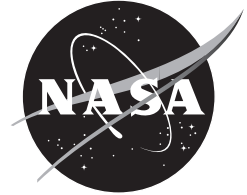


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## SMALL AIRCRAFT TRANSPORTATION SYSTEM

# NASA-Led Technologies Could Increase Air Travel Access



*NASA has demonstrated how the latest technologies could significantly enhance operating capabilities of small aircraft, allowing, for example, flights into and out of small airports without radar or towers. This Cirrus SR-22X was used as a flying testbed for SATS research at NASA's Langley Research Center. The SATS concept would support propeller and jet aircraft for business and personal transportation for on-demand, point-to-point trips, as well as scheduled service.*

## Travel Concept Demonstrated

NASA, the Federal Aviation Administration (FAA), and the National Consortium for Aviation Mobility (NCAM) held a demonstration in June 2005 of a supplemental system to congested interstate highways and major "hub" airports.

By enhancing the capabilities of small aircraft and small airports, the Small Aircraft Transportation System (SATS) concept would expand capacity and allow more access to more communities in less time.

To prove the SATS concept will work, the NASA-led team completed a five-year research plan that totaled about \$150 million dollars spread across the public-private partnership. The team conducted ground and flight research at several airports around the country, which culminated in flight, benefits, and opportunities demonstrations in 2005.

The SATS concept offers an on-demand, point-to-point, widely distributed transportation system. It relies on advanced four to ten passenger aircraft using new operating capabilities. Such a system promises improved safety, efficiency, reliability and affordability for small aircraft

operating within the nation's 3,400 public-use landing facilities. Nearly all of the U.S. population lives within a 30-minute drive of at least one of these airports.

Can you imagine these same-day travel options?

- **Business:** From Chattanooga, visiting clients in Jackson, Crossville and Pigeon Forge, Tenn., and still making it back in time for your child's little league game.
- **Leisure:** A family of four taking an affordable weekend roundtrip visit to grandparents over 300 miles away.
- **Medical:** Having outpatient surgery at Johns Hopkins Medical Center in Maryland and returning to your own bed in Farmville, Va. that night for recovery.
- **Package Delivery:** Same day prescription drug delivery to senior citizens in smaller communities like Wisconsin Rapids, Wisconsin or Port Arthur, Texas.

Now imagine that the aircraft and airports needed for the previous scenarios are readily available to the public, with jet-like performance and safety at propeller-like prices.

SATS will take advantage of a new generation of safe and affordable aircraft that is emerging as a result of NASA investments in aircraft technology. Advancements include revolutionary propulsion systems, improved cockpits, synthetic vision, new communication systems and real-time weather data. These investments were made possible through NASA's General Aviation Propulsion (GAP) and Aviation Safety and Security (AvSSP) Programs, and the Advanced General Aviation Transport Experiments (AGATE). SATS will use advanced cockpit, flight path and communication technologies to eliminate the need for control towers and ground-based radar systems at small airports. These advancements will allow multiple aircraft to take off from and land at the smallest of neighborhood airports, in nearly all weather conditions. Early consumers of SATS are expected to have access to "jet-taxi-services" with hired pilots. Scheduled services will likely emerge where travel demand requires and as entrepreneurs discover and meet growing consumer need.

## New Capabilities For Safety, Growth

The SATS five-year research plan invested in four operating capabilities:

1. Higher-volume operations at airports that do not have control towers or terminal radar facilities.
2. Technologies enabling safe landings at more airports in almost all weather conditions.
3. Integration of SATS aircraft into a higher capacity air traffic control system, with complex flows and slower aircraft, for en route flights.
4. Improved single-pilot ability to function competently in an evolving, complex national airspace.



## Public-Private Partnership

NASA has taken an important step towards proving the feasibility of the SATS concept. The National Consortium for Aviation Mobility (NCAM) and its SATSLabs in a number of states have teamed with NASA and the FAA.

This federal-NCAM partnership developed operating capabilities to help enable on-demand point-to-point air transportation. Its research culminated in a joint NASA, FAA, and industry flight demonstration of the SATS operational capabilities and the concept's benefits and opportunities. The results will help establish the basis for future decisions by local, state, and federal policy makers regarding SATS and air transportation.

NCAM is made up of more than 130 members from private businesses and public entities nationwide, and expects to grow. Members include industry partners from the AGATE Alliance Association Inc.; state or regional SATLABS partnerships; state and local aviation authorities; airport operators; general aviation manufacturers; transportation services suppliers; transportation research institutions (including universities); pilot training institutions; and suppliers of communication, navigation and surveillance systems for small transportation aircraft.

For more information, please check the Internet at: <http://sats.nasa.gov>.

For more information about NASA aeronautics research see: <http://www.aero-space.nasa.gov/>



*Affordable, small jet aircraft based on new technologies are being manufactured today. Cockpits of the future (left) will include sophisticated graphical displays that will help make small planes safer, easier and more efficient to fly. Six aircraft from across the country demonstrated SATS technologies and operating capabilities in Danville Va., in June 2005.*