Communications, Navigation, and Surveillance Air Traffic Management

A Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) master plan is a modernization plan for a needs-driven, economically justified, evolutionary air transportation system.

The Plan must: (1) sustain systems and infrastructure necessary to maintain existing level of service; (2) introduce new operational procedures, technologies, policies, and automation concepts necessary to meet user and operator needs; and (3) introduce appropriate program management structures and controls for successful implementation of the Plan. Development of the Plan is shown in the Planning Process figure.

Why Have a CNS/ATM Master Plan?
International Civil Aviation Organization (ICAO) members have long understood that promoting air commerce is key to their economic development. In most states, the existing ATM infrastructure will need to undergo significant change to support growth and to accommodate new technologies and capabilities of the aircraft. The aviation environment is rapidly changing and ICAO members must adaptively respond to these changes in order to harmonize CNS/ATM systems across the national boundaries.

Having a long-term CNS/ATM master plan provides a systematic process to prioritize and balance investments. Several infrastructure changes already have been implemented in air commerce around the world. Space-based CNS technologies have made Air Traffic Control (ATC) systems more interdependent across national boundaries. ATC system enhancements, however, often require investments in avionics. Consequently, infrastructure enhancements are highly dependent on a common understanding between Civil Aviation Authorities and the aviation user community.

Our Experience in Master Planning
The MITRE Corporation's Center for Advanced Aviation System Development (MITRE/CAASD) has focused not only on development of new CNS/ATM technologies and procedures necessary to enhance capacity and efficiency of global aviation systems, but also in the end-to-end, operational performance of the resulting integrated system. We understand air transportation system trends and global aviation needs. We have experience in budgeting, schedules, and risk management on both small and large scale airspace system projects.