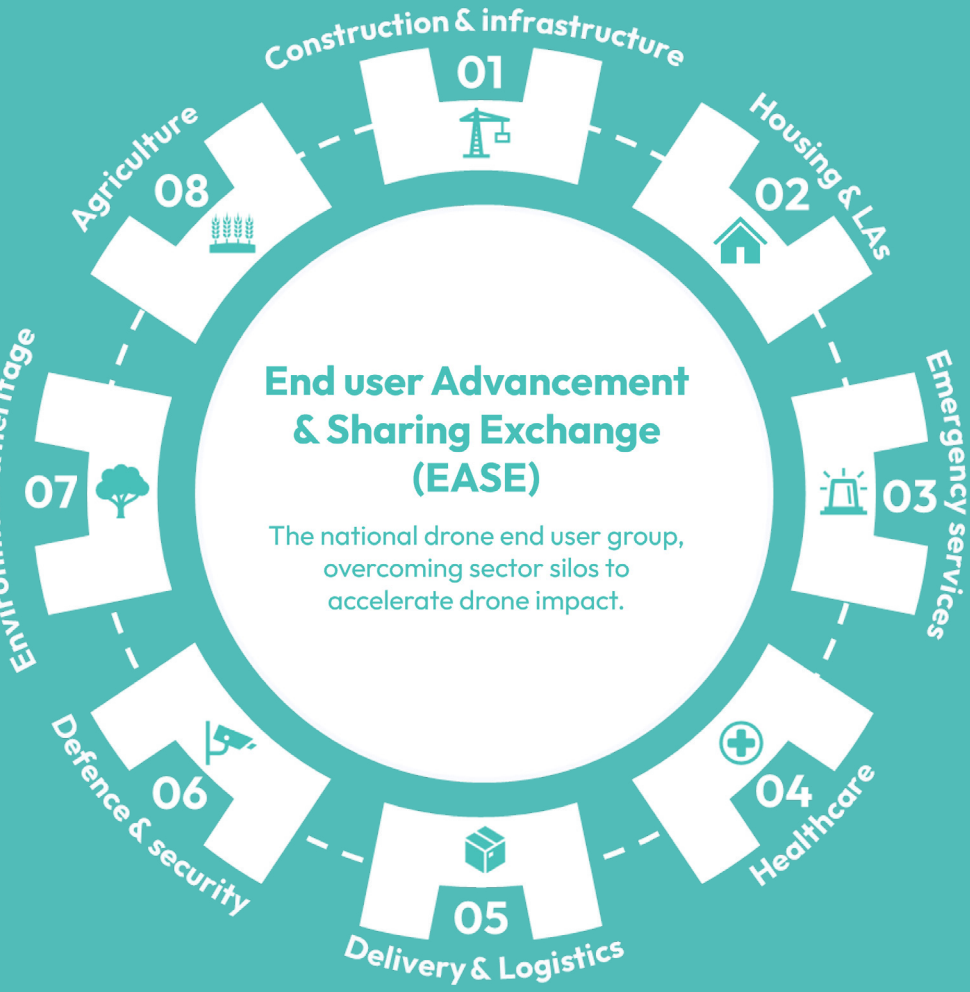
End user Advancement and Sharing Exchange (EASE)

Spring 2025 paper // Part 1 – End user appraisal



Ajuno AirWards ARPAS-UK Association of Remotely Piloted Aircraft Systems

Contents

Executive Summary

Global dynamics have pushed drones to a transformative point in warfare and the Chancellor's Spring mini-budget sees increased Defence spending, with 10% of MOD equipment budgets for novel technology like drones and AI. Meanwhile, investment in electrification, renewables, and transport, driven by energy resilience and net zero goals, creates a promising economic landscape for the UK drone industry. However, the end of Future Flight Challenge Phase 3 leaves many projects without sustainable funding, while UK SORA offers a streamlined regulatory process but faces challenges in understanding and costs.

This paper draws on recent activity and key insights from leading drone end users within EASE, a national drone end user group. It's the first of two parts that assess end user perspectives and will drive action to accelerate drone impact.

Critical challenges

Regulations and funding gaps were highlighted as most critical end user challenges, with senior stakeholder buy-in tied closely to both.

