Progress in aviation is built on collaboration, innovation, and persistence. These qualities serve as the foundation of our work as we help the Federal Aviation Administration and our other customers plan, develop, and field new capabilities that help modernize air traffic management systems and practices to improve the safety, security, capacity, and efficiency of the global air transportation system.

**Resolving Global Aviation Issues through Research and Development**

The MITRE Corporation is a not-for-profit organization that operates multiple federally funded research and development centers, including the Center for Advanced Aviation System Development (CAASD) sponsored by the FAA. By conducting an ongoing program of research, development, and engineering in collaboration with the aviation community, CAASD works to advance aviation in the United States and around the world.

MITRE has more than 55 years of experience partnering with the FAA and international civil aviation authorities to modernize air traffic management systems and operations. Our contributions include decision support systems for air traffic controllers and traffic flow managers; communications, navigation, and surveillance systems; procedure and airspace design; operational benefits and capacity analysis; and aviation safety analysis and improvements.

We understand the complex challenges that our customers face. Working in partnership with our customers and other stakeholders, we develop solutions for their most critical needs. We emphasize quality, integrity, and objectivity. This requires a long-term perspective focused on the public interest. We also seek ways to merge operational, technical, and program expertise for effectively deploying and transitioning new and enhanced capabilities.

**Dedicated to Improving Aviation Worldwide**

In addition to our work for the FAA, CAASD performs work for international civil aviation authorities, airport operators, airlines, and other aviation organizations in more than 50 countries. We also conduct collaborative research with industry and academia. Finally, we help provide training—both in the United States and around the globe—on critically important aviation topics, including safety management system implementation and aviation system block upgrades.

Through our extensive modeling and simulation tools, significant data analytics capabilities, and world-class laboratories, we are able to provide the global aviation community with integrated solutions for new operational concepts and systems.
The FFRDCs that MITRE operates take on tough technical challenges of national importance and provide leading-edge, practical, and cost-effective solutions. Here are some examples of recent MITRE achievements.

**Defining the Future National Airspace System**
CAASD is providing technical and operational analysis as well as complex concept evaluations to the FAA and the aviation community as part of planning for the Next-Generation Air Transportation System (NextGen). Developing and implementing NextGen is a huge undertaking with many challenges. We are working with the FAA to develop the vision, strategy, operational concepts, architecture, and implementation plans for NextGen.

**Improving Aviation Safety**
CAASD is developing and applying analytic capabilities to identify and address safety-related issues, with a focus on solving unanticipated problems before incidents and accidents can occur. We understand information system security and airspace operational security, and we are working to improve procedures and systems to mitigate threats and their potential operational impacts.

**Improving Airspace Capacity, Performance, and Efficiency**
CAASD is developing air traffic management (ATM) decision support concepts and capabilities; communications, navigation, and surveillance (CNS) concepts and capabilities; airport and airspace concepts and designs; and procedural improvements that will enable efficient operations. We understand the complexities and interactions of airspace users’ objectives and operations, and we develop methods for measuring and predicting airspace performance. We also identify solutions to improve performance.

**Increasing Airport System Capacity**
Across the globe, CAASD is assessing empirical data and developing capabilities to identify the location, magnitude, and causes of current and projected future airport capacity shortfalls. We are also developing improvements to use existing airport capabilities and future airport investments more effectively.

**Achieving Global Harmonization**
CAASD collaborates with the FAA to provide global aviation leadership while ensuring that its evolving plans for ATM/CNS are compatible and aligned with international civil aviation authorities. A key focus involves developing integrated systems in harmony with international standards. As we continue to increase our knowledge of best practices—in areas such as airport safety, airspace design, airport and airspace capacity enhancement, equipage, and ATM—we apply them to the specific circumstances that characterize each country’s civil aviation needs.