



Press Release

7 November 2019

SSTL Ships Target Satellite to Tokyo for Astroscale's ELSA-d Mission

The ELSA-d mission comprises of a Chaser satellite and the Target satellite, and will demonstrate key technologies for orbital debris removal

Surrey Satellite Technology Ltd (SSTL) has shipped a 16kg Target satellite for Astroscale's End-of-Life Services by Astroscale demonstration (ELSA-d) mission to Tokyo, where it will be bolted to the Chaser satellite for environmental testing ahead of launch in 2020.

The ELSA-d mission is designed to simulate capture of orbital debris and validate key technologies for end-of-life spacecraft retrieval and disposal services. The Target and Chaser satellites will be attached for launch and de-orbit, but while on-orbit at 500-600km they will be deployed in a series of increasingly complex separation and capture manoeuvres using search, identification, rendezvous, docking, and de-orbit technologies.

The ELSA-d Target satellite was designed and manufactured by SSTL in Guildford UK and incorporates S Band communications, GPS positioning, and a 3-axis control system. It will also fly an HD camera and lighting to record the capture sequences during eclipse. A ferromagnetic docking plate with optical markers is attached to the Target, allowing the ~180kg Chaser satellite to identify and estimate attitude before deploying a capture extension mechanism with a magnetic plate to latch on to the Target satellite.

Whilst rendezvous has been performed in orbit in the past, ELSA-d will demonstrate the first semi-autonomous capture of a non-responsive, tumbling Target, as well as the first identification of a Target that is outside of the field of view of the relative navigation sensors on the Chaser.



Once the demonstration concludes, the linked satellites will be moved to a lower orbit in readiness to re-enter the atmosphere where they will burn up.

Sarah Parker, Managing Director of SSTL, said “It is vital that the international space community tackles the issue of space junk and therefore I am very pleased that SSTL is involved in Astroscale’s ELSA-d inaugural end-of-life spacecraft retrieval demonstration mission. We are looking forward to following the in-orbit operations of this milestone mission.”

Nobu Okada, Founder & CEO of Astroscale, said “We are excited to receive SSTL’s Target satellite here at our Tokyo headquarters as we take the next step in this groundbreaking mission. We would like to thank SSTL for the commitment to ELSA-d and for working together to address the ongoing buildup of hazardous space debris in low Earth orbit.”

ELSA-d is scheduled to launch in 2020 on a Soyuz from the Baikonur Cosmodrome in Kazakhstan.

SSTL is at the forefront of space debris mitigation and removal activities and is the satellite platform manufacturer and spacecraft operator for the RemoveDEBRIS mission, which concluded a series of debris retrieval demonstrations in January 2019. Sir Martin Sweeting, SSTL’s Executive Chairman, is also Director of the FAIR-SPACE Hub, a UK National centre of research excellence in space robotics and AI which will address in-orbit servicing and space debris removal.

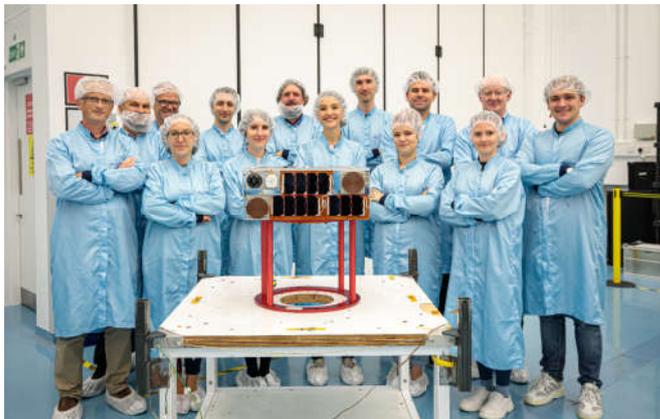
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Notes to editor:

Full size accompanying images for this press release can be downloaded at <https://www.sstl.co.uk/ELSA-d-shipout>



ELSA-d Target satellite during final assembly at SSTL. Credit SSTL/Kathryn Graham



ELSA-d Target satellite with SSTL engineering team, October 2019. Credit SSTL/Kathryn Graham

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About SSTL

Surrey Satellite Technology Limited (SSTL) is at the forefront of space innovation and is the world's leading small satellite company, delivering customisable complete mission solutions for Earth observation, science, communications, navigation, in-orbit debris removal and servicing and exploration beyond Earth infrastructure.



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

SSTL is well known for innovative missions such as the CARBONITE video imaging satellites, the NovaSAR S-band radar imaging satellite and the RemoveDEBRIS space debris removal technology demonstrator.

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

www.sstl.co.uk

About Astroscale

Astroscale is the first private company with a mission to secure long-term spaceflight safety and orbital sustainability for the benefit of future generations. Founded in 2013, Astroscale is developing innovative and scalable solutions for satellite end-of-life and active debris removal services to mitigate the growing and hazardous buildup of debris in space. Headquartered in Japan with offices in Singapore, the United Kingdom and the United States, Astroscale is a rapidly expanding venture company, preparing to solve a growing environmental concern.

For more about Astroscale, visit: www.astroscale.com