Key cross sector opportunities

They were highlighted from leading end users on themes of inspection, emergency response and delivery.

Maturity benchmarking

Leading end users shared insights and revealed that most feel they are at the beginning of their journey with much to develop (see figure).

Now is a critical point to enable scalable, sustaining models for the UK drone ecosystem.

Introduction

This paper

This paper draws on recent activity and key insights from leading drone end users within EASE, a national drone end user group enabled by DSIT. End users are the consumers of drone services and as the gateway for industry value to society are arguably the most critical drone ecosystem stakeholder.

This paper is the first of two parts that assess end user perspectives and will drive action to accelerate drone impact.

Changing global landscape

Changing global dynamics have seen drones pass a tipping point in transforming warfare. The Chancellor's Spring mini-budget has responded with increased Defence spending, allocating at least 10% of MOD equipment budgets to novel technologies like drones and AI. Meanwhile, global pressure for resilient energy supplies and net zero goals drive investment in electrification and renewables, alongside the budget's wider investment in transport. Collectively this presents an exciting economic landscape for the UK drone industry.

Two programmes shaping a critical point for the UK drone ecosystem

The end of Future Flight Challenge Phase 3 has left many projects short of commercialisation and sustainable funding. There is potential for some further funding following Mike Kane MP's recent announcement but even with this, the future for many is uncertain.

The introduction of UK SORA offers a streamlined regulatory process and potential to scale operations, though many don't yet understand it or find the associated charges for complex operations prohibitive.

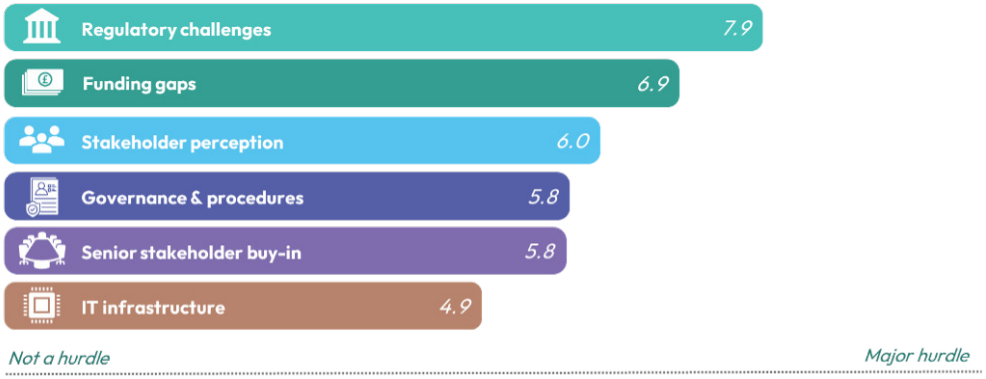
Now is a critical point to enable scalable, sustaining models for the UK drone ecosystem, enabling end users as the critical gateway for drone industry value to society.

Critical challenges

What's limiting drone impact?

Building from the challenges captured by the group in April 2024, the October 2024 EASE meeting and November 2024 COMIT2drones event, we identified the below six most critical challenges for end users.

A survey within the February 2025 workshop reinforced that end users across all sectors continue to face most, if not all. Though most notable are regulatory challenges and funding gaps.



Source // UKRI

Regulatory challenges

Clearer route to BVLOS	There continues to be a need for clearer and more supportive regulations for BVLOS, crucial for more advanced drone capabilities.
Complex regulatory landscape	Many end users highlighted the challenges of understanding UK CAA regulations. UK SORA is currently seen to exacerbate this, though is likely to provide a clearer route in time.
Limiting investment commitment	The uncertainty associated with the regulatory landscape and what drone service providers can commit to is limiting buying decisions within larger organisations.

Funding gaps & stakeholder buy-in

End of Future Flight	The end of phase three, and uncertainty over a phase four that would still see a gap, poses significant challenges for not yet sustaining cases.
Budgetary pressure	Felt by many across public or pseudo public companies and local government, albeit the Spring Budget may support increased investment.
Past the hype	It was shared that we are beyond 'the hype' but unclear how far 'out of the trough' (of disillusionment) we are.

