CSSI, INC.
Moving Research to Reality

Applied Research and Development

The FAA is currently looking into many concepts for the Next Generation Air Transportation System (NextGen). NextGen definition, development, and implementation requires much more than the design of a "paper architecture." Its objectives will only be fulfilled if research activities lead to new technologies and procedures that enable new concepts of operation that facilitate increased NAS capacity and efficiency. This transition is and will continue to be challenging.

CSSI is involved in the National Airspace System (NAS) Mid-Term CONOPS development and validation for the FAA. We are developing detailed CONOPS narratives for future NAS operations, as well as validating the effectiveness and merit of alternative concepts. Specific study areas include High Altitude Trajectory Based Airspace, Data Communications Segment 2, Staffed Virtual Tower, Multi-Sector Planner, Trajectory Based Operations (TBO), 3-Dimensional Path Arrival Management (3D PAM)/Atlantic Interoperability Initiative for Reduced Emissions (AIRE), and the overall End-to-End NAS CONOPS.

Within these narratives, we will provide information that describes the air traffic environment (e.g., airspace, traffic handling, operational roles and responsibilities, operational procedures, operational views, and operational scenarios) and the control environment and infrastructure (e.g., facility, support systems, and system maintenance concept).

An important aspect of this work is to integrate information generated from various NAS and NextGen requirements activities. This effort will enable the validation of the concept and its requirements, such as the level of information display requirements for Human-In-The-Loop simulations and definition of appropriate scenarios. The operational concept definition and validation capability at CSSI is extensible to a wide spectrum of government agencies defining their future needs and supporting their investment strategies.

CSSI satisfies our customer's needs by providing comprehensive services in the following areas:

Development and Analysis of Concepts of Operations

- Analysis, Development, and Validation
- Functional and Performance Analysis
- Cognitive Walk-Through
- Human-In-The-Loop Simulation Support

Advanced Concepts and System Integration

- System Level Performance Assessment
- Unmanned Aerial Systems and Safety
- The Integration of Advanced Vehicles into the NAS
- Dynamic Airspace Configuration Concepts

Advanced Model Application

- Local, Regional, and Global Environmental Modeling
- Runway Capacity Modeling
- Weather Impact Models
- Integration of Airspace and Human Performance Models

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