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Surrey's "Tugs in Space!"

Thanks to £250,000 of government funding announced today, a new type of electric space propulsion system will be developed by the **University of Surrey** in partnership with the University of Leicester. The new thruster would be used to service and reposition satellites in space via agile space tugs.

The **PLAsma TOrch Rocket** (PLATOR) project will fill a gap in current propulsion options, offering a balance between the high thrust typical of chemical propulsion engines and the propellant efficiency of electrical propulsion ones.

The project has been awarded £250,000 from the **UK Space Agency**'s Enabling Technologies programme.

Dr Andrea Lucca Fabris, Senior Lecturer in Electric Propulsion at the University's Surrey Space Centre and project lead, said:

"Our PLATOR rocket could be used as the main way to move spacecraft after launch, or it could be used in space transportation vehicles, or space tugs, for delivering satellites to specific orbital slots, refuelling satellites to prolong their service life and removing space debris."

As well as designing the propulsion system, the project will explore potential uses for PLATOR through flight dynamics simulations, identify the optimal size and design of space tugs and, in partnership with researchers at the University of Leicester, develop a piloting system.

Dr **Nicola Baresi**, Lecturer in Astrodynamics at the University's Surrey Space Centre and project co-Investigator, added:

"PLATOR will increase the options available to mission planners and could be particularly useful when the UK develops its own launch capability. UK launches will only be able to reach high-inclination orbits, but our proposed space tugs could hopefully expand their reach, opening the door to new and exciting mission opportunities from the UK soil"

Surrey Space Centre is where the era of small, low-cost satellites began with the successful spin-out company SSTL. Today, Surrey Space Centre is a world-leading academic centre of excellence for space engineering research and education which regularly leads on experimental orbital payloads. Surrey Space Centre is globally renowned for its Space Engineering education courses at Masters and Undergraduate level. It is part of the Space South Central regional cluster.

The PLATOR project will make the most of the advanced vacuum facilities and instrumentation in the Space Propulsion Laboratory at Surrey Space Centre.

Image: An artist's impression of PLATOR: Oliver Hitchens, University of Surrey.

Surrey University Press Office