



New Visions

Insights on Air Mobility and Economic Growth

*Newsletter of the
Indiana SATS
Consortium
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Indiana SATS Consortium Hosts Inaugural Meeting

On February 27, 2004, the Indiana SATS Consortium hosted its inaugural meeting at the Omni Indianapolis North Hotel to an audience of over 100 participants who were interested in learning how emerging technologies in aviation and research investments through NASA could potentially benefit Indiana's economy. IIT Industries underwrote the cost of the meeting. The luminaries who delivered presentations and/or participated in panel discussions were:

- Dr. Bruce Holmes, Associate Director for Aerospace/Vehicle Systems Integration at NASA's Langley Research Center
- Pete McHugh, FAA SATS Program Manager, Federal Aviation Administration
- Indiana Lieutenant Governor Kathy Davis
- Admiral Bob Dunn, President, National Consortium for Aviation Mobility
- Jack Sheehan, Executive Director, National Consortium for Aviation Mobility
- Stuart Cooke, Manager, Transportation Systems Analysis and Assessment Group at NASA's Langley Research Center
- Dr. Ken Stackpoole, Director of Government Relations at Embry-Riddle Aeronautical University and Director of Business Development at the Southeast SATS Lab
- Dr. Morton Marcus, Economic Advisor to the Indiana SATS Consortium and Professor Emeritus at Kelley School of Business, Indiana University
- Jim Keefer, Aeronautics Section Manager, Indiana Department of Transportation
- Lincoln Schrock, Indiana Northeast Development

The State of the Air Transportation System

The first presentations of the morning were informative and riveting, as both Pete McHugh and Dr. Bruce Holmes began by painting a grim picture of the current state of the air transportation system. The nation's major airports are reaching saturation and are overwhelmed with increased air traffic, leading to frequent delays and cancellations. For trips of less than 500 miles, the average speed from doorstep to destination is between 35 and 80 miles per hour, no faster than driving a car. The number of aircraft manufacturers and airlines has dramatically decreased over the past decade and many airlines are currently unprofitable. The last innovations in aviation are over 25 years old and the current aviation system, including airports, airspace, aircraft and airline business models, doesn't scale to meet future demand. The air transportation system is clearly in crisis and in need of transformation.

The President and Congress created the Commission on the Future of the United States Aerospace Industry in 2001, which was active from November 2001 through November 2002. The Commission's mandate was to study the issues associated with the future of the aerospace industry and to make policy recommendations that ensure a robust and healthy industry. In particular, the mandate stated that transforming the U.S. air transportation system to meet our civil aviation, national defense and homeland security needs is a national priority. The Commission issued its final report in November 2002.

In response to the Commission's recommendations, Secretary of Transportation Norman Mineta announced the Next Generation Air Transportation System Initiative, a multi-year, multi-agency effort to develop the air

transportation system for the year 2025 and beyond. According to Secretary Mineta, “if the United States wants to retain its global air transportation leadership, and we do, we need to modernize and transform our air transportation system, starting right now.”

To coordinate this critical work, Secretary Mineta established a Joint Planning and Development Office (JPDO), which includes representatives from the Department of Transportation, NASA, FAA, Department of Defense, Department of Homeland Security and Department of Commerce. Dr. Bruce Holmes is one of NASA’s representatives at the JPDO. The JPDO is currently in the process of writing a national plan for the transformation of the air transportation system and its report will be completed in December 2004.



Small Aircraft Transportation System (SATS)

The SATS vision imagines a new world of on-demand, point-to-point, affordable jet travel that has the potential to increase productivity throughout the nation, expand economic development to smaller communities and improve the overall quality of life. The SATS project is a five-year, \$69 million research and development program conducted through a public-private partnership jointly managed by NASA, FAA and the National Consortium for Aviation Mobility (NCAM).

Pete McHugh characterized the SATS project as a down payment on the transformation of the air transportation system. It envisions the use of small aircraft for mass transportation, which is a disruptive innovation. Today, 98% of air passengers travel through 460 commercial service airports and 70% travel through 30 large hub airports. If the SATS project is implemented, the result will be a more distributed air transportation system that relieves the congested hub and spoke transportation system by utilizing over 3,000 underutilized airports throughout the nation. Its focus is to prove that the following four new operating capabilities will enable safe and affordable access to virtually any runway in the nation in most weather conditions:

- Separation and sequencing of multiple aircraft operating at airports without traditional ground-based terminal radar and communications systems.

- Safer aircraft takeoff and landing operations in poor weather at minimally equipped airports (without control towers or ground-based navigation and lighting systems), while minimizing land-use impacts.
- Improved single-pilot performance for safety, accuracy, and ease-of-use.
- Integration of larger numbers of small aircraft into the National Airspace System.

