



Oxford Space Systems



£1m injection into pioneering new space technology

Summary

The development of a new generation of pioneering British deployable satellite antennas has been boosted following a £1m MOD investment. In collaboration with the Defence Science and Technology Laboratory (Dstl) and the Defence Innovation Fund, this is the largest contract placed with a first-time supplier by the Defence and Security Accelerator (DASA).

Europe's first flight proven satellite antenna

The 'wrapped rib' antenna is lighter, less complex and more cost-competitive than those currently available commercially. The antenna will be exclusively developed in the UK by Oxford Space Systems (OSS). It will make the UK the first European country with the capability of a flight-proven parabolic deployable antenna.

The lighter weight of the 'wrapped-rib' antenna means it can be transported to space more efficiently at less expense. This is critical in an industry where launch costs are high. The MOD funding will assist OSS to increase the antenna's size and its performance to meet the needs of defence.

UK space capability

The new antenna will be used to meet the needs of fine-resolution Low Earth Orbit Synthetic Aperture Radar (SAR) imagery. SAR permits all weather Earth observation, irrespective of time of day or night. This provides unique advantages for both civil and defence applications. The technology will enable the UK to deploy a number of antennas in space, providing more accurate and frequent satellite images.

Defence Secretary Gavin Williamson said:

"I have been clear that we need to accelerate the development of new, innovative capabilities - especially those in the space domain. It is vital that we have homegrown affordable technologies like this pioneering deployable satellite antenna to maintain a commanding military advantage over our adversaries and competitors."



Case Study

The technology consists of a specialist carbon-fibre composite and utilises origami engineering techniques to create a unique, compact, deployable antenna. This results in an antenna that is compact and light weight when folded for easy portability and deployability but can unfurl to several metres when in space, just like a large pop-up umbrella.

DASA added value

- Following a DASA presentation at an event, our innovation advisors met and engaged directly with OSS to understand their business and identify the innovations of potential interest to defence and security;
- Reach-back into government identified interest in the 'wrapped rib' antenna from the Dstl space programme and, critically, the potential for a successful exploitation through Project Oberon;
- Links were established between Dstl and OSS, enabling OSS to better understand MOD's challenges. This liaison prompted OSS to apply for funding through the DASA Rapid Impact call;
- Guidance through the application process ensured that OSS submitted a viable and desirable proposal.

Contact

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Head of DASA, Lucy Mason said:

“Our work with OSS ticks all DASA’s objectives, not only did we provide the initial stimulus to establish this partnership, but it will also open up opportunities for truly cross government collaboration, with the potential to meet the needs of both our defence and security customers. Additionally, the project will contribute to UK prosperity by creating jobs and increasing export opportunities. This is exactly why DASA exists.”

OSS Senior Commercial Strategist, Shefali Sharma said:

“This contract represents a considerable stamp of endorsement by the UK Government for OSS on the global stage. The funding allows us to create high value employment in the space sector and grow our team of experts at our Harwell base. We view our antenna technology as a key enabler for the next-generation of communications and SAR services from orbit.”



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