

Fostering collaboration to overcome innovation challenges

- Plextek has secured funding through a variety of DASA Themed Competitions, developing software and engineering solutions in areas such as aviation security, unmanned air system payloads, and countering hostile drones
- A long-term engager with DASA, Plextek is a key enabler of collaborations, providing other innovators bespoke design and technology support with DASA competitions to help them complete innovative projects
- Support and encouragement from DASA has encouraged a diversity of thought in defence and security innovation, enabling companies of all types and size to work together and collaborate to solve defence and security challenges

Introducing Plextek

With the growth of technologies such as artificial intelligence, drones and robotics, the UK faces many defence and security capability requirements and challenges. Ambitious capability requirements call for equally ambitious innovators working together to embrace new ways of finding solutions to prevailing defence and security challenges.

The Defence and Security Accelerator [DASA](#) relies on diversity of thought in order to find and fund the very best innovations for defence and security, and we encourage collaboration in all of our services. One company that has helped other innovators and contributed to an array of DASA competitions is [Plextek](#), an electronic engineering design, development and supply organisation based near Cambridge.

Plextek specializes in offering solutions based support to organizations to help them reach their potential and bring their innovations to market, offering technical expertise in product design and technology development.

The key is in collaboration

Plextek has a long history of collaborating with other innovators, small and large, to be a key enabler of creating powerful solutions for DASA Themed Competitions. They offer bespoke solutions and provide an additional layer of support for innovators to complete projects.

By working and developing alongside the wider defence supply chain over time through DASA Themed Competitions, Plextek has grown their reputation within [Defence Science and Technology Laboratory](#) (Dstl) and the wider Ministry of Defence (MOD), develop new technical expertise and create solutions for many technology areas, from aviation security, to unmanned air system (UAS) payloads, and countering hostile drones.

Plextek's focus on providing avenues for flexible collaboration in a defence

industry that is fast-changing has allowed them, and many other innovators, to pivot and respond to different DASA challenge competitions, in a way that would have been difficult without collaboration.

The advantage of alliances

For innovative organisations of all types and size, the ability to share ideas with like-minded organisations can be a huge multiplier for overcoming technical challenges. This can come in the form of knowledge exchange, technology sharing, hands-on work and cost. No matter the method, collaboration enables organisations to learn rapidly and innovate, through combined perspectives and strengths.

Plextek has been at the forefront of many collaborations to help innovators in DASA Themed Competitions. Some examples include:

Autonomous Last Mile Resupply: Phase 1 & 2 / Autonomy in Challenging Environments: Phase 1

[Autonomous Last Mile Resupply](#): Phase 2 sought to develop and demonstrate the use of autonomous systems to deliver mission-critical supplies, whereas [Autonomy in Challenging Environments](#): Phase 1 sought to demonstrate novel sensors to aid autonomous systems. During these themed competitions, Plextek supported other innovators such as Barnard Microsystems, Griff Aviation, Fleetonomy.ai and Createc to demonstrate a 60 GHz mm wave radar, which can be mounted on a UAS in order to provide day/night, all-weather sensor capabilities to avoid hazards and safely deliver supplies.

From providing radar and transponder demonstrators to investigating the application of machine learning to radar, Plextek enabled these funded projects through flexible support.

Many Drones Make Light Work: Phase 1, 2 and 3

[Many Drones Make Light Work](#) explored novel approaches to develop the military capability of a swarm of low-cost, small UAS operating cooperatively. In this competition, Plextek worked with Blue Bear Systems Research and IQHQ. Plextek designed, developed and supported integration and experimentation of the approach to repurpose IQHQ's nano-Software Defined Radio (SDR) onto a small, fixed-wing Blue Bear Systems Research UAS platform, including optimised conformal antennas, to enable demonstration of fractionated electronic support measures.

Future of Aviation Security: Phase 1 & 2

[Future of Aviation Security](#) explored innovations that enable better screening and detection of contraband items concealed in vehicles, while minimising the burden on aviation staff and passengers. In this competition, Plextek was a key contributor to finding novel ideas for future aviation and border security and helped link multiple projects together for the wider programme, through providing communications and radar system expertise.

Countering Hostile Drones: Phase 1 & 2

[Countering Hostile Drones](#) sought to find innovative solutions to address the increasing UAS threat, from detecting a drone, to identifying it and deploying measures to counter it.

In Phase 1, Plextek collaborated with Blighter Surveillance and Blue Bear Systems Research to help combine their technologies to demonstrate a Hunter-Killer drone concept equipped with a low Size, Weight, and Power (SWaP) Electronic Warfare (EW) package, to detect an adversary drone and disable it. Plextek also successfully demonstrated a proof of concept for a low SWaP ubiquitous radar, designed to be the intercept radar for the UAS. In Phase 2, Plextek matured and miniaturised the ubiquitous radar, successfully demonstrating its utility as a networked, ground to air CUAS sensor in urban environments, funded via the Home Office (HO) and Department for Transport (DfT).

Creating the right solution together: Ideas Marketplace

DASA provides the ability for multiple organisations to link multiple projects together for a wider programme, centred on strong engagement and long-term relationship support. The relationships Plextek has developed with the likes of Blue Bear Systems Research, IQHQ and Griff Aviation and more, were enabled through DASA.

Through building relationships and collaboration, each innovator can utilise their strengths and direct them towards shared defence and security challenges, and in Plextek's case, foster relationships that span multiple funded projects.

DASA is excited to be a key enabler for organisations to build relationships to solve defence and security challenges, and we want to make it even easier. Therefore, DASA was pleased to launch the Defence Technology Exploitation Programme [DTEP](#), a £16 million programme to boost small and medium-sized enterprise (SME) defence innovation. And also the [Ideas Marketplace](#), an online platform where innovators can collaborate, share ideas and get innovations in front of stakeholders.

[Welcome to the Ideas Marketplace](#)