Case study 1

Project ULTRA

Unmanned Low-cost TRansport for Africa/Antartica

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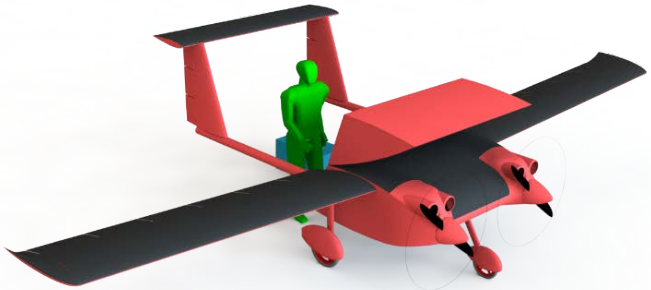
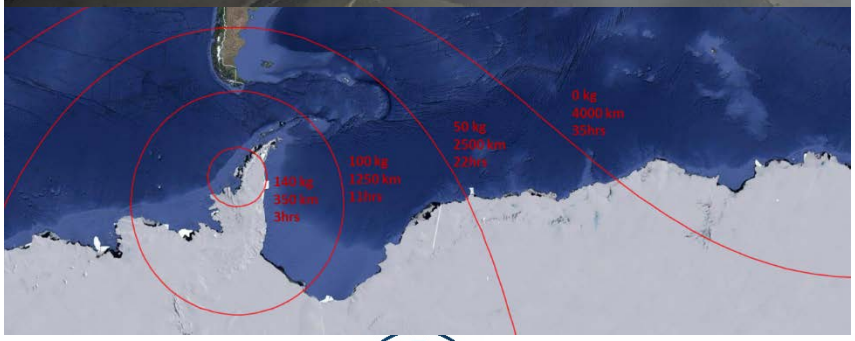
Long-range low-cost cargo UAV





- Delivery of food aid and other goods in extreme environments
- 100 kg payload and 1000 km range
- Simple modular construction
- Redundant systems for increased safety
- Minimal user interaction required
- First prototype to be flown early next year in the UK
- Sponsors: Windracers and British Antarctic Survey

Research Challenges

Future/ Research	Safety	Autonomy	Scalability	Agility	Capability
Adaptive design				■	
Structronics				■	
De-centralised control architecture	■	■		■	
Additive manufacturing				■	
Automatic fleet management		■	■		
BVLOS in non-segregated UK airspace	■				■
Secure long-range communication	■				
BVLOS tests using chase plane	■				
High-integrity/redundant avionics and electrical systems	■				
Fail-safe adaptive mission and control logic	■	■	■		■
ADS-B transponder integration	■				
Modular design				■	
Now/ Case study