

# ACP-2021-089 Design Principles Engagement

ORE Catapult BVLOS Danger Area



## GENERIC REPORT

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## INTRODUCTION

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### Statement of Need

The Offshore Renewable Energy Catapult (ORE Catapult) is a technology innovation and research centre providing world leading testing and innovation support to the UK offshore renewable energy industry. We are currently expanding our testing capabilities by building a dedicated Robotics and Autonomous Systems Testing Centre at our site in Blyth. This will offer facilities for a wide range of robotics solutions including subsea, surface, crawling, and flying vehicles. As well as dry docks and indoor testing facilities at our Blyth site, we also own and operate an offshore met mast (National Offshore Anemometry Hub – NOAH) located about 5km off the coast of Blyth (55° 8' 45.5"N 1° 25' 13.5"W).

As wind farms move further offshore and are of ever greater size, access by technicians becomes increasingly expensive, time consuming, and dangerous. As such, offshore wind presents a substantial opportunity for autonomous and remotely operated IMR (inspection, maintenance, and repair) operations. Additional applications also exist throughout the life cycle of a wind farm (such as environmental impact surveys pre installation and decommissioning support).

To unlock the maximum commercial benefit to the industry, and utilise the growing capability of robotic and communication technology, it is important to maximise the autonomy of technology and minimise the need for human intervention. This will drive more robotic technologies to be used in Beyond Visual Line of Sight (BVLOS) applications. If this technology is going to develop and be implemented successfully, test and demonstration zones will be critical to evaluating safety, validating performance and certifying approvals.

Outside of the wind sector, there is also a wider desire within the drone industry to test and demonstrate BVLOS operations in other sectors such as Oil and Gas, transport and logistics, and farming. Such demonstrations so far have been primarily within Temporary Danger Areas which provide only a limited timeframe for one individual company.

ORE Catapult aim to offer independent test and validation services to provide the industry with the facility to evaluate the readiness of new technology in a safe and controlled environment. To support and accelerate the development and validation of such systems we are proposing a new Danger Area which can act as a 'sandbox' for drone operators to test and prove their systems.

Due to neighbouring demands on space (Blyth Offshore Demonstrator Windfarm and Newcastle CTA) the precise extent of this area will be left open to discussion with the relevant parties. Our initial intention, however, is for an area of approximately 1 km<sup>2</sup> extending north from NOAH combined with a thinner corridor to the shore. Operations within the 1 km<sup>2</sup> area will be limited to below 1000 ft in order to leave a sufficient vertical safety buffer to Newcastle CTA-3 (which begins at 3000 ft). Operations within the corridor to shore will be limited to below 400 ft. While this does not leave the

typical 2000 ft vertical safety buffer beneath Newcastle CTA-2 (which begins at 1500 ft), it should be noted that a wind turbine of tip height 428 ft also sits underneath this airspace and should therefore eliminate any possibility of encountering aircraft at these altitudes.

## The Airspace Change Process

ORE Catapult have initiated an Airspace Change Proposal (ACP-2021-089) by submitting the above Statement of Need to the Civil Aviation Authority (CAA) and must now complete the Airspace Change Request process as outlined in CAP 1616 – Airspace Change. This process is intended to ensure that any stakeholders who may be impacted by the airspace change have the opportunity to input to the development of options for the change. The process is also intended to ensure fairness and transparency at all stages. As such all details and documentation regarding this proposal can be found on the CAA's [Airspace change portal \(caa.co.uk\)](https://www.caa.co.uk/airspace-change).

Stage 1B of this process (the current stage of this proposal) is the identification and communication of design principles to be applied to the airspace design. This is to be done by the airspace change sponsor (ORE Catapult) alongside engagement with local stakeholders. These design principles will then be taken forward to the following stages of the process to form the basis of the development and assessment of airspace change options. ORE Catapult have put together a set of initial design principles that we would like your feedback on.

Note that at this stage we are not seeking feedback on the wider proposal since this will form part of the later stages. Instead, we are interested in understanding which elements of the airspace design principles you consider important. While not exhaustive, you may wish to answer the following prompts:

- Are there any other design principles you would like ORE Catapult to consider?
- Are there any design principles you would like ORE Catapult to consider disregarding?
- Are there any design principles you would like ORE Catapult to prioritise over the others?
- Are there any design principles you would like ORE Catapult to amend/add greater detail to?

In order to ensure your viewpoint is fully captured, any reasoning or other detail would be appreciated in your response.

## DRAFT DESIGN PRINCIPLES

Draft Design Principle	
1	Maintain a high level of safety for all airspace users.
2	Minimise the impact on other airspace users.
3	Minimise the impact of noise and avoid the overflight of densely populated urban areas.
4	Maximise the suitability of the airspace for the widest breadth of drone applications and technologies.

## Feedback

The deadline for providing feedback on this stage of the process is **Friday 29<sup>th</sup> April**.

Feedback and questions regarding the proposal can be provided in the following ways:

Email:	acp@ore.catapult.org.uk
Letter:	FAO Validation Team Offshore House Albert Street Blyth Northumberland NE24 1LZ

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