

# WINDRACERS

Temporary Airspace Change ACP-2022-049  
Initial Assessment Meeting

23<sup>rd</sup> November 2022



# Agenda

- Windracers
- ULTRA UAS
- Prior BVLOS Operations
- The Project
- Statement of Need
- ACP-2022-049
- Stakeholders
- Timeline



# Who are Windracers

Windracers is a UAV technology company leading the effort for the use of uncrewed aircraft systems (UAS) to deliver critical cargo to remote areas of the UK.



# ULTRA UAS Overview

Proven highly-automated platform with minimal operating costs



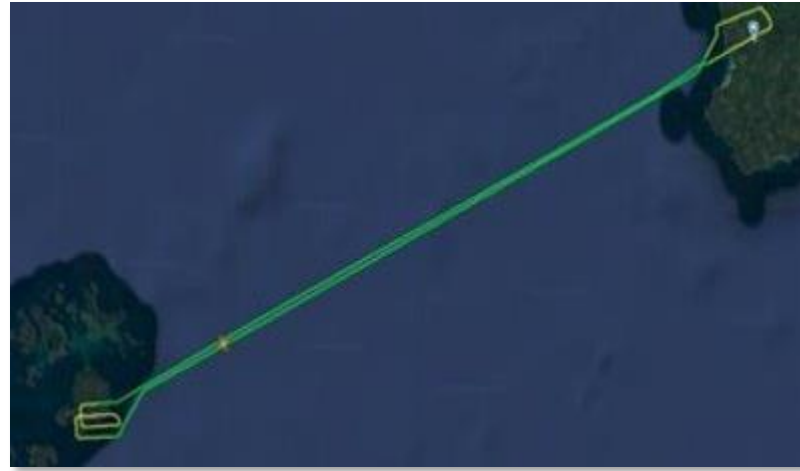
- Designed for robustness with broad wind & weather limits
- First flight in May 2019
- Extensive flight testing - hundreds of operating hours
- Highly reliable autopilot/avionics system
- Multiple BVLOS operations in the UK
- EC - Mode S + ADSB IN/OUT

Parameter	Design Goals
Range	550 Nm (+45min reserve)
Payload	100 - 150 kg
Empty weight	270 kg
Maximum take off weight	450 kg
Payload volume	700 L
Cruise speed	75 Kts
Take off and landing	150 m (Nil wind)
Maximum endurance	12+ hours
Electrical power	350W or 2kW
Runway	Dirt, grass and tarmac

# Windracers BVLOS Operational Highlights



The Solent - 8 Nm Route

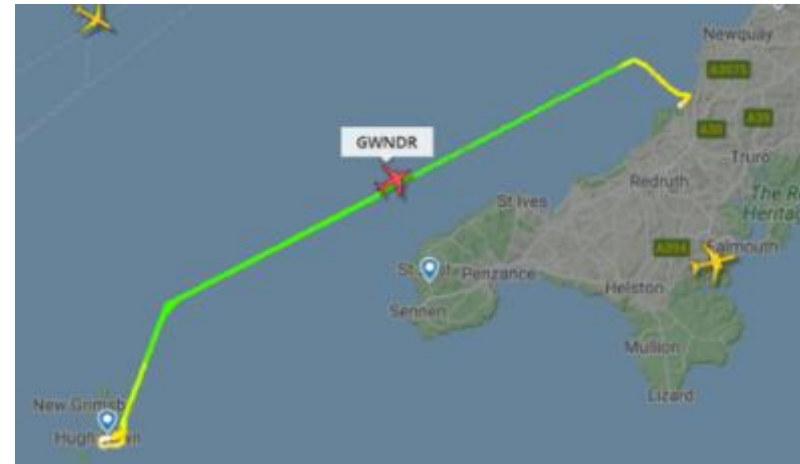


Land's End to St Mary's - 30 Nm Route



Predannack BVLOS Routes up to 120 Nm  
Flight at 7000 ft AMSL

Strictly Private and Confidential



The Scilly Airbridge - 60 Nm Route  
4 weeks scheduled flights

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Scottish Network - Routes up to 100 Nm  
Reduced crew - Relayed BRLOS



