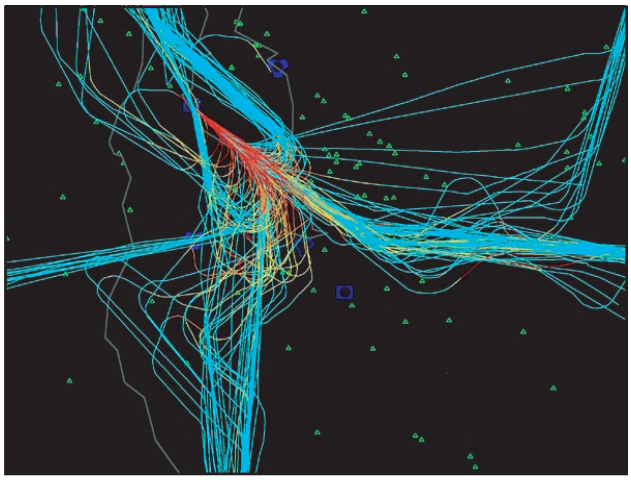
Human Factors

research and technology division

Performance Data Analysis and Reporting System (PDARS)

Objective

PDARS is a joint FAA-NASA effort that is an element of the Aviation Safety Monitoring and Modeling (ASMM) Project to develop the technologies that enable a system-wide capability to monitor day-to-day operations of the National Airspace System (NAS) and to measure Air Traffic Control's delivery of services, to ensure that they are safe, efficient, and meet the needs of its customers.



Approach

PDARS provides a capability for facility-level managers to monitor the performance of ATC in the NAS, identify and analyze operational performance problems, and design and evaluate improvements. PDARS provides the capabilities to the interconnected ATC facilities to routinely:

- Collect, extract, process, and merge ATC data
- Compute quantitative performance measures
- Disseminate performance-measurement reports
- Access system-design and simulation tools for "what-if" studies
- Archive basic operational data and performance statistics

PDARS has accomplished several key milestones in this process, including prototype network completion, prototype demonstration, generation of daily reports, prototype evaluation, design review, and delivery of the first upgrades to prototype capabilities.

Impact

Six FAA facilities representing a microcosm of the NAS – Southern California and Bay TRACONs, Los Angeles and Oakland Centers, the Western-Pacific Region, and the System Command Center – were selected to participate in an operational evaluation of the concept and tools. An initial PDARS prototype has been implemented and fielded at the six sites, FAA personnel have been trained on PDARS, and both the system and its reports are being used on a day-to-day basis. Both informal feedback and a formal design review yielded positive comments on the prototype, guidance for where to pursue upgrades, and a drive to expand the capability to other facilities. The demonstration of the PDARS prototype was extended to facilities of the Southwest Region in 2002 and to the Southern Region during 2003. In 2004, facilities in the Central Region were added and the FAA announced a schedule for adding all of the remaining 20 ATC Centers in the continental U.S. before the end of the year.

Information Technology

PDARS incorporates innovative technology for real-time collection and rapid processing of large volumes of complex data, and state-of-the-art tools for extraction, presentation, and visualization of information, including radar flight tracks. Data are accessed daily from all sites, processed overnight, and reports are delivered to all six facilities routinely each morning to share information at the daily telecons.

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URL: http://humanfactors.arc.nasa.gov/ihs/