and airspace;
- ▶ variable aircraft; and
- ▶ scenario development.

## Simulation Flexibility

Simulator capability encompasses every part of the ATC environment and can be configured for any scenario: historical, situational, or free flight. The system is ideal for testing new concepts such as

- ▶ ADS-B,
- ▶ aircraft flow analysis, and
- ▶ human factors and workload analyses on pilots and controllers.

Researchers and master trainers reach a new level of adaptability.

- ▶ New procedures can be designed, tested, and evaluated quickly. Most redesigns can be accomplished in hours, not weeks.
- ▶ Airspace management strategies can quickly be created, distributed, and tested in the environment over extended periods.
- ▶ A full range of weather conditions can be fed into the system, including real-time weather, day-night operations, dense fog, and fast-moving storms. Any weather conditions can be simulated.

Recorded data of previous simulation experiments or replicating historical situations can be replayed for analysis and training.

*Middle Tennessee State University (MTSU) in Murfreesboro is 30 miles southeast of Nashville. Within a day's drive of most of the southeastern and central United States and convenient to the Nashville International Airport, our community offers pleasant accommodations and plentiful dining choices. MT-ASIST is housed in the modern Business and Aerospace Building.*

## Aerospace Department

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