

Introduction

On 22 February, the UK unveiled its new drone strategy, marking a significant milestone in developing and deploying unmanned systems for its armed forces¹. Backed by an investment of £4.5 billion over the next decade, this strategy aims to accelerate the adoption and development of drones in the land, sea and air domains.



Illustration 1 UK Drone Strategy (UK MoD).

The main objectives of the strategy are to enable rapid experimentation, unify frontline commanders' vision, and encourage industry collaboration. This initiative, led by Defence Minister James Cartlidge, reflects the growing importance of drones and their revolution in the modern warfare landscape, especially in the wake of events in Ukraine.

In this context, the UK strategy is a proactive response to strengthen the country's defense capabilities and ensure continued innovation in this critical area.

¹ UK MoD (22-2-2024). *Defence Drone Strategy - the UK's approach to Defence Uncrewed Systems*. Disponible en: <https://www.gov.uk/government/publications/defence-drone-strategy-the-uks-approach-to-defence-uncrewed-systems> (Consulta 24-2-24).

Background

The UK's new drone strategy uses unmanned systems to enhance its defense capabilities. This strategy responds to the need to adapt to a warfighting environment characterized by innovation, technology, and the digitization of the battlefield, as evidenced by the conflict in Ukraine.

This strategy aims to position the UK as a world leader in unmanned defense systems, leveraging its research, development, and manufacturing capabilities to strengthen national security and foster economic growth. It seeks to seamlessly integrate and operate autonomous and unmanned systems to enhance the country's defense capabilities significantly.

The return of war to Europe has highlighted the urgent need for a more resilient, robust, and agile approach to defense procurement. Both its *Integrated Review Refresh* and *Defence Command Paper*, reviewed here², recognize this imperative, underlining the importance of reviewing its procurement system to maintain an operational advantage, something Spain should do.

The conflict in Ukraine is evidence of a new way of waging war, marked by innovation, technological proliferation, and the digitization of the battlefield. The UK is drawing lessons from this experience and seeking to consolidate its position as a world leader in unmanned systems. This will require considerable changes in its processes, culture, and relationship with the industry.

Fostering a culture of results-driven innovation capable of rapidly translating advances in research and development into military practice is essential. Close collaboration with the defense industry will be crucial in this endeavor. Unmanned technology is being used in many different ways. Countermeasures to counter this threat are also multiplying; therefore, future unmanned systems must be protected³.

This strategy's primary focus is to promote a more cohesive partnership with industry, strengthening its ground defense capabilities and component stockpiles. It also seeks to

² Conte de los Ríos, Augusto (2023). Análisis del nuevo Defence Command Paper 2023 del Reino Unido. *Revista Ejército*. Available at: <https://www.revistaejercitos.com/conflictos/analisis-del-nuevo-defence-command-paper-2023-del-reino-unido/> (Accessed 8-3-24).

³ Bruns, S. & Jopp, H. (2024). Die nasse Flanke des Russland-Ukraine-Kriegs – Lektionen für die moderne Seekriegsführung und die Marine. *SIRIUS – Zeitschrift für Strategische Analysen*, 8(1), 50-57.

create a policy environment conducive to innovation that will encourage using unmanned systems to multiply forces, thereby strengthening its global deterrence capability.

The strategy is based on four key objectives: procurement reform, industrial resilience, digital integration, and an innovation-friendly regulatory environment.

Procurement reform aims to streamline processes to adapt to changing needs and new threats. In contrast, industrial autonomy aims to strengthen the relationship with domestic industry to avoid over-reliance on foreign suppliers.

Digital integration is crucial to enable joint operation between manned and unmanned platforms and collaboration with allies.

Finally, establishing an enabling regulatory environment is essential to ensure that obsolete regulations do not hinder strategic advantage and ensure timely delivery of critical equipment.

What is the vision here?

The UK's drone strategy vision is to become a world leader in unmanned systems for Defence, leveraging its research, development, and manufacturing capabilities to safeguard its national security and foster its economic growth.

This involves seamlessly integrating and operating unmanned autonomous systems to significantly enhance the country's defense capabilities. The constant adaptation and iterative development of these systems are seen as crucial to ensuring a more consistent military effect and, thus, a better defense and deterrence capability.

