

CASE STUDY

WHO WE ARE

The Connected Places Catapult (CPC) is an independent, trusted, expert broker operating at the intersection between the public and private sectors and between local, regional and national decision making. We promote UK innovation and broker relationships between government, academia and industry providing support and solutions for innovators to commercialise their projects and research. With our deep expertise in technology, we bridge the gap between buyers, suppliers, innovators and industry. Our agile approach enables us to convene our partners to act rapidly to create new market collaborations responding to public funders and industry needs. We boost demand for innovation to unlock wider economic and environmental benefits.



Government Pathfinder Programme

Lowering the barriers for commercial drone operations

Challenge

There is a significant market opportunity within the UK and globally for Unmanned Aircraft, particularly at low altitudes, in industrial sectors such as transport, infrastructure, construction as well as emergency response. The case for drones continues to grow as new technologies, applications and sensors are developed to deliver tailored solutions. However, much is unknown or untested about these systems since for safety reasons, drone operations are limited in their access (line of sight flight) or confined to specific airspace by a restrictive authorisation process.

For safety reasons, drone operations in the UK have limited access to airspace or have to be confined to specific airspace by a restrictive authorisation process. In order to overcome the challenges of operating drones Beyond Visual Line of Sight (BVLOS), the industry is developing new technologies, systems and operational concepts however much is untested or unknown about these systems and potential limitations of their use.

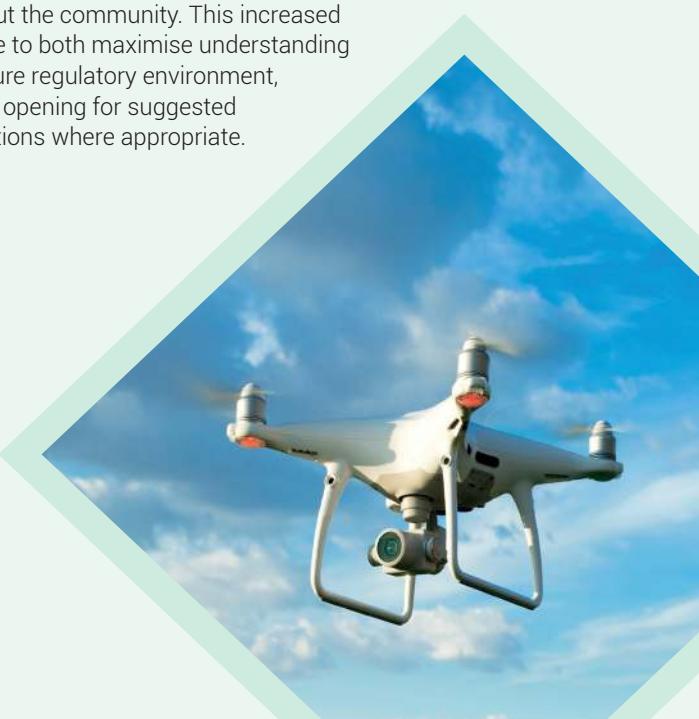
To achieve safe and routine drone operations will require overcoming a range of safety challenges associated with operating drones in the different sectors and airspaces in the UK. The industry is already invested in R&D initiatives to generate solutions and evidence to overcome the safety challenges. This knowledge is critical when building a regulatory framework which underpins the integration of drones into the airspace. This framework will help the CAA to ensure that the aviation industry meets the highest technical and safety standards.

Solution

The Pathfinder Programme is a cross-government programme, led by CPC, focussing on identifying and articulating the safety challenges faced in bringing a new BVLOS drone-based service to market in the UK. These challenges are to be tackled through real-world trials in which operators' partner with industry customers to demonstrate the business value while addressing the challenges and approach to safety. It is envisaged that by tackling the identified challenges collaboratively as a community we will start to build a catalogue of standard scenarios which will support future business models, objectives regulatory frameworks, and Government policies.

Key benefits to the industry and market sectors participating in the Programme include Technical expertise, Funding advice and assistance, test support and networking opportunities.

The Programme also provides a platform for innovators to engage with government and the regulator at early stages, to jointly explore solutions and share information throughout the community. This increased engagement will serve to both maximise understanding of the current and future regulatory environment, as well as creating an opening for suggested adaptations to regulations where appropriate.



Stakeholder engagement

The key element of increased engagement with the market, drone industry and government aims to generate market intelligence, level-up through knowledge sharing, and to define new opportunities and partnerships. A quarterly community event is designed to include a broad range of interested stakeholders and provides the community with the ability to network, socialise potential projects and opportunities, communicate Project updates and share lessons learned. The programme also ensures coordination between itself and other national and industry initiatives such as the Future Flight Challenge and the CAA's Innovation Sandbox.

Outcomes

CPC is at the heart of the 100-strong Pathfinder Community and convened quarterly Community Days open to everyone across industry. Five stakeholder workshops reached different audiences: Environment and Agriculture Workshop, Regulations Workshop (Host CAA), Data and Drones Workshop (Host CPC), Energy Pathfinder – Linear Asset Operations Workshop (Host CPC). There were some 50 cross-sector participants. All the Programme's stakeholder engagement feeds into the development of policy and investment cases across the drone ecosystem in UAS Traffic Management and R&D.

PATHFINDER PROJECTS

Project	Industry Sector	Technology Provider	Sponsor	Partners
Above & Beyond	Energy Infrastructure	Callen-Lenz	UK Energy Networks	Wales & West Utilities Energy Innovation Centre
Infrastructure	Road Construction	Sensat	Innovate UK	Costain
Early detection of Biohazards	Marine	Cranfield University	EPSRC	EDF
Future Maritime Operations	Emergency Services	Elbit Systems	Maritime & Coastguard Agency	Maritime & Coastguard Agency
Local BVLOS	Construction	Sees.ai	Innovate UK	Skanska, Foster & Partners, NATS

CPC creates value

- ◆ CPC is able to leverage its expertise and industrial knowledge to convene projects, to build consensus, get more out of partnerships and provide a voice for SME's in the unmanned aviation ecosystem.
- ◆ The Pathfinder Framework has provided clarity about BVLOS operations and enabled the industry to work on new BVLOS projects.
- ◆ CPC will facilitate engagement between the UAS community, regulators and industry customers through the Pathfinder Community days which will direct suppliers towards new commercial opportunities.

Benefits

- ◆ Trials under the programme will reach across to a wide range of sectors who may wish to use drones now and in the future.
- ◆ Development of world-leading specialisms, thought leadership and other early adopter or trusted-partner benefits in BVLOS operations.
- ◆ Provides a forum for industry to engage with government, the CAA, catapults and wider industry.
- ◆ Help build knowledge and learnings to inform on policy, future R&D funding and regulations for drones.
- ◆ Dissemination of new information to stakeholders, the community and wider initiatives such as the Drones Industry Action Group.

Next steps

The governance members will work with the wider stakeholders to coordinate research efforts and provide appropriate steering to parallel initiative beyond the Pathfinder Programme including the Future Flight Challenge and the CAA's Innovation Sandbox, provide support to industry initiatives including the development of national and international standards and broader electrification and digitisation initiatives within the aviation sector.

CPC will work with the governance members and industry to promote the use of drones and will continue to disseminate learnings from the Pathfinder Projects through the Government Drone Pathfinder website <https://cp.catapult.org.uk/case-studies/pathfinder/>

To become a nominated Pathfinder Project organisations can request an application form by emailing drones@cp.catapult.org.uk

To find out more about the Connected Places Catapult and how we can help you develop the future skills that address the needs of your organisation please contact info@cp.catapult.org.uk

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