To a rapt audience, Pete McHugh elaborated on the airborne internet and how it will enable ten aircraft to operate simultaneously in a non-radar environment using self-sequencing technology and how the cockpit of the future will respond to voice commands, automatically guide the aircraft around severe weather conditions and project a pre-planned course “highway” for the pilot to follow in low visibility conditions. NASA and NCAM are planning a demonstration of the four operating capabilities at the Danville Regional Airport in Danville, VA in mid-2005 with aircraft equipped with these new technologies.

Dr. Bruce Holmes spoke about the exciting new business models that are emerging as a result of the SATS project. There are currently 10 companies developing new jet aircraft for a future airborne taxi fleet. The aircraft are a new class of six-seater jets that are priced at \$1 million to \$2 million apiece and have an operating cost of \$1.00 per aircraft mile. (For comparison purposes, a new jet today would require a minimum investment of \$5 million). Dr. Holmes believes that these 10 companies currently have total combined orders of \$5 billion and that the future airborne taxi fleet will provide on-demand, point-to-point, high-speed, affordable personal air transportation.

Pete McHugh and Dr. Bruce Holmes concluded their presentations on a high note. Dr. Holmes predicted that we will see as much progress in technology during the first two decades of the 21st century as we realized in the entire ten decades of the 20th century. He believes that the cost of speed will continue to decline, the scalability of the air transportation system is possible through transformation and that SATS will play a critical role in transforming the air transportation system. However, he continually stressed that “transformation is local” and that it would ultimately be up to us to make it happen. And as Pete McHugh aptly noted, “It’s all about vision.”



Indiana SATS Consortium

The Indiana SATS Consortium is the sixth SATS Lab to be established in the United States. It was inspired by the “Smith Airfield ForEver” initiative, which was a campaign to save Smith Field, a small airport in Fort Wayne. While the other five SATS Labs (located in Florida, North Carolina, Virginia, Maryland and Michigan) are focused on the research and development of SATS technologies, the goal of the Indiana SATS Consortium is to prove the regional economic benefits of using these technologies to make point-to-point air travel available from most small airports. Through its efforts, the Indiana SATS Consortium would like to develop an effective methodology to measure the economic impact of small airports and to contribute to the growth of Indiana’s economy.

Indiana Lieutenant Governor Kathy Davis told the audience that although she just learned about SATS, she supports the Indiana SATS Consortium’s objectives and is looking forward to being a part of it. Lt. Governor Davis spoke about how Indiana had experienced a tough economy over the past two years and discussed the business-friendly initiatives that the State had implemented to create fertile ground for existing and start-up businesses. She believes that SATS could potentially offer tremendous employment opportunities in Indiana, which she described as a great manufacturing State.

At the conclusion of Lt. Governor Davis’s presentation, Admiral Bob Dunn and Jack Sheehan presented her with a certificate that officially recognizes Indiana SATS Consortium’s membership in the National Consortium of Aviation Mobility (NCAM). NCAM is a non-profit organization with a mission to coordinate and integrate the technical work and products of its members, and foster technology transfer and standards needed for commercialization. NCAM is focused on developing advanced technology flight applications through cost sharing with NASA’s SATS Program, the FAA and the Department of Transportation.

Dr. Ken Stackpoole gave an informative presentation on the Southeast SATS Lab, which was established in Florida in partnership with NASA, government, industry and academic partners. Current membership includes 75 public and private partners. Dr. Stackpoole started planning for the Southeast SATS Lab in 1998. By 2002, SATS legislation had been passed and signed by Governor Bush, the Florida Department of Transportation had committed \$1.0 million and the Southeast SATS Lab had accomplished the following:

- Established a flight test bed throughout Florida

- Equipped aircraft with experimental avionics packages and communications technologies
- Established SATS command and control centers

After Dr. Stackpoole’s presentation, it was apparent that the Indiana SATS Consortium could benefit from the broad and deep experience of the Southeast SATS Lab.

During lunch, Dr. Morton Marcus delivered an entertaining presentation on how SATS could positively impact the State of Indiana. However, being the sharp economist that he is, Dr. Marcus emphasized that in order to achieve the goals of the Indiana SATS Consortium, the following data are sorely needed:

- An inventory of land use in every county with an airport
- An inventory of businesses in the State and an assessment of their capabilities
 - With over 120,000 people in Indiana employed in some aspect of the automobile manufacturing business, it is important to know how they could potentially be involved in the production of SATS technologies
- The current users of Indiana’s small airports and the nature of their business

Dr. Marcus concluded that SATS offers Indiana the opportunity to be in the early stages of something important and to re-vitalize communities that are currently isolated. He even went so far as to state that SATS could be a tool for the liberation of minds in the State of Indiana.