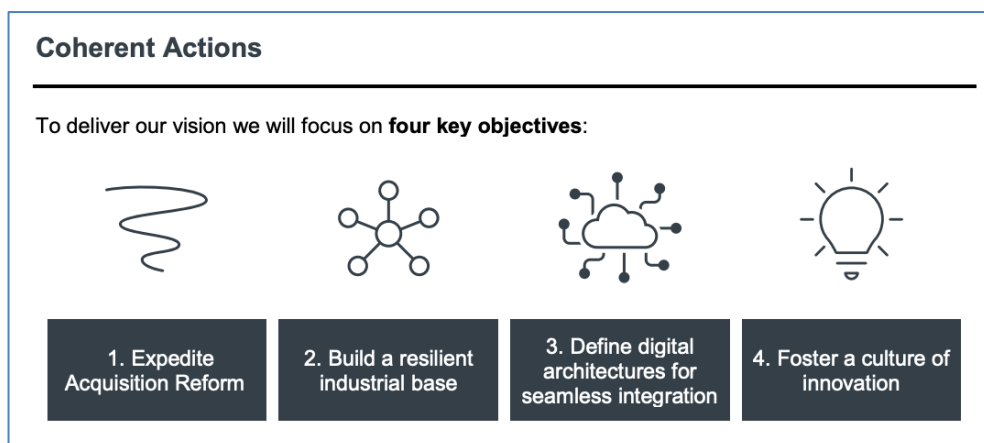


Illustration 2 Main objectives of the strategy (Source: UK MoD).

The strategy is divided into four main objectives:

1. Accelerate procurement reform: Adopt a more adaptive and agile procurement process, understanding the changing threat landscape and developing capabilities that can evolve accordingly. It seeks to integrate iterative capability development into the acquisition process and to be transparent with the industry on requirements and design standards.
2. Build a resilient industrial base: It seeks to ensure the supply chain's resilience for critical components and platforms by focusing on onshore design and production and working closely with industry to share knowledge and expertise.
3. Define digital architectures for seamless integration: Set high standards for digital integration and collaborate with international partners to maintain robust supply chains. Leverage actual operations data to improve capabilities continuously.
4. Foster a culture of innovation: Leverage the ingenuity of defense personnel to foster a culture of innovation, align research and development with operational challenges, and collaborate with regulators to overcome regulatory challenges.

These objectives will be implemented through coherent actions, including collaboration with industry, defining digital architectures, developing spiral capabilities, and promoting a culture of innovation.





	<p>Air</p> <ul style="list-style-type: none"> • The MQ-9 Reaper, in service with the Royal Air Force since 2007, has completed over 140,000 operational flying hours and 1,500 weapons releases. Its replacement, the world-class MQ-30B Protector, will carry a variety of weapons and sensors and can self-deploy anywhere in the world. • Alongside development of the Global Combat Air Programme (GCAP), the RAF is testing cost-effective expendable Autonomous Collaborative Platforms (ACP) designed to leverage cutting edge technology to support high-risk combat operations. • The ACP Programme has a range of experimental and development platforms able to deliver strategic effects at range. 		<p>Littoral Strike</p> <ul style="list-style-type: none"> • The Commando Force and Royal Navy have built upon lessons from Ukraine to develop the use of UK built heavy lift UAS (Uncrewed Air Systems) to deliver munitions and supplies. • Uncrewed systems are being fully integrated with networks to minimise the sensor to shooter cycle across the Joint Force. • The Commando Force is also developing autonomous sub-surface and surface craft to enable manoeuvre from the sea.
	<p>Underwater, Surface and Above Water</p> <ul style="list-style-type: none"> • The Royal Navy has developed the use of Remus 100 and 300 Uncrewed Underwater Vehicles (UUVs) for mine detection, and M500 underwater Remote operated Vehicles for seabed operations. • Learning the lessons from the Black Sea and our leadership of experimentation in the Maritime Coalition, UAS are deployed onto Royal Navy frigates, increasingly integrated into ship Combat Management Systems. • HMS Prince of Wales has conducted a number of 'firsts', launching and landing a 9 metre long Mojave RPAS and the UK produced Windracer heavy lift logistic drone. 		<p>Land / Near Surface</p> <ul style="list-style-type: none"> • The Army has a long history of uncrewed system development and operation, from the small tactical Desert Hawk to the larger Phoenix, Hermes and Watchkeeper. • We have developed short and long-range find and strike systems for use in the Ukrainian theatre, with many sourced from UK small and medium companies. • The lessons learned from Ukraine are informing the Army's spiral system development at pace.

Illustration 3 Example of the four areas of work (Source: UK MoD).

The strategy covers developing and using unmanned systems in various areas, capabilities, and domains, such as naval mine clearance, heavy transport, intelligence, and surveillance.

