

# RESEARCH FRONTIERS

SPD-Smart™



Those of you who follow Research Frontiers on social media, get our press releases, or who receive email updates from us, knew it was going to be a busy week for SPD-SmartGlass. Contrary to the popular Las Vegas tagline that “Whatever happens in Vegas stays in Vegas,” we hope that you enjoy this recap of the week’s events at the National Business Aviation Association (NBAA) aircraft show in Las Vegas:

## **SPD-SMARTGLASS: THE WORLD'S BEST-SELLING SMART WINDOW TECHNOLOGY DOMINATES THE NBAA AIRCRAFT SHOW IN LAS VEGAS THIS WEEK**

**Las Vegas, Nevada – October 23, 2013.** The 2013 NBAA exhibition is ending today, and SPD-Smart electronically dimmable windows (EDWs) for aircraft dominated the category both in the exhibit halls and at the airport.

Joseph M. Harary, President and CEO of Research Frontiers noted after a full week of events at the NBAA: “SPD-SmartGlass technology has become the best-selling smart window technology in the world and has reliably proven itself in many thousands of Mercedes-Benz vehicles on the road today with the Magic Sky Control panoramic roofs. This same growing awareness of SPD-Smart technology in the automotive industry is now occurring in the aircraft industry through our efforts and those of our licensees, and their customers and strategic partners. We very much appreciate the hard work and focus by growing teams of people around the world who are involved with making and selling products using our patented SPD-Smart technology.”

There was a strong showing of SPD-Smart electronically dimmable windows, and now an aircraft industry first – skylights – from licensees of Research Frontiers, their strategic partners, and aircraft OEMs. Important announcements were issued from the NBAA that highlight the increased presence and adoption of SPD-Smart windows, and now skylights, in the aircraft industry:

## **Dassault Falcon 5X**

The biggest news at this year's NBAA was the long-awaited unveiling of the Dassault Falcon 5X. It is the largest, most powerful, and most advanced Falcon jet ever built by Dassault. One of the most talked-about features on this aircraft is an industry first: business aviation's first skylight. Dassault describes this feature as follows: "This unique window on the sky transforms your perception of space while providing natural light from above."

This "zenith window," to be standard equipment on the Falcon 5X, is an SPD-Smart skylight supplied by Vision Systems. This same technology can be used for passenger cabin windows when this feature is considered by Dassault later on in the aircraft's design cycle as it gets closer to production.

[Dassault's New Falcon 5X Features an SPD-Smart Skylight](#)



Dassault was faced with a critical need to manage the intense solar light, glare and heat coming into the cabin, particularly when the aircraft is at altitude, where the solar rays, including ultraviolet radiation, are much stronger than when on the ground. Vision Systems' SPD-Smart Nuance Dual provided the complete solution. The SPD-Smart film used in this skylight can block over 99.9975% of all visible light while also controlling heat inside the cabin and blocking UV full time.



### **Honda Aircraft Company**

HondaJet expects to deliver their new HondaJet aircraft to customers towards the end of 2014, and production has already started on these aircraft. They will feature Vision Systems' SPD-Smart Nuance windows as standard equipment and are fully integrated into the aircraft's cabin management system. There was great excitement at the HondaJet press conference as its CEO, Michimasa Fujino, announced the history of the aircraft's development and outlined its production and certification timetable.

SPD-Smart windows were shown at the HondaJet press conference and at HondaJet's large exhibit at the NBAA, along with an SPD-Smart window demonstrator.



Click [here](#) to see a video of the new HondaJet SPD-Smart Window Demonstrator





Please enjoy this [video](#) by HondaJet showing the HondaJet's SPD-Smart Nuance window controlled using an iPad.

### **Aerospace Technologies Group (ATG)**

ATG, the world's leading supplier of dual window shades for commercial and corporate aviation, and Research Frontiers licensee InspecTech joined forces earlier this year to offer the aerospace industry products featuring SPD-Smart technology. This week at the NBAA, ATG featured their product line using InspecTech's SPD-Smart electronically dimmable windows. ATG's adoption of SPD is the result of years of EDW evaluation and development efforts by ATG.

ATG showcased a range of their Tranquility Shade Systems (SPD-only) and Panacea Shade Systems (SPD in combination with a motorized pleated shade) for various specific aircraft models including Airbus, Boeing, Cessna and Gulfstream.