N.B It was recognised that whilst pain was felt with funding, this is typically coupled with senior buy-in.

Initiatives review

What actions are being taken?

EASE initiatives are a focused set of activities taken by the community to address specific critical challenges. This section provides a brief overview of key EASE initiatives discussed.

Drones in action

To address challenges with demonstrating drone value to senior stakeholders, ARPAS-UK recently published its first Drones in Action Report. The purpose of this guide is to provide examples which demonstrate the range of benefits and financial savings that can be achieved by the safe adoption of drones. This will be updated every six months.

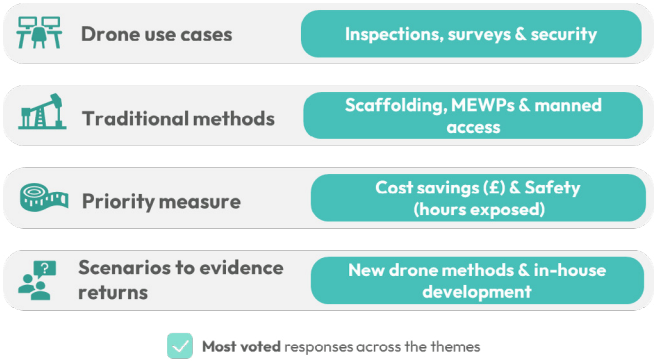
Local authority alignment

Though EASE and other communities, it is recognised that local authority adoption and regulation of drones (e.g. through local bylaws) would benefit from a more aligned approach. ARPAS, engaged with government, has been leading an EASE initiative bringing together a community of leading local authority drone champions, and establishing a route forward with more alignment.

Return on Investment

Ajuno are leading development of a drone ROI system, voted by EASE members last year as a top initiative to address senior stakeholder buy-in.

We held a user engagement workshop 30 January 2025 with infrastructure organisations, the agreed initial adopters of this tool and identified key requirements from the four themes.



Application opportunities

How can we have more impact?

With so many exciting and potentially impactful capabilities being developed across the drone industry, it's easy to focus on what's coming 'over the horizon' e.g. BVLOS, rather than what can have most impact now. This section focused on sharing learning from some of the most impactful drone applications currently being delivered.

The 'Big 8'

Supporting a multitude of end users across different sectors Ajuno have found all drone uses can be categorised within the following eight applications, utilised across sectors.

Visual Inspection
eg. Assess the condition and integrity of assets

Site mapping
eg. Survey terrain and create digital models

Emergency response
eg. Search & rescue or incident response

Environmental monitoring
eg. Ecological or pollution assessment

Promotional & marketing
eg. Imagery to showcase real estate and events

Tactile
eg. Ultra sonic sensing or water sampling

Security
eg. Surveillance or perimeter monitoring

Delivery
eg. Transport goods or medical supplies

Greatest opportunities for cross sector sharing?

Ahead of the workshop we reflected on the relevance of specific applications across sectors, enabling us to highlight the three applications with the greatest potential for shared learning across sectors.

Use cases / Sector	Visual Inspection	Site Mapping	Tactile work	Security	Emergency Response	Delivery	Environmental monitoring	Promotional & marketing
Construction & Infrastructure	■	■	■	■	■			
Housing & Local Authorities				■			■	■
Emergency Services					■	■		
Healthcare					■	■		
Delivery & Logistics						■		
Defence & Security	■		■	■	■	■		
Environment & Heritage	■	■			■		■	
Agriculture	■					■	■	
Score	15	10	6	10	16	16	10	5

Success Stories

Emergency flood response

Environment Agency

Achievements

- Rapid drone deployment within 6 hours, operating 3 teams in different locations.
- Provides still imagery, video, and live-streaming to multiple incident rooms, with over 85 call-outs.

Challenges & learning

- Uncertainty about the future contract requirements after 8 years.
- Integration of external contracts with in-house drone operators and wider DEFRA communications,

Plans forward

- Continue the contract as part of incident management resources.
- Explore in-house pilots for asset inspections and expand drone use beyond flooding, eg. water sampling.

