



## G. ZIEMELIS: REAL BENEFITS TO AVIATION FROM A VIRTUAL SOURCE

News / Airlines, Personalities



From video games to aviation, and even video games about aviation, virtual reality has a strong foothold in society; and thanks to rapidly developing technologies virtual reality is earning an invaluable place in the very real field of aviation.

### More effective training for pilots and mechanics

In the purest sense, virtual reality is already implemented effectively in flight training through the use of full motion simulators. Usually as the final step in training before a pilot enters the cockpit of a commercial airline they will have spent a number of hours in a fully immersive FFS level D certified simulator – the closest piece of training equipment available outside of an actual aircraft. While level 5 flight training devices are the most common, the FFS level D simulator is by far the most advanced. These simulators offer 6 axes of rotation so in addition to roll, pitch, and yaw they also allow users to experience the effects of turbulence thanks to the use of hydraulics in their operation. Inside the simulator, the pilots see computer screens where they would normally see windows. When the simulator is running the computer screens are on, the sight picture and motions the pilot experiences are identical to the real thing. These systems can cost upwards of 10 million EUR and have high operating costs, but are still a valuable investment when compared to

## **the cost of operating an actual aircraft.**

Pilots are not the only members of flight crews that benefit from training in virtual reality. Engine mechanics for Japan Airlines participated in a proof-of-concept program using augmented reality for supplemental training to eliminate the need for monotonous videos and diagram printouts. Augmented reality is similar to virtual reality in that it immerses the user with computer generated graphics, except with augmented reality it overlays these images with the real world. Aircraft mechanics using an augmented reality headset will be able to look at an engine and be able to see both the physical engine itself and an overlaid virtual heads up display, which could be used to provide additional information about the engine. This benefits the mechanic by still being able to interact with the real world while at the same time experiencing the benefits of virtual reality.

## **Greatest potential for growth**

Augmented reality has the greatest potential for growth in the aviation industry as it has applications for training and in real world use. Multiple companies are capitalizing on this technology and producing hardware to help pilots while they are in cockpit by enhancing the information that is being displayed. The vision for the future of augmented reality is one that even in zero visibility weather a pilot will be able to see a digital creation of his approach and glideslope and will still be able to clearly see the runway. Even in good weather, pilots will gain an advantage. Other air traffic that might be otherwise hard to find can be highlighted for greater visibility. The borders of different types of airspace can be clearly displayed so the pilot does not make a mistake and infringe on airspace that should have otherwise been avoided. Even before the pilot leaves the ground, augmented reality can assist with the pre-flights and checklists necessary for a safe flight. Instead of using a paper checklist before each flight the pilot will be able to use an augmented reality headset that can digitally overlay the checklist over the instrument panels in the aircraft allowing the pilot to keep his focus on the aircraft at all times.

By 2035, there will be an estimated shortage of 617,000 pilots. To prevent this shortage from becoming a reality there will need to be 32,000 new pilots per year from 2016 until 2035. "This new generation who are replacing the retiring pilots will be entering the industry equipped with technology that has previously only been dreamed of," says Chairman of the Board at Avia Solutions Group Gediminas Ziemelis. Any disruption to the piloting workforce causes massive losses to the airlines. The recent pilot rostering error at Ryanair has cost the airline over €35 million in compensation payouts and other costs. The solution to piloting strikes, airline trained and employed substitute pilots will also be part of the solution to prevent the looming piloting shortage. "Cutting edge training technology combined with a smart business strategy is how we will keep our planes flying for our passengers and keep our airlines profitable," says Gediminas Ziemelis.

## **Going forward**

Despite what the name conveys, virtual reality is very real and visceral. What was once just a novelty technology is now making a difference in how the industry thinks about aviation. The viability of virtual reality and augmented reality is at an all-time high. Now that technology has caught up to the visionaries the early investments and proof of concepts are paying off. "There are more than 1800 flight schools in world and all of them are looking for a competitive advantage to attract more students. There is no doubt that in the future as this technology matures and more novel ways of using it in the cockpit and on the ground are developed that more flight schools will be turning to it for an advantage," says Gediminas Ziemelis. "The question that now remains is not if, but instead how much space virtual reality will occupy in the training market cap," he says.

## **About Gediminas Ziemelis**

*Gediminas Ziemelis is an internationally well-known aviation expert, twice awarded as one of the most talented young leaders in the global aerospace industry under age of 40. In 2016, Gediminas Ziemelis was acknowledged for his visionary and business management and development skills by the prestigious European Business Award jury comprised of EU leaders in economics, education, business and politics. Avia Solutions Group, led by Gediminas has become a national public champion in Entrepreneurship category, earning a spot between top 110 European businesses.*

*During his carrier he lead 3 companies to IPO, supported and consulted Chinese Banks: total value of transactions in the CIS region – more than USD 2 billion, led a team of experts in a successful working session of the establishment of a Joint Venture with the Henan Province and China Aviation Agency: deal worth USD 900 million, established more than 10 successful startups like: locatory.com, Laserpas.com, skycop.com, aviationcv.com, etc.*

*Up until today, Gediminas manages private equity fund, which owns assets net worth of 300 million euros in aviation, real estate, IT and pharmacy. He is also a sponsor of various sports, educational, voluntary and charitable organizations projects. Gediminas follows the three simple principles of social responsibility – responsibility towards consumers, employees and society.*

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