It highlights the importance of critical sectors such as robotics, artificial intelligence, and information technology. Additionally, it emphasizes the need for close collaboration with industry to develop platforms and components that adapt quickly to changing battlefield developments.

For example, the Royal Navy is already advancing this technology in submarine and surface warfare to enhance its operational capabilities. They use unmanned underwater vehicles to detect mines and conduct seabed operations.

These vehicles are being integrated into their ships' combat systems. In addition, they have achieved significant milestones, such as launching and landing large aerial drones like the Mojave-9 from the aircraft carrier Prince of Wales.



Figure 4 Mojave tests on the Prince of Wales (Source: Royal Navy).

They are also employing unmanned aerial drones to transport supplies, learning from experiences from the war in Ukraine. These advances are being integrated into its development network to improve operational efficiency across the Joint Force. In addition, its Command Force is developing autonomous vessels for maneuvering from the sea.

The strategy also mentions some drones and vehicles already used in the UK. The Royal Navy drones listed in the text are:

- Remus 100 and 300 used by the Royal Navy for mine detection
- M500 used for seabed operations.
- Mojave 9 and Windracer, drones used by the Royal Navy for transport and logistics.

In partnership between government and industry, the UK defense enterprise has taken on the challenge of supporting Ukraine. Thousands of unmanned systems have already been provided, and the recent commitment of £2.5 billion per year for military support to Ukraine continues, including hundreds of millions to support unmanned logistics, surveillance, strike, and maritime platforms.



Figure 5 M500 trials (Source: Royal Navy).

Important lessons have been – and will continue to be – learned regarding unmanned technology from the Ukrainian war, including the development and delivery of long-range unmanned air and maritime strike systems.

How do you intend to implement it?

The use of unmanned systems in conflict is not new. Since World War I, drones and remotely controlled boats have been developed to deploy explosives. However, in contemporary conflicts, unmanned systems cover a more comprehensive range of tasks than ever, from targeting to attack.

These systems increase a force's effectiveness by reducing the risk to people in physically and electronically contested environments and freeing personnel for essential tasks that only humans can perform. The scale of use of unmanned systems in recent conflicts in increasingly physically and electronically contested environments is unprecedented.

Rapidly developing inexpensive, dual-use commercial and military technologies have democratized their use. They are used surgically to generate war mass to protect much more expensive and advanced platforms. Their use in diverse scenarios, from Ukraine, with tens of thousands, to the Middle East and the southern Red Sea, indicates that unmanned systems are not only here to stay but that their use is likely to increase as technology expands the opportunities for their employment.

Unmanned systems are much more than a platform: they rely on the deliberate integration of components, software, and supporting networks. They have also learned in procurement that the breakneck pace of technology adaptation, along with industry, sometimes measured in weeks, challenges our traditional development and acquisition methods. This requires a change in our procurement approach to rapidly deliver practical, interoperable, and secure capabilities.

Unmanned technologies are becoming an increasingly important part of the UK Armed Forces' arsenals. The forces are already experienced and have several programs underway. However, adversaries are also developing their capabilities at a rapid pace, so they must maintain their advantage⁴.

Developed in close liaison with the defense industry, this strategy aims to improve collaboration and innovation about unmanned systems. It focuses on capability development, acquisition, and the realization of operational advantages in air, land, and

⁴ *Ibíd.*, p. 53.

sea-based surface and undersea systems. Collaboration with partners, transparency in public engagement, and establishing a defence-level governance mechanism would underpin ambitious delivery plans⁵.



Illustration 6 The Mojave on the deck of the Prince of Wales (Source: Royal Navy).

It is designed to guide defense professionals and industry on how the MoD will link research, development, manufacturing, and platform adaptation to make the UK a world leader in unmanned systems.

The top priority of this strategy is to ensure the success of the UK-Ukraine Partnership initiative, which represents a crucial milestone in their bilateral strategic relationship. They are committed to learning from battlefield experiences to drive development and avoid unintended mistakes.

In addition, the large-scale procurement approach serves the needs of their own and Ukraine's armed forces. They work closely with the industry to refine requirements and address concerns while establishing a direct dialogue with regulators to ensure alignment of their requirements with existing regulations.

They also seek to collaborate with other partners nationally and internationally to achieve all strategic objectives. In this strategy, they recognize the importance of public

⁵ *Ibíd.*, p. 53.

engagement and are committed to balancing transparency and security by reporting on progress accountable.

