

# InFlight Weather Forecasts at Your Fingertips

A new information system is delivering real-time weather reports to pilots where they need it the most—inside their aircraft cockpits. Codeveloped by NASA and ViGYAN, Inc., the WSI InFlight™ Cockpit Weather System provides a continuous, satellite-based broadcast of weather information to a portable or panel-mounted display inside the cockpit. With complete coverage and content for the continental United States at any altitude, the system is specifically designed for in-flight use.

Hampton, Virginia-based ViGYAN developed the system, originally called the Pilot Weather Advisor, through NASA's **Small Business Innovation Research (SBIR)** program. In the early 1990s, Langley Research Center awarded the company Phases I and II SBIR contracts to develop an innovative concept for a graphical weather advisory system for pilots. Although the Pilot Weather Advisor showed great potential, ViGYAN discovered that the technology was ahead of its time. The system could not become a reality until the cockpit displays and affordable satellite time needed to support it became available.

After investing its own money to keep the project afloat, ViGYAN saw another opportunity to complete the system in 1997 as satellite costs dropped and new cockpit multi-function displays appeared on the market. After more than a decade of work, the company completed its Pilot Weather Advisor in February 2002 through a Phase III SBIR contract with Glenn Research Center's Weather

Accident Prevention Project, which is part of NASA's Aviation Safety Program.

In April 2002, ViGYAN sold the Pilot Weather Advisor to WSI Corporation, of Billerica, Massachusetts. According to Keith Hoffler, a former ViGYAN employee who joined WSI as part of the transaction, "We thought about going it alone, but realized that combining our leading-edge technology with the market leader in aviation weather was the smartest way to ensure success." Less than a year later, WSI commercialized the technology as the WSI InFlight Cockpit Weather System.

Gus Martzaklis, Weather Accident Prevention project manager at Glenn, states, "It's gratifying to see NASA-sponsored aviation technologies, like graphical weather displays and satellite data-link communications, come together over the last few years and finally make their way into the marketplace." The WSI InFlight system promises to benefit aviation safety significantly. Martzaklis explains, "Weather contributes to about 30 percent of all aviation accidents. Our research has shown when pilots have real-time, moving weather maps available in the cockpit, they are able to make better, safer decisions faster." With its complete, uninterrupted signal reception, the WSI InFlight system provides a distinct advantage over current ground-based, data-link systems that often have inconsistent signal coverage in large portions of the United States and at various altitudes.



The WSI InFlight™ Cockpit Weather System enables pilots to receive and view high-resolution weather information right inside their aircraft cockpits.



Pilots can view accurate, up-to-date weather information with WSI NOWrad® radar graphics on a variety of panel-mounted, multi-function displays and portable devices.

Pilots using the cockpit weather system receive the most accurate, up-to-date weather information with WSI NOWrad® radar graphics, WSI's flagship national radar mosaic. Updated every 5 minutes, this is the same radar that WSI supplies to its sister companies, The Weather Channel and weather.com, to provide forecasts. Equipped with WSI's special purpose antennas and receivers, pilots can view the high-resolution weather information on a variety of panel-mounted, multi-function displays and portable devices, such as handheld personal digital assistants. WSI's Pocket PC display option allows even the tightest paneled aircraft to utilize the system. After the initial cost of the antenna and receiver, WSI offers flat-rate subscription plans for the service.

WSI InFlight is gaining increased recognition in the aviation community, as several key companies have selected it for their products. UPS Aviation Technologies is working to integrate the system into its MX20 multi-function display for commercial release this year. Rockwell Collins, a global company providing aviation electronics for the world's aircraft manufacturers, selected

WSI InFlight to provide weather briefings to aircraft equipped with Collins Pro Line 21 flight deck displays. Northstar Technologies is also integrating the system into its CT-1000 Flight Deck Organizer, which will be marketed to Northstar's growing electronic flight bag customer base.

In addition to improving aviation safety, the same technology in WSI InFlight is forming the foundation for marine and ground transportation applications. WSI is currently developing a boating weather service for mariners that is similar to the cockpit weather service. The company will soon release WSI AtSea™ which will provide full-color radar, live buoy reports, and offshore forecasts delivered in real time and integrated with a boat's navigation systems. Whether in flight or at sea, WSI's technology keeps people informed about ever-changing weather conditions that can impact their travel and safety.

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