Space technology comes down to earth in new agricultural device

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Finlay Harris (left) and Giacomo Corvi are students gaining research experience by working on the AgriRover project, with the AgriRover device. Credit: University of Strathclyde

Space technology is to be put to work on Earth - in a device for testing soil quality, in research involving the University of Strathclyde.

The agricultural monitoring system, consisting of a mobile rover platform with a robotic arm which carries a soil sensing instrument, will be based on technology previously developed for use in exploration on Mars.

The Strathclyde researchers, working with partners in the UK and China, will demonstrate in trials the feasibility of the device's agricultural operation by using an integrated, force feedback-controlled robotic system on the ground during the project.

The project for the device, known as the AgriRover, is funded through the UK Space Agency's International Partnerships Space Programme (IPSP).

Professor Xiu Yan, of Strathclyde's Space Mechatronic Systems Technology Laboratory (SMeSTech), in the Department of Design, Manufacture and Engineering Management, is the Principal Investigator in the research. He said: "Advanced machinery has been used in agriculture worldwide for centuries but a range of factors are making innovation in this area more important than ever, including environmental considerations, demographic changes, urbanisation, sustainable farming, increasing competition and the need to provide food for a rapidly growing global population.

"Robotic technology will be a key technological enabler for precision farming and this project is a combination of frontier research programmes in space robotic technologies. It focuses on a unique soil sensing technology, developed and built with UK capability; it's also based on space instrumentation and the deployment of a UK-developed, intuitive master robotic control system.

"By harnessing space technology for a new application in farming, and engaging in a valuable research collaboration with China, this project

will deliver many benefits around the world."

Provided by University of Strathclyde, Glasgow