ATFM SIMULATION AND TRAINING LABORATORY

Every flight requires the seamless interaction of a well-orchestrated team of professionals and well-engineered technology solutions. Simulation and training serve as the critical foundation that can bring people and technology together to ensure that air traffic flow management (ATFM) delivers fully on its potential benefits. Metron Aviation, a subsidiary of Airbus Americas, has served as a pioneer in the ATFM industry since 1995 – delivering thought leadership and innovative ATFM products and solutions that are essential in airspace efficiency.

At the foundation of Metron’s ATFM methodology is engaged stakeholder collaborative decision making (CDM) which ensures that processes and procedures are created by and implementable for all parties. The Metron Aviation ATFM simulation and training laboratory facilitates air navigation service providers (ANSP), aircraft operators and airport authorities’ ability to simulate and optimize ATFM procedures and to conduct training exercises on existing and revised procedures. The Metron ATFM simulation and training laboratory is an automation platform which provides an end-to-end Human-In-The-Loop environment that simulates air traffic management operations for all stakeholder roles.

The Metron simulation and training laboratory integrates Metron’s Harmony Sim product – a full function ATFM simulation engine - with the leading edge Metron ATFM operational tools – Harmony for ANSPs and Harmony Horizon – to provide a sophisticated closed loop simulation environment allowing complete realism in simulation and training exercises. All laboratory applications and hardware can be installed in customer premises or can be cloud based with user terminals supported in customer premises. The laboratory can support up to 10 positions, reflecting multiple ATFM stakeholder roles as needed.

By creating real-world scenarios and environments and providing the technology solutions engineered for ATFM success, Metron helps stakeholders achieve better collaborative decision making.

Benefits

- **Simulation/Training Fidelity** – full function real or fast time simulation based on created or recorded data sets providing complete alignment of simulation/training exercises with real world operations
- **Simulation/Training Sophistication** – integration of the simulation engine with leading edge situational awareness and demand-capacity balancing tools allows closed loop evaluation and training for advanced ATFM operational measures.
- **Simulation/Training Completeness** – Provides hands-on experience in evaluating and managing strategic, pre-tactical and tactical predictions for airports and airspaces and post operations metrics and performance analysis of air traffic operations for continued improvement

Technical Components

- **Harmony** – a comprehensive air traffic flow management solution that provides a framework for exchanging flight data among users who share the need for a common view of air traffic flow operation
- **Harmony Horizon** – an air traffic management solution that provides common situational awareness for monitoring air traffic demand and capacity
- **Harmony SIM** – a flexible platform that supports fast-time and real-time simulation and models the actions of flights, airlines and controllers