Success Stories

Medical product delivery

Achievements

- First Public business case for Medical Drone service £16 million GVA & 700 jobs
- First movement of items between mainland health boards by drone

Challenges & learning

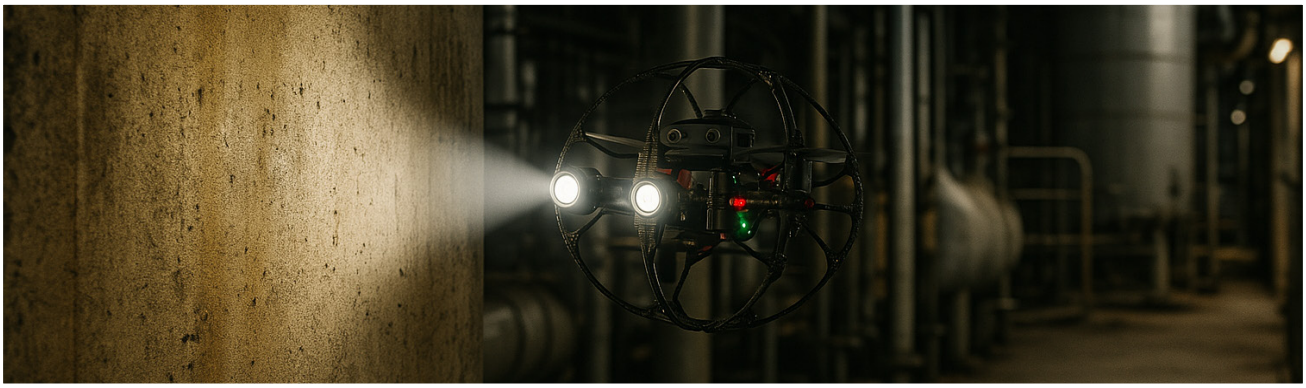
- Regulations – airspace and carriage of goods
- Need to scale – time network and funding

Plans forward

- Pre commercialisation phase continuation (subject to funding).
- Procurable service to embed in NHS healthcare service delivery.

Success Stories

Confined space inspection



Achievements

- Demonstrated proof of concept drone inspection via 150mm port – leading to innovation project.
- Widely utilised latest internal inspection drones to remove people from harm and save time and cost.

Challenges & learning

- No off the shelf platform yet performs the more complex inspection tasks.
- Complexity integrating new systems onto nuclear site.

Plans forward

- Continue working with Suppliers through Innovation project for the 150mm port access challenge.
- Continue to scale wider internal inspection and non-destructive testing cases.

User maturity

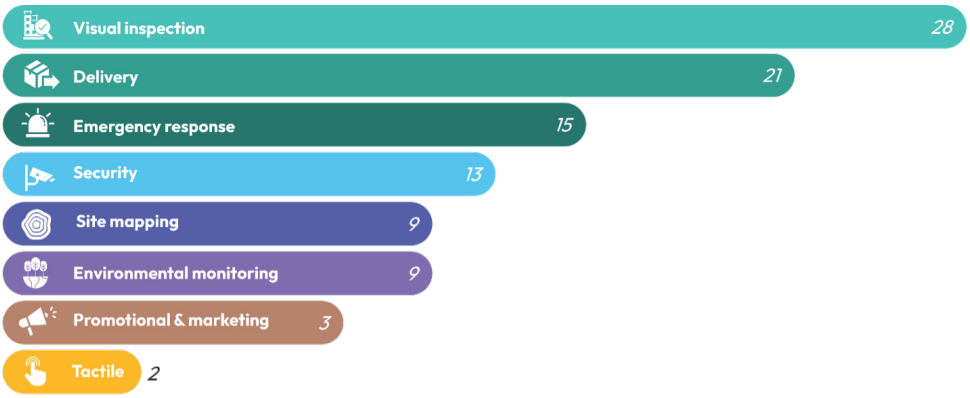
Where are we?

This section summarises the results of our end user maturity benchmarking activity, aiming to capture a perspective of how drones are being used, and with what impact.

Within the group we had a good balance across sectors with most from very large organisations (>2,000 employees). It's recognised that whilst these provide a good sample of the industry, they are a comparatively small sample size.