The Role of Aviation in Economic Development

Stuart Cooke provided us with an overview of the sophisticated tools that NASA’s Transportation Systems Analysis and Assessment (TSAA) Group is developing to determine the role of aviation in economic development. Concurrent with the technology development and demonstration phases of the SATS program, NASA is sponsoring a series of “transportation system analyses” studies. These studies will examine the economic viability, market potential, environmental impacts and community acceptance of a small aircraft transportation system. Specifically, the TSAA will determine the economic and

travel demand for SATS, assess the impact of SATS operations in the National Airspace System and evaluate the market and business case for SATS. TSAA has already completed demand studies in North Carolina and North Dakota and is ready to work with the Indiana SATS Consortium to conduct a demand study in Indiana.

Jim Keefer touted the new Indiana State Aviation System Plan, which was recently published by the Indiana Department of Transportation and includes a needs assessment of airport users within the State. Mr. Keefer stated that he has been increasingly involved in airport

preservation efforts and in promoting the benefits of aviation to the general public. Lincoln Schrock enthusiastically relayed anecdotes about how some businesses in northeast Indiana selected a specific locale due to its proximity to the airport.

At the end of the meeting, we were clearly energized and excited about SATS and most were convinced that it will positively impact Indiana's future economic development. We understand the vision --- now it's up to us to make it happen. After all, as Dr. Holmes so eloquently explained, "Transformation is local."

Meet the Indiana SATS Consortium Officers

Mike Loomis, President

Mike Loomis is a native of Fort Wayne, Indiana. He attended Indiana University in Bloomington, completing his Bachelor's Degree in Forensic Studies in 1978, and graduated from the University of Dayton School of Law in 1981 ("the birthplace of aviation"). Mike served as an aide to U.S. Senators Richard G. Lugar and Danforth J. Quayle from 1981-83. He practiced law in Fort Wayne from 1983-84 and was a Marion County Deputy Prosecutor in Indianapolis from 1984-91. Mike joined a commercial litigation firm in Indianapolis until 1993, when he returned to Allen County as a deputy prosecutor. He became Chief Deputy and worked in that capacity for nearly five years. Mike reentered private law practice in 2001.

Mike is a member of the Allen County Bar Association; the Indiana State Bar Association; the Lawyer-Pilots Bar Association; the National Transportation Safety Board Bar Association; and is a panel attorney for the Aircraft Owners and Pilots Association legal services plan. He is a private pilot and engages in a law practice that includes aviation; business; commercial litigation; and real estate matters.

Mike is admitted to practice before the Supreme Court of Indiana, all Indiana trial courts, the U.S. District Court for Northern Indiana and the U.S. District Court for Southern Indiana.

Bob Wearley, Vice President

Bob Wearley was born and raised in Woodburn, Indiana. He entered the Air Force in 1952 and started his flying career as a 2nd Lieutenant pilot in 1954 and retired as a Lieutenant Colonel. From 1969 to 1978, he served as the chief pilot for Howard Hughes' personal fleet of aircraft.

After Hughes' death, Bob took the opportunity to fly 747s for Singapore Airlines. After living in Singapore for five years, he went on to fly for ALIA, the Royal Jordanian airline.

After retiring from the airlines, Bob was the Director of Airport Marketing for the Greater Fort Wayne Chamber of Commerce and the Fort Wayne International Airport. He also served seven years on the Aviation Board of Directors. Bob is now actively involved in his own enterprise, Commercial Filter Service.

Bob has over 15,000 hours flying time. He is type-rated in 13 different aircraft including the Lockheed Connie; DC 6/7; Boeing 707/720B and 747; and a number of corporate jets and turbo-props.

Ralph Marcuccilli, Secretary-Treasurer

Ralph Marcuccilli is also an Indiana native, born and raised in Marion, Indiana. He graduated from Indiana University with a Bachelors Degree in Finance in 1989 and Indiana Wesleyan University with a Masters Degree in 1994.

Ralph currently manages the operations center for STAR Financial Bank in Fort Wayne. This center is the base for STAR's centralized operations and computer center. STAR's focus on utilizing technology to deliver banking services to customers keeps Ralph in touch with the latest in computer technology. STAR has 40 banking offices across Northeast Indiana.

Ralph is an aircraft owner and has been a pilot since 1987 with over 1,200 hours.

Indiana SATS Consortium Membership Drive

In the next few weeks, you will be receiving an invitation to join the Indiana SATS Consortium along with a membership packet. Now that you are aware of SATS and how it could potentially transform Indiana's economy,

we encourage you to join us. Although the Indiana SATS Consortium is partly funded by NASA and NCAM, we must match their investment dollar for dollar.

Indiana SATS Consortium

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