

ATC Prototype Development

PSI has the capability to prototype the ATC operational concepts of the future

Planning Systems Incorporated has over twenty years experience in developing prototypes and simulations for air traffic management and control. This experience spans all major subdivisions, including en route, terminal area, tower, traffic flow management, and ATC communications. Many of the prototyped concepts on which PSI has worked have found their way into operational use and have resulted in improvements in U.S. air traffic management. It is certain that current efforts in such areas as automated conflict resolution will result in further improvements.



- Algorithm development
- Trajectory modeling
- Conflict prediction
- Automated conflict resolution
- Traffic flow management and strategic planning
- ATC telecommunication networks
- Human factors and user interfaces
- Interoperability simulations and investigations
- Simulations for controller training
- Voice recognition and synthesis

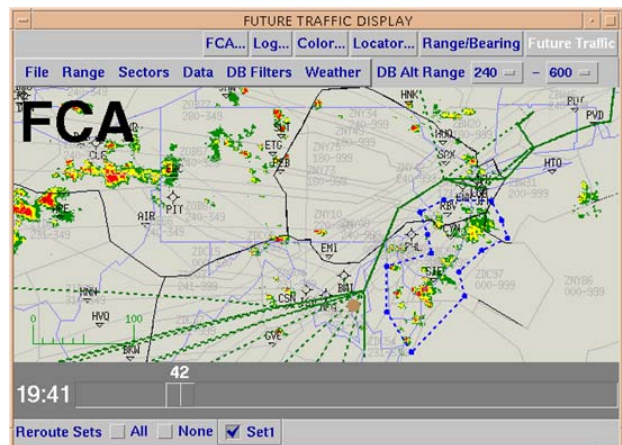


PSI has been successful in its ATC prototyping work because its staff possesses a rare combination of capabilities. Though all members of the staff have been formally educated in computer science or related disciplines, they are not typical software developers, for all also possess considerable knowledge of ATC concepts, terminology, data formats, and communication protocols. This knowledge of ATC enables PSI to communicate effectively with ATC professionals, requirements writers, and system evaluators. This knowledge of ATC also allows PSI to read and understand documents written by and for ATC professionals. Such effective communication is essential in ensuring that the system will be built as envisioned, in the shortest amount of time possible.

Specific application areas in which PSI has considerable experience include adaptation data (e.g. airways, nav aids, altitude restrictions) and use of advanced data representation and processing techniques (including XML schema development and

automatic code generation), route determination (including application of controller preferred routing), trajectory modeling (including consideration of aircraft performance characteristics, atmospheric conditions, and controller restrictions), trajectory conformance monitoring, trajectory reconformance, conflict prediction, trial planning assistance, automated conflict resolution, automated rerouting to avoid severe weather, controller workload prediction, telecommunications network security, mobile VoIP communications, coverage determination (e.g. radar, radio, GPS, WAAS), voice recognition and synthesis, and generation of traffic scenarios for testing, demos, and training.

The major computer systems that PSI is called upon to build generally require real-time software, multi-process and multi-computer solutions, inter-computer communication, sophisticated graphical user interfaces, and geographical displays of information. Most current work is being done in C, C++, and Java.



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