Drone applications

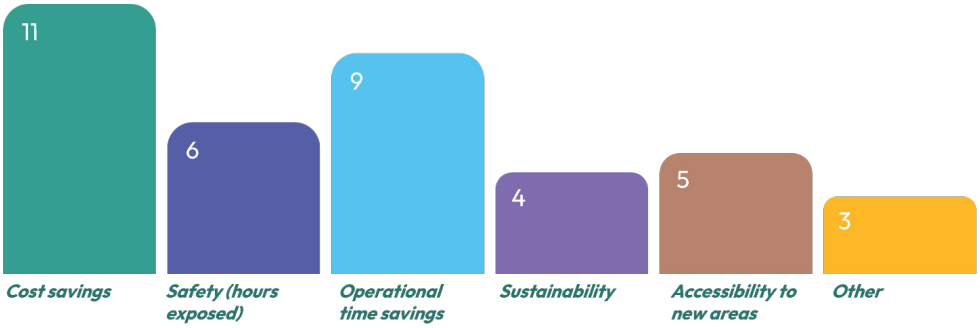
Visual Inspection and delivery, followed by emergency response and security are the most common drone applications across the sectors. Tactile Work is currently the least common, albeit have demonstrated very strong returns where implemented.



Most common drone use cases

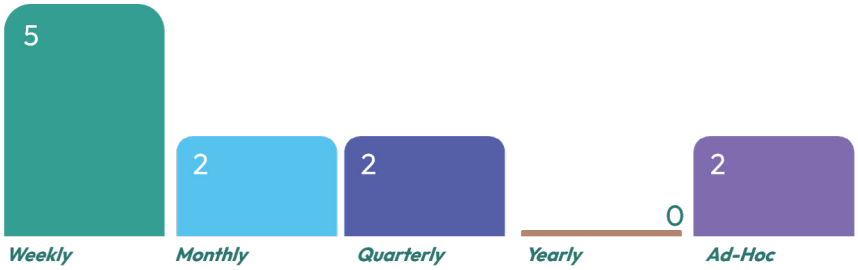
Drone value

Cost savings is the top priority for drone use, followed by operational time savings and safety. Sustainability and accessibility to new areas were lower-ranked but still important.



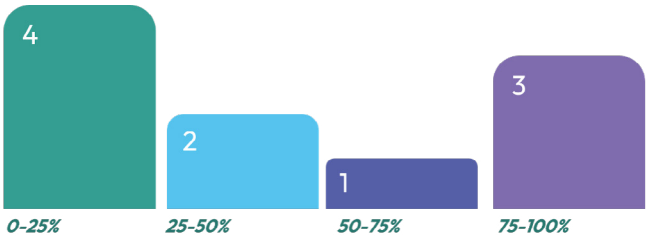
Flight frequency

Weekly flights are the most common, but there is an equal distribution of organisations who fly drones ad-hoc, monthly, or quarterly.



Delivery model (% in-house)

Drone operations are mostly either highly outsourced (0-25%) or highly in-house (75-100%), with fewer organisations having a balanced split.

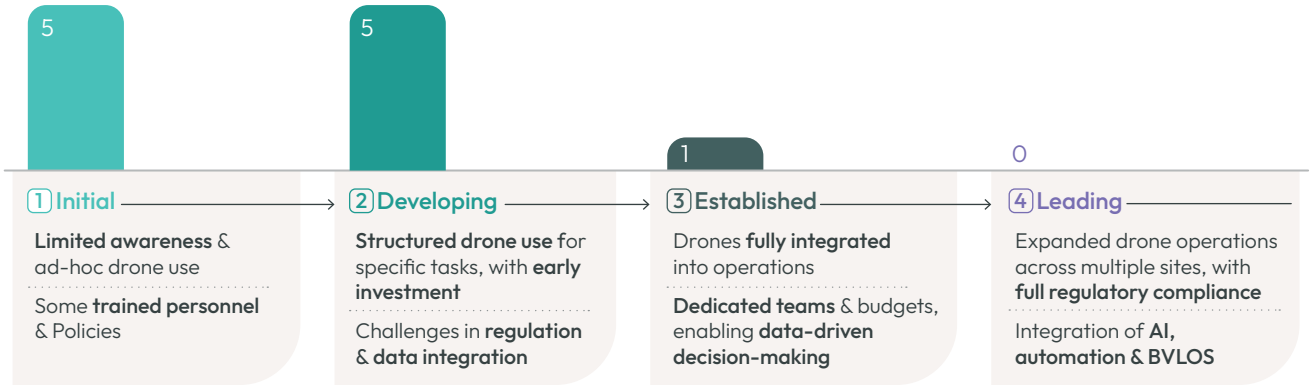


Drone adoption maturity

There are various models for drone adoption maturity (indeed we find maturity is best for specific applications) though our general 'drone maturity model' allows effective comparison across sectors.

