

Executive Summary

The UK Robotics and Autonomous Systems (RAS) sector holds substantial economic promise, with the potential to significantly enhance national productivity and economic resilience. Despite notable strengths, particularly in software and artificial intelligence, the UK's ability to manufacture RAS domestically remains limited, leading to reliance on imported components. This dependence leaves the industry vulnerable to global supply chain disruptions and limits domestic innovation capacity. Moreover, the overall UK industrial capability to make RAS systems falls far short of international partners. The limited capability to make RAS within the UK feeds into low domestic uptake in general; Industry analysis reveals that the UK ranks only 24th worldwide in industrial robot density, significantly trailing other G7 nations.

We undertook a comprehensive industry survey of ~10% of the UK industry actively making RAS domestically. We found that while structural and mechanical components are generally sourced domestically (reflecting strong local fabrication capabilities) the UK lacks significant manufacturing infrastructure for more sophisticated parts, predominantly procured from Asia, particularly China, due to perceived lower production costs and superior technical expertise. The survey highlighted that the UK RAS manufacturing ecosystem is fragmented and disconnected; indeed, in many cases there may be viable UK alternatives – but they are difficult to identify. To address these barriers, three strategic interventions are recommended:

- > Firstly, establishing a **National RAS Registry** to enhance UK industry connectivity, collaboration, and visibility. Such a platform will enable companies to better identify local suppliers, partners, and innovation opportunities, significantly reducing isolation among SMEs and fostering domestic supply chain resilience.
- > Secondly, the creation of a dedicated **RAS Component Adoption Hub** would facilitate hands-on testing, prototyping, and collaborative development, addressing current supply chain vulnerabilities by fostering domestic innovation and promoting local component manufacturing capabilities.
- > Thirdly, investing in **targeted skills development** initiatives is critical. Structured apprenticeships, modular certification programs, and professional secondment schemes would address acute shortages in specialist robotics expertise, equipping the workforce to meet evolving technological demands and enhance the industry's competitive standing.

These recommendations need to be implemented on foundational circular economy principles. This includes designing robots for easier disassembly and recyclability, promoting material transparency, establishing regional end-of-life infrastructure, and incentivising sustainable practices through policy and automation investments.

Together, these initiatives form a comprehensive and cohesive strategy to transform the UK's fragmented RAS sector into a robust, innovative, and globally competitive manufacturing ecosystem, capable of achieving sustainable growth and resilience.