# The Project: SATE 2



- Sustainable Aviation Test Environment
- Project within the Innovate UK Future Flight Competitions
- SATE 1 started in 2020 and finished this summer
- SATE 2 is the continuation with a larger consortium
- Running until 2024

**UKRI-Funded Partners**

**Self-Funded Partners**

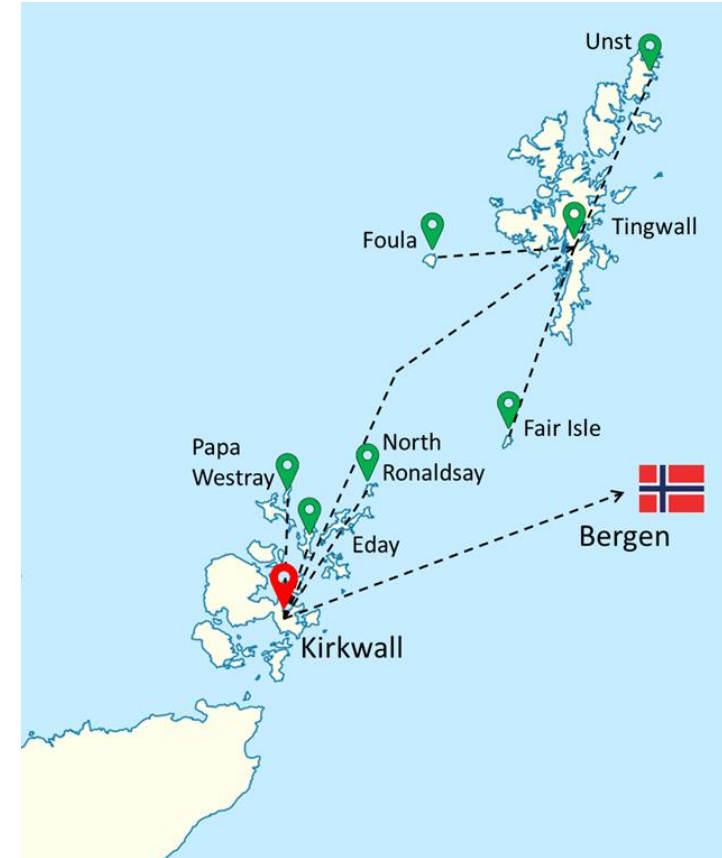
**Project Supporters**

# Statement of Need

- SATE and UKRI
  - Test and showcase new technology for island and wider use
  - Create social benefit and economic prosperity
- Demonstrate the use of ULTRA Unmanned Aircraft System (UAS)
  - Deliver on demand supplies to remote communities
  - Reduce struggle from mistimed or limited logistics.
- Preliminary trials and engagement with key local stakeholders
  - Priority for medical supplies to remote health care service providers
  - Transport of mail to island communities
  - Logistic support to the supply chain of island industries
- Beyond Visual Line-of-Sight (BVLOS)
  - Establish segregated airspace
- Temporary Danger Areas to enable these operations in the Orkney Islands.
- TDA to be activated during short periods of time
  - Separately or in combination
  - Minimising the impact over other aviation activities
  - Anticipated that this ACP will last no longer than 8 weeks
- Participation of ATS for TDAs
  - Information or crossing services during operation

# ACP-2022-049

- Planned Airfields:
  - Papa Westray, North Ronaldsay, Eday, and Kirkwall
- Current commercial interest involves:
  - Local councils
  - NHS
  - Scottish Water
  - Royal Mail Group
- What can we provide?
  - Middle mile logistics
- Plan after TDA
  - HIAL sponsored TMZ
  - Unsegregated airspace
- Data we can collect
  - Electric conspicuity data
  - Non-Cooperative data