Despite being widely recognised as some of the leading end users in the country, most classified themselves as either 'Initial' or 'Developing', with very few 'Established' and none 'Leading'; suggesting they feel they are still early in their journey, with much to develop.

Number of users scored against drone adoption maturity



Pathways forward

This paper will be followed by a Part 2, informed by the EASE workshop on 23 April 2025, this will include:

1 **Ask to government**
Summary of key end users asks to government

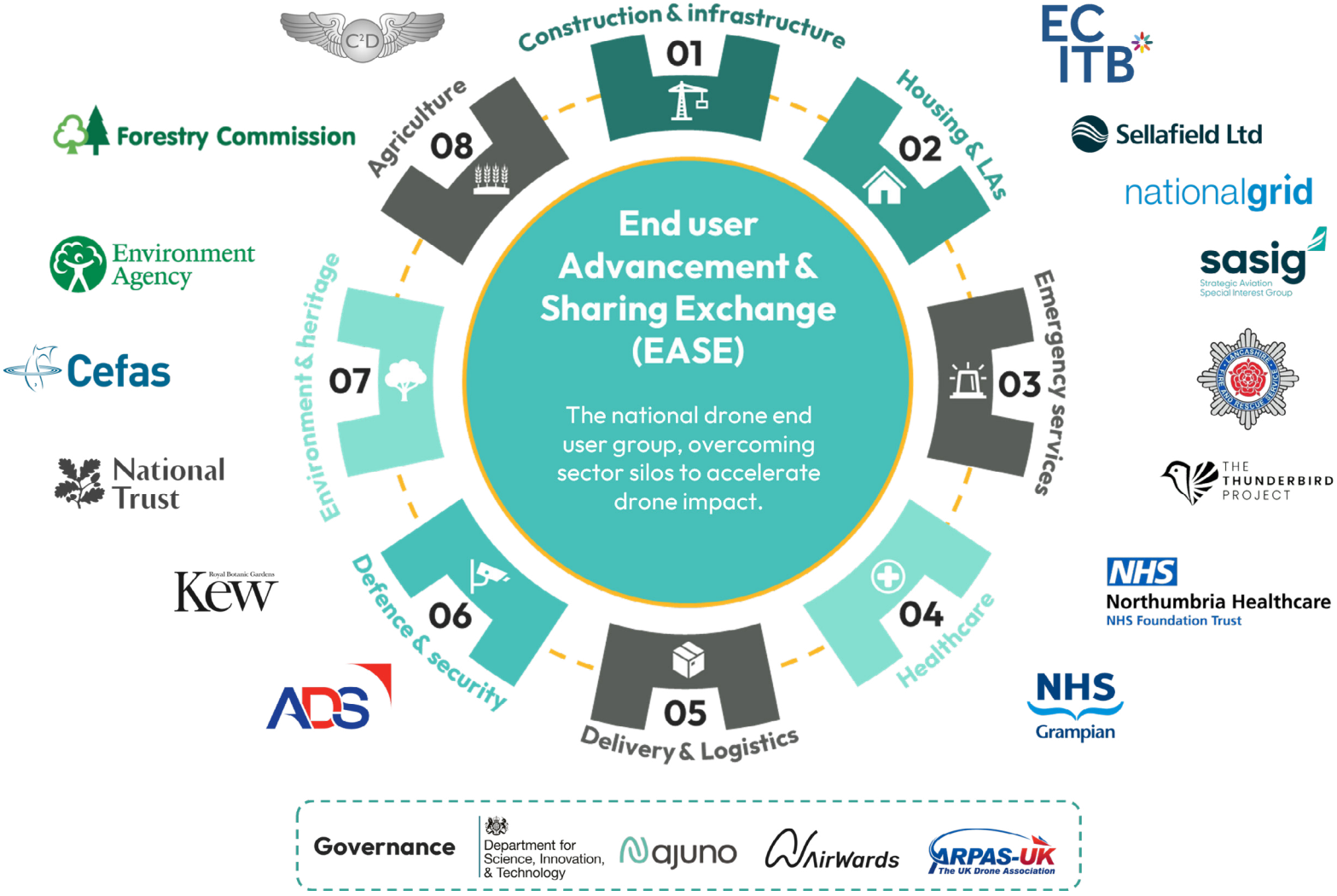
2 **5 years to BVLOS at scale**
Scenario forecasting to BVLOS at scale

