

OTHER EVENTS AND PROJECTS

AUTOMATION IN UAV REMOTE DELIVERIES

Deliveries of post and medical supplies using Uncrewed Aerial Vehicles (UAVs) have seen a notable increase in development over the last few years. This development has, in part, been boosted by the COVID-19 crisis, but also by easy access to low-cost electronics equipment that would normally only be accessible to defense industry (e.g., accurate Global Navigation Satellite System and SATCOM solutions).



Windracers' ULTRA's first flight at Llanbedr Airfield.

While most competing organisations have focused on the last mile of small package deliveries, researchers at the University of Southampton, in partnership with Windracers Ltd., have developed an aircraft that can carry food and medical supplies for a country the size of South Sudan. Even though the range and payload capability are unique (100 kg over 1,000 km), the main benefit over smaller platforms is the aircraft's ability to continue operations even in adverse weather conditions—something that has hindered the widespread use of smaller platforms.



Mail delivery by UAV for the Isles of Scilly.

Throughout 2020 and 2021, development team members were involved in several firsts for UK uncrewed aviation. Suc-

cessful beyond visual line of sight flights were conducted from the mainland UK to several smaller islands, including Isle of Wight, Isles of Scilly, Orkney Island, Fair Isle, and North Ronaldsay (projects that were in part supported by Royal Mail). Most of these projects were sponsored by Innovate UK's Future Flight Challenge program.

With demonstration flights planned in 2022, the team is aiming to demonstrate how UAVs can become a normal part of the supply chain, particularly for the UK's island communities whose logistics are often expensive and at the mercy of the weather.



Windracers' ULTRA beyond visual line of sight flight to the Scottish island Eday.



Windracers' ULTRA waiting to be loaded with cargo at Isles of Scilly Airport.

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