The three Armies, through the UK Strategic Command, are leading its implementation to maximise the integration of their unmanned capabilities. As technology advances, we must seize new opportunities and adapt to the changing nature of warfare.

Finally, a Defence-wide governance mechanism will be put in place to support the plans of the three Armies, focusing on six key areas to accelerate operational capability and improve collaboration with industry:

1. Research and Development.
2. Operational, Equipment, and Market Analysis.
3. Digital, Integration, and Security Standards.
4. Testing and Evaluation, Coordination and Exploitation.
5. Policy, Regulation and Risk.
6. Industry Principles and Business Agility.

Conclusions

During the war in Ukraine, the growing importance of unmanned systems initially focused on uncrewed aerial vehicles but has now become evident across the rest of the land, sea, and air domains. The frontline operational environment presents significant challenges for these systems, especially with unprecedented levels of electronic warfare employment.

High equipment casualties and destruction rates require new capabilities, leveraging commercial practices to deliver solutions at lower costs. This situation has driven a new acquisition and support model, with close collaboration between MoD and industry to develop capabilities at a much faster and more agile operational pace.

This strategy emphasizes collaboration between companies and Defence, both new and established, to operate more agile support cycles. This involves many software and hardware modifications, with multi-disciplinary teams working in unison.

It underlines the importance of learning real-time lessons from the Ukrainian theatre and elsewhere to drive the production and procurement of unmanned systems for its armed

forces.

While the strategy represents a significant step towards modernisation and adaptation to Ukraine's new realities, some aspects raise questions. The lack of a detailed breakdown of priority technologies and a clear roadmap for achieving key objectives raises uncertainties about the actual implementation of this initiative.

In addition, the absence of concrete timelines and metrics leaves doubts about the speed and efficiency with which the planned developments will be realized. Despite these challenges, the strategy underlines the UK's commitment to continuous innovation and adaptation in Defence, which is crucial in an increasingly complex and dynamic geopolitical environment.

The UK's drone strategy builds on lessons learned from the conflict in Ukraine, where the importance of unmanned systems has been noted. The operational environment on the front line has been particularly challenging, with high casualty rates.



Figure 7 XLUUV developed by MSub (Source: UK MoD).

To address these challenges, a new acquisition and support model has been adopted in close collaboration with industry to develop operationally relevant capabilities in record time.

The strategy also involves significant changes to conventional force and troop reduction, recognizing that unmanned systems can provide more efficient and compelling capabilities in physically and electronically contested environments.

It seeks to drive innovation and collaboration to create closer partnerships between government and industry, build resilient supply chains, generate employment and export opportunities, and enhance collective operational advantage and security in collaboration with allies and partners.

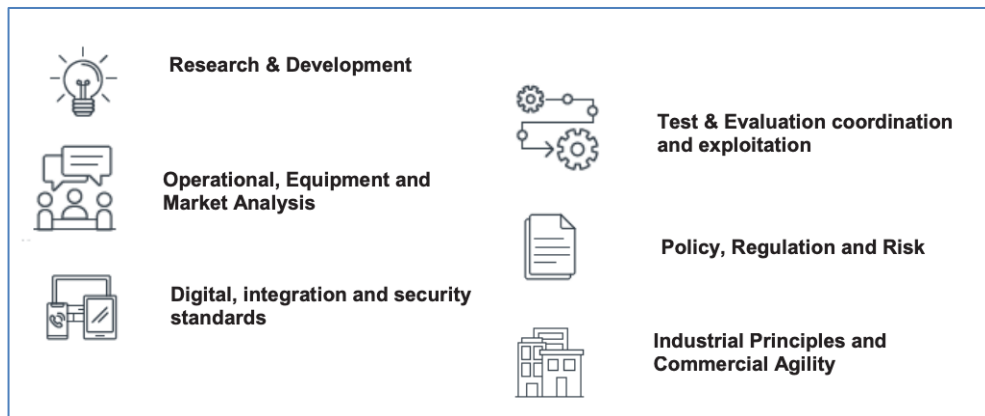


Figure 8 The four key areas to be developed (Source: UK MoD).

Among the anticipated challenges lies the imperative to adjust to a dynamic warfare landscape, cultivate adaptable capabilities capable of responding to evolving threats, guarantee the resilience and self-sufficiency of the industrial infrastructure, and strike a balance between capability requirements and the imperatives of national security, sovereignty, and a robust domestic industrial base.

In short, the strategy seeks to position the UK as a world leader in unmanned systems by working more closely with industry to develop platforms and components that adapt rapidly to changing battlefield needs.

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