[Video of the Tranquility Shade System](#)

## **GKN Aerospace**

GKN Aerospace (the world leader in aircraft cabin windows, with over 3 million windows in service today, and a licensee of Research Frontiers) is also developing SPD-SmartGlass aircraft windows. As noted in their [press release](#) about their presence at the NBAA:

"In addition to the Global 7000/8000, the aircraft transparencies operation equips the Beechcraft KingAir, the Lear 35/45 and 60 - and the complete Embraer aircraft family. The company's latest passenger windows are the largest and most effective on the market and GKN Aerospace is developing new dimmable cabin management technology that will include full cabin blackout - providing passengers with new levels of comfort and environmental control during their journey."

## **InspecTech Aero Service**

In addition to their involvement with exhibits by their strategic partners ATG, GKN, Lou Martin, and MSA, InspecTech unveiled their iCabin line of cabin management systems at this year's NBAA. The iCabin delivers streaming media content and complete control over various components of the aircraft cabin interior such as lights, information, and of course, SPD-Smart electronically dimmable windows. Their product line ranges from entry-level systems for private aircraft at a small fraction of the cost of most aircraft cabin management systems, to complete and sophisticated systems that can support numerous users. More information is available at: [iCabinApp.com](http://iCabinApp.com).

## **Lou Martin & Associates**

InspecTech's strategic partner Lou Martin & Associates showcased their SPD-Smart E3 Shades, an EDW developed with InspecTech. This shading system integrates Lou Martin's electromechanical pleated shade with InspecTech's SPD-Smart iShade dimmable window.

Lou Martin & Associates describes the E3 Shade as follows: "This window shade system, developed with our strategic partner InspecTech Aero Service, integrates Lou Martin's reliable and aesthetic electromechanical pleated shade with InspecTech's SPD-Smart iShade dimmable window shade. Aircraft owners and operators can keep the soft fabrics and warm colors of our shades and benefit from the extraordinary smart film technologies used by InspecTech. The E3 Shade is comprised of three technologies. The first is our Electromechanical Pleated Shade, known worldwide for high performance, reliability, and elegant design. This is coupled with InspecTech's iShade, which features two electronic switchable films. Its SPD-Smart film is capable of being precisely 'tuned' to allow any level of light to enter the cabin – from optically clear, to very dark, and to any level of tint in between. iShades also offer 100% privacy and control of soft, diffused lighting when desired. The three technologies in the E3 Shade put the power of light and glare control, and interior design beauty, into the hands of individual passengers. E3 Shades are the complete answer."

## **MSA Aircraft Products**

MSA Aircraft Products, a strategic partner of InspecTech, featured several different SPD-Smart windows at its NBAA booth. The products which MSA now offers combine InspecTech's SPD-Smart iShade dimmable window with an elegant pleated shade. MSA's pleated shades have been the dominant choice for window treatments among aircraft operators, with over 40,000 units produced. The integration of InspecTech's SPD-Smart iShade greatly enhances the flexibility and light-control capability now available to MSA Aircraft Products' customers. The partnership with MSA extends the distribution of InspecTech's SPD-Smart iShades, which is already being used on 30 models of aircraft.

MSA's SPD-Smart products offer a combination of performance benefits in a single system – view preservation, variable shading, complete privacy, and a broader set of interior design options with the addition of a pleated shade. This integration highlights the creative potential and adaptability of SPD technology.

## **Vision Systems**

One of the busiest booths at the NBAA was the Vision Systems exhibition of several new products including their Noctis, Nuance and Nuance Dual brands of SPD-Smart aircraft windows. Also on display was Energia, their new solar-powered SPD-Smart aircraft window using technology from SunPartners, as well as SPD-Smart aircraft windows which also incorporate pleated and fabric shades.

A large and expanding team of over 15 people from Vision Systems and their strategic partners attended the show and celebrated the introduction of these new products and the announcement by Dassault of the SPD-Smart Nuance Dual skylight for the new Dassault Falcon 5X jet. At the same time, Vision Systems also presented their retrofit SPD-Smart sun visor product at Busworld in Belgium. More details about these exciting developments are available in the original [news releases](#) about this.

This [video](#) shows the Vision Systems Noctis, Nuance, and Nuance Dual product line of aircraft windows using SPD-Smart technology.