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Cutting-edge drones put to the temperature test

Northumbria University's state-of-the-art environmental chamber has been used to test how drones respond under extreme temperature conditions for a leading UK drone supplier.

Drones are one of the most advanced pieces of equipment in the field of robotics. They are unmanned aircraft which can be remotely controlled by pilots and use cutting-edge technology to gain access to places where humans can't. This often means operating in extreme temperatures – conditions which can be easily recreated in Northumbria's environmental

chamber.

The number of drones in the sky has soared in recent years because of their ability to stay in flight for many hours. They are used in a wide range of industries, including crime scene mapping, wind farm maintenance, wildlife photography and arctic exploration. Drones carrying cameras have even become the latest tool for emergency responders – most recently used to help aid relief operations in Nepal by photographing and mapping areas affected by the earthquake.

Colena Ltd provides drones for a number of clients across the world in locations as diverse as the Arctic to the United Arab Emirates. They received ERDF-funded support to undertake testing of their drone equipment under extreme temperatures.

Under the supervision of Dr Martin Barwood, Research Fellow and Environmental Physiologist at Northumbria, tests were carried out on the drones in three key areas – battery performance, drone performance and pilot performance.

Dr Barwood explained: “We found that the drones and their components stand up to the extremes of temperature in which they are being used, which is excellent news.

“However, they are still affected when the temperature changes – particularly when it gets very cold - so we are recommending a reduced flying time in extreme cold conditions. This new information will help safeguard the drone and could help reduce pilot error when the pilot is faced with bitterly cold conditions.

“These initial tests have provided both Colena and ourselves with a platform to progress in this vibrant area of business and research.”

Justin Pringle, Drone Development Manager at Colena Ltd, said: “Colena has been really impressed with the dynamic approach Northumbria University have taken to working with us and helping us develop our own understanding of drones.

“We work in an exciting and constantly changing business. This project

should really allow Colena to open new markets and work with enterprise clients.”

Northumbria University academics actively work to support businesses to test or develop their products. For more information on how to access the University’s expertise and facilities visit www.northumbria.ac.uk/business.

This project was funded through the Business & IP Centre Newcastle, a partnership comprising Newcastle City Council, Northumbria University and the British Library, with support from the European Regional Development Fund.

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