

Press Release

2nd April 2019

SSTL and OSS Collaborate on Disruptive Smallsat SAR Payload

Two of the UK's leading Space sector companies, Surrey Satellite Technology Ltd (SSTL) and Oxford Space Systems (OSS) have been awarded National Space Technology Programme funding to develop an innovative and stowage-efficient Synthetic Aperture Radar (SAR) payload. This new technology delivers a truly disruptive solution and is a key enabler for the next-generation of SAR services from orbit where there are currently no low volume, deployable SAR payload solutions that meet the price points and lead times of the NewSpace opportunities. OSS' expertise in novel deployable antennas combined with SSTL's extensive experience with small, cost-competitive satellites delivers a powerful collaboration to successfully address this global market opportunity.

The innovative SAR payload will be exclusively developed in the UK and will comprise of a highly stowage-efficient deployable antenna from OSS and a high bandwidth radar instrument and RF system from SSTL. Successful completion of the project will enable the OSS antenna to be flown on a future demonstration mission from SSTL targeted for a 2021 launch.

Although an essential part of many geostationary telecoms satellites and likely to form a critical part of a large number of smaller Low Earth Orbit spacecraft, Europe currently does not have a flight-proven deployable antenna solution. Existing deployable reflector antenna technologies tend to fold like an umbrella into a long cylindrical form which is not compatible with small launch envelopes and have significant structural challenges involved in supporting the cylindrical antenna during launch. The OSS novel deployable 'wrapped-rib' SAR antenna is highly stowage-efficient and deploys from a 'doughnut' type configuration.

SSTL has been working on low-cost SAR mission solutions for many years and in 2018 launched NovaSAR-1, a 450kg low cost S-Band SAR technology demonstration mission

which is acquiring SAR data for mission partners the UK Space Agency, Australia's Commonwealth Scientific and Industrial Research Organisation, and the Indian Space Research Organisation. The new deployable wrapped rib SAR antenna and RF system represents the next step as SSTL continues to push the boundaries for innovative, low-cost small satellite missions.

SAR permits all weather Earth Observation, irrespective of time of day or night. Anticipated applications will employ object detection and feature extraction from single polarisation images, mainly focused on manmade objects and pattern-of-life information. Example applications include disaster monitoring and management, urban planning, transport management, ship identification and tracking, and high temporal constellation-enabled monitoring for security and environmental risk management.

Andrew Cawthorne, SSTL's Director of Sales and Business Development said:

"The novel antenna technology from OSS combined with SSTL's low cost remote sensing systems are key enablers to realise a new generation of disruptive, cost-versus-performance, SAR and mixed SAR/optical missions. We believe that there is a strong market for this new SAR payload, with a shift in the market towards small satellites in LEO constellations delivering increased revisit times and a demand for non-optical EO data or combined SAR/optical data."

Shefali Sharma, Senior Commercial Strategist at Oxford Space Systems said:

"This collaboration under UK Space Agency's NSTP Flagship funding allows us to focus on maturing a variant of our 'wrapped rib' antenna toward on-orbit demonstration. We view this novel SAR payload as a key enabler for the next-generation of communications and SAR services from orbit. The antenna is highly scalable and tunable and has been specifically designed for volume production, targeting smallsat constellations. As such, it's suitable for a range of commercial opportunities not only here in the UK, but globally too."

Compared to optical sensors, the any-time/region imaging, capability of SAR makes it ideal for surveillance missions, which can serve both national security and environmental monitoring applications. A small satellite constellation approach that can be enhanced by

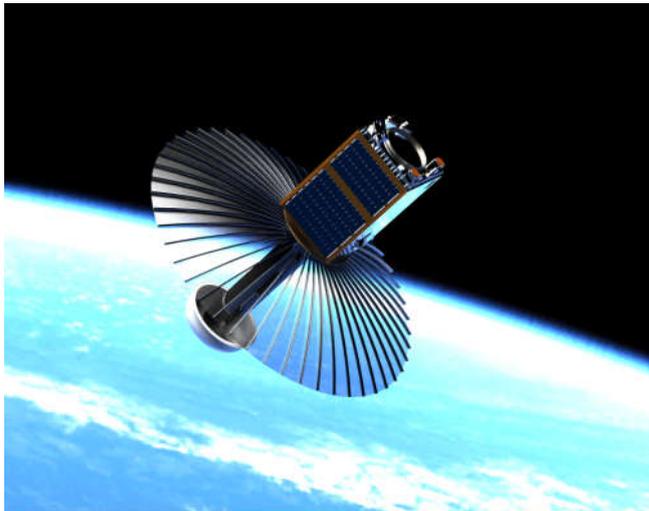
launches of additional satellites at short notice would also fulfil requirements for resilience and responsiveness.

Dr Graham Turnock, Chief Executive of the UK Space Agency, said:

“Our National Space Technology Programme is all about supporting the development of space technology and skills to drive growth in the UK economy. The funding to develop this innovative Synthetic Aperture Radar (SAR) payload will enable an exciting collaboration on new technology that will be developed here in the UK and will be of huge interest to customers in Europe and the rest of the world.”

