The Aviation Safety Program under the Aeronautics Research Mission Directorate has many initiatives to enable safer air transport systems. A data-mining team at Ames developed multiple algorithms useful for sorting through flight data and has shared them with the industry.

Southwest Airlines Co.
Dallas, Texas

Southwest first used some of NASA’s tools in 2003 when evaluating a higher-than-usual rate of actual unstable approaches versus reported ones. After years of on-off collaboration, Southwest and NASA signed a Space Act Agreement in 2011 to share NASA’s algorithms and refine them using Southwest’s real-world flight data.

The two algorithms—the Multivariate Time Series search and Virtual Sensors—have been used by the company to track and improve fuel efficiencies for flight paths between cities. Southwest has also leveraged the technology to work with air traffic controllers, developing methods to increase the number of stable approaches by its planes.