

New funding to support sustainable future of space

- Space debris is a major threat to the satellite services we rely on
- 13 projects involve industry and academia across the UK

The UK Space Agency is providing £1.7 million for new projects to support sustainable space operations, Science Minister George Freeman announced today.

The 13 new projects will help track and remove dangerous debris in space. They include an AI-based tool which can take autonomous action to avoid a collision and another which will see multiple small spacecraft fired at debris before taking it into the atmosphere to dispose of it.

The Science Minister, UK Space Agency CEO Paul Bate and representatives from the UK space sector met at the Harwell Space Cluster in Oxfordshire to discuss the sustainable future of the space environment today (Monday 31 January).

Orbital congestion created by space debris is one of the biggest global challenges facing the space sector. There are currently an estimated 330 million pieces of space debris, including 36,500 objects bigger than 10cm, such as old satellites, spent rocket bodies and even tools dropped by astronauts orbiting Earth.

Space debris can stay in orbit for hundreds of years and present a real danger to the rapidly increasing number of new satellites being launched each year which provide vital services, including communications and climate change monitoring.

Science Minister George Freeman said:

Like debris on Everest, the first generation of space exploration and satellite launch has left millions of pieces of dangerous satellite fragments and 4,000 redundant satellites in orbit.

As our reliance on satellites for everyday activity grows, and the UK becomes a leading hub of small satellite design, manufacturing and launch this year via Virgin Orbit in Cornwall, this debris now poses a serious threat to our £16 billion space sector.

That's why we have made debris mitigation and removal – and the long-term importance of space sustainability – key elements of our National Space Strategy.

These projects will help put the UK at the forefront of both protecting the space environment for future activity, and accelerating UK technology leadership.

The UK's National Space Strategy set out a bold vision for the sector and recognises the need for the UK to lead in making space safe and sustainable. The new funding supports the development of underlying technology or data processing capabilities for space surveillance and tracking to support the removal of orbital debris.

In the past two years the UK Space Agency has provided £2.7 million for UK industry and academia to develop new technology for Space Surveillance and Tracking (SST) and debris removal, as well as investing around £16 million on space sustainability through the European Space Agency in 2019.

The UK is the largest contributor to ESA's Space Safety Programme. This new funding comes from a joint call from the UK Space Agency's Space Surveillance and Tracking and National Space Technology Programme.

Managing Director, Astroscale Ltd and Co-Chair of the IOSM Working Group, UKspace, John Auburn said:

We need to act now to build the UK's capability with the right level of UK investment; enhanced UK regulation and policy; supply chain development, and international partnerships. The In-orbit Servicing and Manufacturing (IOSM) working group, part of UKspace, is comprised of more than 65 members.

This rapidly expanding group is driving forward a shared vision to gain first leader commercial advantage in the in-orbit servicing and manufacturing sector. We must accelerate our efforts to secure a safe and sustainable space environment and see it as a natural extension of the Earth's environment. This will help to protect vital services, including those monitoring climate change, weather forecasting, disaster management and digital services for citizens and ensure we can provide them for generations to come.

In 2021 the UK Space Agency worked with the UN Office for Outer Space Affairs (UNOOSA) to support the next stage of international efforts to promote space sustainability and provided funding to research a UK-led mission to remove junk from space.