3 **Tip of the Iceberg**
A reflection on the UK drone market's potential

4 **How do we get there?**
Key themes of action to maximise drone impact

Appendix

EASE scope



EASE overview

End user Advancement and Sharing Exchange (EASE)

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1. End users are the gateway for the drone industry to deliver value to society.
2. To unlock the return on significant investment in the drone industry we need to address critical challenges constraining drone use.
3. EASE draws together a cross-sector community of end users, overcoming silos.
4. EASE led initiatives address critical challenges and form the basis of an enabling, industry wide commercialisation programme.
5. The resultant *ease* of drone adoption will unlock the mainstream market - crossing the chasm, scaling the value flow from the drone industry to society and enabling exponential drone returns.

Drone industry → **1 End users** → **Society**

2 Commercialisation programme

Key challenges

Senior stakeholder buy-in
Informed leadership, confident to adopt drone solutions.

Local Bylaws & regulation
Local officials, using and enabling lawful commercial drones.

IT infrastructure
Effectively integrated IT systems fit for purpose.

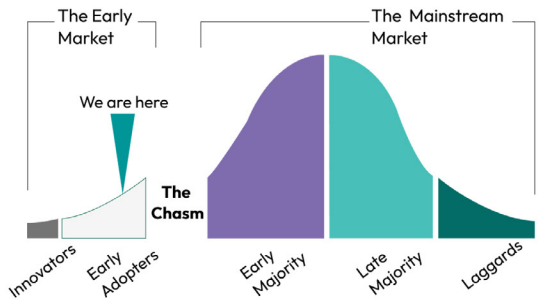
Example initiatives

- Impact focused success stories
- Adoption guides & senior stakeholder events
- Bylaw consultation body
- Policy menu for Local Authorities & council helpline
- Best practice software register & workshops
- IT success case studies

Key benefits

- **Achieve more with less** – EASE enables greater sharing between end users and across sectors.
- **Effective communications & aligned strategy** – EASE provides a single strategic point to engage with and align this critical stakeholder group.

5 EASE enables us to cross the chasm



Unlocking greater impacts for society:[1]

- Drones could contribute up to £45 billion to UK economy.
- An estimated 650,000 jobs could be created.
- Businesses could achieve £22 billion in net cost savings.
- Carbon emissions could be reduced by 2.4 million tons.

[1]Estimated by 2030, PwC SWLv2.0, July 2022

User maturity matrix

Maturity	Initial	Developing	Established	Leading
Usage	**Experimental, occasional** use.	**Limited** operational use in specific tasks.	Regular use, **replacing** traditional methods.	**Scaled, multi-site** operations, **BVLOS**.
Strategy & governance	No formal **plan** or **policies**.	Early-stage **strategy**, some policies forming.	Integrated **governance** & risk management.	**Fully embedded** in corporate strategy.
Technology integration	**Off-the-shelf** solutions.	Some **integration** with existing operations, limited automation.	Fully integrated with workflows, **data-driven** insights.	**AI-powered analytics**, automation, and BLOS capabilities.
Personnel & training	No **trained** personnel, reliance on third parties.	Some in-house pilots, early training **investment**.	**Dedicated teams**, structured training programs.	Advanced **in-house teams**, automation expertise.
Compliance & regulations	Unclear on **regulations**, **limited** understanding.	Beginning to **navigate compliance**, partner reliant.	**Full regulatory adherence**, safety management in place.	**Proactive engagement** with regulators, shaping policy.

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