# List of Stakeholders

## Key Stakeholders

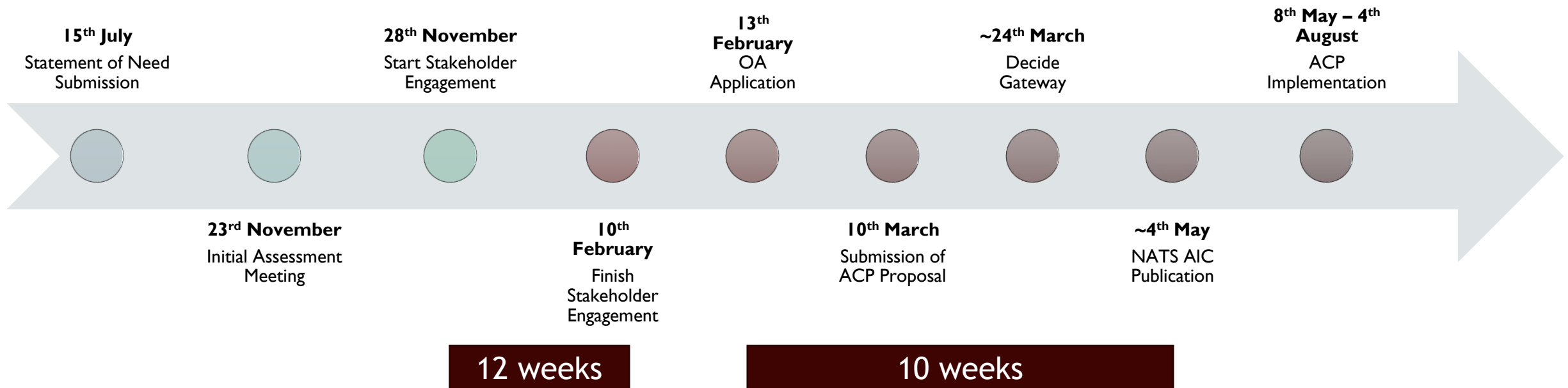
- Highlands and Islands Airports Limited (HIAL)
- Orkney Islands Council
- Shetland Islands Council
- National Trust for Scotland
- Airtask
- LoganAir
- Gama Aviation
- Wiking Helicopter
- Babcock
- Shetland Space Centre
- Northern Lighthouse Board
- Scottish Natural Heritage
- Local GA
  - Lamb Holm Airfield Orkney
  - GA Orkney
  - GA Tingwall
  - Shetland UAV Operators
  - Moray Flying Club

## Wider Stakeholders

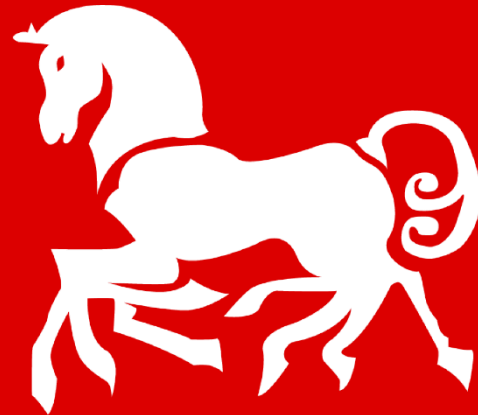
- General Aviation Alliance (GAA)
- MoD DAATM
- Navy HQ
- United States Air Force Europe (3rd Air Force-Directorate of Flying (USAFE (3rd AF-DOF))
- Airspace 4 all
- NATS
- Aircraft Owners and Pilots Association (AOPA)
- British Business and General Aviation Association (BBGA)
- Local police
- British Helicopter Association (BHA)
- British Skydiving
- Specialist Aviation
- National Police Air Service
- British International Helicopters
- Bristow SAR
- ARPAS UK

**To be updated against NATMAC list**

# Proposed timeline



Thank you for listening  
Any questions?



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[www.windracers.org](http://www.windracers.org)