

# Robot bird to make its first flight at airports

April 13 2016

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University of Twente's Robird will make its first flights at an airport location in February. Weeze Airport in Germany, just across the Dutch border near Nijmegen, will serve as the test site for this life-like robotic falcon developed by Clear Flight Solutions, a spin-off company of the University of Twente. The Robird is designed to scare away birds at

airports and waste processing plants.

"Finally, this is a historic step for the Robird and our company", says Nico Nijenhuis, Master's student at the University of Twente and the CEO of Clear Flight Solutions. "We already fly our Robirds and drones at many locations, and doing this at an airport for the first time is really significant. Schiphol Airport has been interested for many years now, but Dutch law makes it difficult to test there. The situation is easier in Germany, which is why we are going to Weeze."

## **Training the robot and human operators**

Clear Flight Solutions is benefiting from the more relaxed rules at Weeze, as well as the relatively limited amount of [air traffic](#) there. The airport handles around 2.5 million passengers annually, most of whom come from the Netherlands. Schiphol Airport handles 55 million passengers annually.

In addition to testing the Robird, the company will also train the Robird's 'pilot' and 'observer' (who watches other air traffic). "If you operate at an airport, there are a lot of protocols that you have to follow", says Nijenhuis. "You're working in a high-risk area and there are all kinds of things that you need to check. We use the latest technologies, but the human aspect also remains crucial."

## **No option but to cross the border**

Nijenhuis thinks it is a shame that the situation at Schiphol Airport is so difficult, but he also says that a lot of work is currently being done to accommodate the drone sector in the Netherlands. "Airports are very important to us, however the law in the Netherlands means that this kind of testing is very sensitive. There are major differences with countries

like Germany and France. It is unfortunate to see that so much activity in the drone sector is being drawn away from the Netherlands. Fortunately, our politicians are starting to understand this. Meetings between the Ministry of Infrastructure and Environment and the drone sector are going well, so I'm very happy about that. Finally we are all talking about the rules together. At the moment, it is often the case that professionals are not allowed to do anything, while amateurs are can do whatever they want. Luckily, that situation is changing. The government has also launched an awareness and information campaign. That is another positive development."

## **Strong growth, partly due to students**

The Robird is the flagship product of Clear Flight Solutions - a robotics and drone spin-off company of the University of Twente. The company was recently the beneficiary of an investment of €1.6 million from Cottonwood Euro Technology Fund. This investment has enabled Clear Flight Solutions to become a global leader in the field of bird management. "We have grown tremendously and we now employ 15 people", says Nijenhuis. "We have also become much more multidisciplinary. We even have a retired 747 captain on our team now, especially to help us with the [airport](#) projects. He knows the rules, so his input is very valuable."

The link with research and teaching at the University of Twente is still strong - in February, three new graduates started work at Clear Flight Solutions. The work of an earlier graduate, Berend van der Grinten, meant that an autonomous Robird was very close to being finished as early as last summer. "I recently gave a lunchtime lecture at the University of Twente and there were over a hundred students there. Eighteen of them were very interested in completing a final thesis project. That is wonderful - we need more of that. There has also been a lot of interest from Saxion University of Applied Sciences. Our work

goes further than just electrical engineering and mechanical engineering. We are working on multidisciplinary solutions to social issues - that's what makes this project so cool."

## **The Robird**

The cost of bird control at airports worldwide is estimated in the billions, and does not consist only of material damage, as birds can also be the cause of fatal accidents. Birds worldwide also cause damage running into billions in the agrarian sector, the waste disposal sector, harbours, and the oil and gas industry. A common problem is that since birds are clever they quickly get used to existing bird control solutions, and simply fly around them. The high-tech Robird, however, convincingly mimics the flight of a real peregrine falcon. The flying behaviour of the Robird is so true to life that birds immediately believe that their natural enemy is present in the area. Because this approach exploits the birds' instinctive fear of birds of prey, habituation is not an issue.

Provided by University of Twente

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