

Mosquito-Catching Drones

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Microsoft's new mosquito-catching drones could prevent disease epidemics.



Technology giant Microsoft is working on a new project which combines autonomous drones, cloud computing and genomics in a bid to neutralise disease epidemics at the source. The development, titled Project Premonition, aims to use drone technology to access inhospitable areas and analyse the genetic data of mosquitoes to assess the likelihood of disease outbreaks. Researchers hope to have the project running within five years but face a number of challenges, including ensuring the drones can function autonomously and getting legal permission from aviation authorities to use them.

If successful, the technology could provide a new means of predicting epidemics and create a cloud-based database of emerging diseases such as Ebola and Middle East Respiratory Syndrome (MERS).

More than one million people die each year from mosquito-borne diseases. Malaria, the most widespread disease transmitted by mosquitoes, affects up to 500 million people each year, while up to another 100 million are infected with dengue fever each year. The project could also provide an avenue to track other emerging infectious diseases (EIDs), including Ebola and MERS, which are caused by previously unknown pathogens. Since many of these pathogens are resident in animals from which mosquitoes draw blood, the hope is that new EIDs can be identified and by analysing the mosquito's genes. The project will use new traps which can lure mosquitoes in without collecting other species of insect. Once trapped, semi-autonomous drones would be used to collect the traps and take them back to the laboratory.

The use of drones rather than human collection means the traps can be placed in ever-more remote areas and could mean that new diseases are discovered, as the genetic material of mosquitoes which previously evaded traps is analysed. The data would be stored in a

cloud-based system, with the hope that epidemiologists can use it to predict the likelihood of outbreaks. The development of drone technology has opened up countless possibilities in providing emergency medical assistance and healthcare. Earlier this year, an American Red Cross-backed study found that drones could be used to expedite search and rescue operations, such as for migrants attempting to cross the Mediterranean. Last year, Dutch researchers unveiled a prototype of an ambulance drone which could provide rapid response to heart attack victims, increasing survival chances by 10 times. However, the technology is still beset by regulatory and security challenges. In the UK, unmanned aerial vehicles (UAVs) must be flown within the operator's line of sight and at least 50 metres away from a person, vehicle or building. In March, the European Aviation Safety Agency proposed new rules which would make it simpler for licensed drone operators to use their vehicles. There are almost 2,500 licensed drone operators in the EU, compared to 2,342 in the rest of the world.

N.B. This article comes from Newsweek magazine

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