



George Palikaras, Founder and CEO, Metamaterial Technologies Inc. (left) and Bart Reijnen, CEO, Satair, sign agreement at MRO Europe 2018.

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Satair brings innovative laser strike protection technology to aviation and military markets

A ground-breaking deal announced at MRO Europe exhibition last October,

saw Satair sign an exclusive, multi-year global distribution agreement with Metamaterial Technologies Inc. (MTI) and its optical filters division Lamda Guard of Halifax, Nova Scotia, Canada to bring MTI's metaAIR® laser glare protection eyewear and visors to all aviation and military markets.

The products covered are eyewear and visors to provide protection against laser strikes. They are applicable to the full range of pilots – commercial, military, fixed-wing and rotary – operating in commercial, business and general aviation, military, search and rescue, law enforcement and medevac.

Laser strikes on aircraft and helicopters are becoming an increasing safety threat and laser pointers are increasing in power and reducing in price. With aviation safety being paramount it is becoming increasingly urgent to combat this threat of laser strikes in global aviation.

The technology behind

MTI's technology is superior to other products on the market due to a unique and patented holographic optical filter, which has been successfully engineered to ensure that the pilot's vision and interpretation of the surrounding environment is not disturbed during critical phases of flight.

The filter has a very high Visual Light Transmission with high colour fidelity and balance. This ensures that the pilot sees the correct colours when looking at artificial horizons or multi-function displays and the technology does not remove situational awareness from the pilot.

Kasper Tranberg, Customer Solutions Director, Satair, says that it is expected that initial product applications will come on stream in the first quarter of 2019, and he adds:

“The technology is highly scalable so it can be customised for a wide variety of platforms and other applications. In commercial aviation the green laser poses the biggest threat because the human eye is more susceptible to the green wavelength. For military markets the red laser may be the largest threat. The advantage of the MTI product compared to other products in the market is that it can be customised to the wavelengths the customer wants to be protected against.”

“As we have exclusive distribution rights across civil aviation, military and defence, we are open to do business with leading OEMs of products such as night vision goggles, head-up displays, helicopter and fighter pilot helmets and aircraft flight deck visors. Other products in the market do not have the same quality, the same level of protection and colour balance that we have.”

Five-year Airbus collaborative programme

The distribution agreement is the final stage of a collaborative Airbus effort over the past five years that has brought MTI – then a start-up company – to production maturity.

MTI was identified for the Airbus ‘Startup 2 Partner’ programme led by Elsa Keïta from Airbus Corporate Innovation. This programme aims to build mutually beneficial partnerships with disruptive innovators and start-up companies, while setting the ground for future business arrangements. In June 2014, and with the support of the Airbus Aircraft Security team, MTI and Airbus signed an agreement to test and tailor the breakthrough innovation which was designed to deflect unwanted laser sources from impacting jetliner flight paths and causing pilot disorientation or injury.

Less than three years later a further agreement was signed with Airbus to validate, certify and commercialise metaAIR for aviation.

Pascal Andrei, Vice President Chief Product Security Officer at Airbus explained: “We know from facts and conversations with our customers that cockpit illuminations are real, immediate and increasing in frequency and metaAir will benefit our customers.”

He added: “We also see an increasing number of possible applications for metaAIR beyond the commercial aircraft division.”

Which is why Airbus Defence and Space have also come to the party because this technology is also applicable to both military aircraft and helicopters. In June 2017 Satair signed an initial MoU with MTI with the aim of commercialising the technology and bringing it to the market. This has now been cemented into the full-scale distribution agreement.

To underline the quality of the MTI product, MTI was honoured for its metaAIR technology at the prestigious 61st Annual Aviation Week Laureate Awards in Washington D.C. for the best new product in the Commercial category.

George Palikaras, MTI Founder and CEO, heralded the distribution agreement with Satair and further emphasised that this product will be wildly applicable. He added: “We will introduce our products not just to the commercial aviation market originally envisaged, but to service the growing needs of a much wider market to offer a solution to the increasing threats of laser strikes in global fixed-wing and rotary-wing aviation, law enforcement and defence.

How big a problem are laser strikes?

Laser strikes against aviation have become a major global safety issue, though it is true to say that the number of incidents has begun to drop because of public awareness campaigns, enforcement action by the

authorities and steep penalties for the offenders.

- Over 6750 laser incidents were recorded in the USA in 2017 according to the Federal Aviation Administration. The same year in the UK the Civil Aviation Authority recorded 989 laser strikes at 14 airports with a further 243 recorded against UK-registered aircraft operating overseas.
- A British Airline Pilots Association (BALPA) survey in 2015 reported that 55% of its members had experienced a laser attack in the previous 12 months and four percent of pilots have suffered six or more attacks.
- Over 900 such incidents were recorded in Australia and Canada in 2017.
- In Continental Europe, The 2015 survey of Eurocontrol's Voluntary Air Traffic Management Incident Reporting (EVAIR) made the points that from time to time there is a drop in the number of reports of laser strikes not because the problem has disappeared, but because people stop reporting because "there are no adequate measures to stop the problem". The EVAIR report also states that the phase of flight most affected is the approach phase with over 81% of all occurrences. It adds that in the previous five years, on average, laser interference accounted for 14.5% of the total of EVAIR reports – one of the highest percentages compared with other types such as Go-arounds and Traffic Collision and Avoidance.

Experiencing a laser strike as a commercial pilot

Kasper Tranberg who works with MTI on the Satair side is a fully qualified airline pilot. He worked for several years with a leading European carrier and has 10,000 flight hours as a Boeing 737NG captain. Significantly, he has direct experience of a laser strike, which enhances his motivation of getting this product to the customer. As Kasper states: "being exposed to a laser strike does not only pose a threat to the overall safety of flight. It can also have devastating consequences for the pilot – personally and professionally, as it may jeopardise his or her livelihood".

Kasper is keen to hear from OEMs interested in developing a business relationship with Satair and MTI to help bring this innovative laser strike protection technology to wider markets.

Please contact Kasper on:

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About Satair

Satair is a global company and world leader in the commercial aerospace aftermarket. The company supports the complete life cycle of the aircraft with a full and integrated portfolio of flexible, value adding material management products, services and tailored support modules across all platforms. As a key part of Airbus customer services, Satair has exclusive or primary distribution arrangements for aerospace component manufacturers, and supplies parts to multi-fleet customer airlines and MRO companies. It also fulfils the material service support obligation for the in-service fleet of more than 7,000 Airbus aircraft. Visit www.satair.com.

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