# ATC Laboratory

**JTA has developed a fully configurable air traffic control (ATC) laboratory, designed to support developmental work as well as test, evaluation, and validation tasks.**

The ATC Lab is the hub for ATC system engineering work performed by JTA. It features a flexible, modular ATC system that can be configured to the functionality of any country, including their maps, formats, and procedures. The ATC Lab emulates the entire operational ATC environment, including technical support positions as well as controller positions.

***Flight Data Processing*** The ATC Lab features comprehensive flight data processing capabilities. The Flight Data Processing Module supports flight plan entry, amendment, display, and cancellation; automatic presentation of flight plan data; and direct route processing. This module also performs flight plan probes and alerts, sector-sensitive flight path trajectory calculations, and bulk flight plan processing.

***Radar and Surveillance*** The Radar Data and Surveillance Information Processing Module allows the ATC Lab to handle current and emerging surveillance techniques. This module supports automatic dependent surveillance (ADS) processing and display, along with radar data processing and display. JTA is able to perform automatic flight plan correlation, conflict alert and display, and Minimum Safe Altitude Warning (MSAW) with the Radar Data and Surveillance Information Processing Module.

***Communications*** The Communications Module of the ATC Lab provides automatic processing, control and display of intra- and inter-facility communications. It interfaces with voice, teletype, and Aeronautical Fixed Telecommunications Network (AFTN) systems supporting the needs for sector-to-sector, adjacent ATC facility, and AFTN communications.

***Controller Workstations*** The ATC Lab features fully developed controller workstations including a voice-switching system for air/ground and ground/ground communications, a weather display to present meteorological and atmospheric information, and handling flight strips in either paper or electronic media.

***Statistics and Reporting*** Each of the modules of the ATC Lab have a recording and playback capability to support statistical analysis and reporting. These records enable detailed examination of the tasks performed in the ATC Lab support activities such as testing and validation, human performance measurement, and procedures development and training.

ASET™ Aviation System Engineering Tools

**Jerry Thompson & Associates, Inc.**

**AIRPORT and AVIATION SYSTEMS Planners, Designers, Engineers**

JTA®

# Air Traffic Innovation Begins at JTA

**JTA's professional aviation staff, along with its sophisticated ATC Lab and suite of Aviation System Engineering Tools (ASET) provide the resources to solve any ATC challenge. From developing new operations concepts to overcoming specific ATC problems, JTA leverages its capabilities to satisfy customer requirements.**

## ATC Lab Supports Sophisticated Engineering Tasks

*Test & Verification:* JTA designs and conducts testing and verification activities in support of new ATC technologies, concepts, and procedures. The ATC Lab provides a high-fidelity test environment to support exhaustive test requirements.

*Human Factors Assessment:* Because the ATC Lab emulates any given operational environment, it affords comprehensive human factors assessment for technology insertion, procedures development, and workload configurations.

*Training & Procedures Development:* The ATC Lab is used for the development, validation, and execution of training programs for all operational ATC staff: controllers, maintenance staff, technicians.

*Operations Concept Validation:* The ATC Lab provides a readily reconfigurable environment that is useful in the development and validation of a new Operations Concept. Multiple Operations Concepts can be configured in order to perform trade-off analysis between alternative approaches.

## Domain-Skilled Aviation Professionals

JTA has extensive expertise in aeronautical communications, navigation, and surveillance systems, both for the US and internationally. Our staff is comprised primarily of domain-skilled aviation professionals including air traffic controllers, airways facilities engineers, and aviation system engineers.

*Air Traffic Control Specialist:* JTA features an extensive cadre of Air Traffic Control Specialists, both civilian and military, with real-world ATC experience. All of our Air Traffic Control Specialists are full performance level (FPL) rated in Terminal or En Route air traffic control.

*System Engineer:* JTA System Engineers are experts in the planning, development, transition and implementation of new systems and technologies. Moreover, JTA System Engineers have specific, direct experience in the design and development of complex airspace systems, such as the US National Airspace System. Our System Engineers have unrivaled experience in the operations and maintenance requirements of airways facilities.

## JTA's ASET™ Benefits the Customer

JTA created its Aviation System Engineering Tools (ASET©) by supplementing the best commercially available tools with JTA-developed enhancements. These powerful tools are continuously improved and refined to remain state-of-the-art with new functionality developed as required by customer needs.

*Master Mapper:* The Master Mapper is a specialized world map featuring hundreds of detailed aviation information layers.

*Performance Analysis Suite (PAS)*: The PAS provides the capability to analyze and report on the performance of the NAS through a dynamic set of processes and automated tools

*GATOR™:* The Global Air Traffic Operations Research tool uses repetitive flight plans, airline schedules, actual flight data and overflight and landing fees for detailed analysis of air traffic operations on a global scale.

*NAS Design Tool:* The National Airspace System (NAS) Design Tool provides a methodical approach to derive detailed procedural, communication and machine-functional requirements from an Operations Concept.

## Excellence through Innovation and Hard Work


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**AIRPORT and AVIATION SYSTEMS Planners, Designers, Engineers**

10 Post Office Road
Forest Glen, Maryland 20910-1103
USA

Phone +1 301 565 8000
Facsimile +1 301 585 8680
www.jta-atc.com