Ends

Notes to Editors

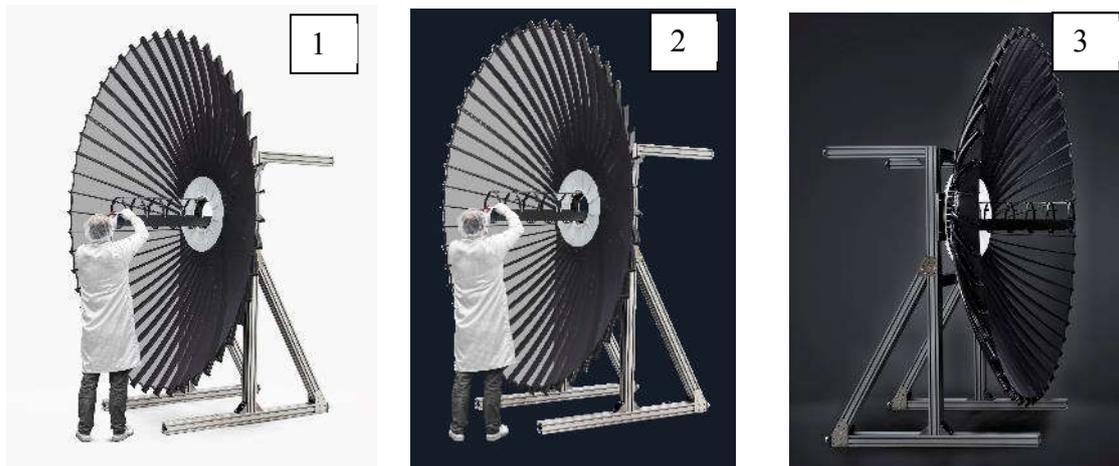


SSTL's future technology demonstration mission flying the new OSS deployable SAR antenna, credit SSTL. Full size image can be downloaded at <https://www.sstl.co.uk/deployable-SAR-payload>

Hi-res images available upon request of Wrapped Rib Antenna

Please contact **Shefali Sharma**

e: s.sharma@oxford.space m: +44 (0) 7838 882 248



See the OSS 'wrapped rib' antenna in action here:

<https://www.youtube.com/watch?v=k22cHBgXgJY>

S-band SAR images from the NovaSAR-1 mission can be viewed at www.sstl.co.uk/NovaSAR-1-images

Press contacts

Shefali Sharma

s.sharma@oxford.space

Mob: +44 (0) 7838 882 248

Joelle Sykes

Tel: +44 (0)1483 804243 / Mob: 07775 000853

Email: j.sykes@sstl.co.uk

About SSTL

Surrey Satellite Technology Limited (SSTL) is the world's leading small satellite company, delivering operational space missions for a range of applications including Earth observation, science, communications, navigation, in-orbit debris removal and servicing and beyond Earth infrastructure. SSTL designs, manufactures and operates high



performance satellites and ground systems for a fraction of the price normally associated with space missions, and employs 450 staff working on turnkey satellite platforms, space-proven satellite avionics, optical instruments and new mission concepts.

Since 1981, SSTL has built and launched more than 60 satellites for 20 international customers, as well as providing training and development programmes, consultancy services, and mission studies for ESA, NASA, international governments and commercial customers. Our innovative approach is changing the economics of space.

Headquartered in Guildford, UK, SSTL is part of Airbus.

www.sstl.co.uk

About Oxford Space Systems

Oxford Space Systems is a multi-award-winning, venture capital backed space technology business that is pioneering the development of a new generation of deployable antennas and structures such as solar panels & booms systems. Based upon novel proprietary materials, such as high-strain carbon fibre and design techniques such as origami engineering, OSS' structures are lighter, less complex, more stowage efficient and cost competitive that the state-of-the art.

Based at the UK's Harwell Space Cluster, OSS has excellent access to the expertise & facilities of RAL Space, the European Space Agency, the Science & Technology Facilities Council and the Satellite Applications Catapult. OSS is backed by significant private equity and enjoys the funding support of Defence and Space Accelerator, Innovate UK, the European Space Agency and the UK Space Agency.

As part of its recent expansion, OSS moved into its own custom facility giving it the largest clean room on campus from which to commercialise its technologies.

OSS is set on becoming the leading global supplier of innovative deployable space antennas and structures in the new commercial space age and ranks #52 in the Top 100 Fastest Growing UK Companies.

About the National Space Technology Programme

The National Space Technology Programme is a capability programme encouraging the development of space technology in the UK space sector. The UK Space Agency's aim is to drive growth into the UK economy by supporting the development of space technology and skills, as embodied in the UK Space, Innovation and Growth Strategy (Space IGS). NSTP offers support by funding industry, academia and other (not for profit) government institutions, who are looking to develop technology and build new capabilities for the UK Space sector. NSTP offers funding opportunities for projects across all ranges, from startup companies to more established industry. We encourage collaboration on projects both large and small, inspiring new and existing industries to develop and contribute to the growth of the UK economy.