



MEDIA RELEASE

SPIRIT Successfully Demonstrates Australian Propulsion Technology

Australia, 21 August 2024 - Neumann Space and the University of Melbourne today announced successful completion of the first in a series of on-orbit tests of the Neumann Drive[®], a novel electric propulsion system based on solid metal propellants, and one of a number of Australian-made space technologies integrated onto SPIRIT nanosatellite launched in December last year.

The Space Industry Responsive Intelligent Thermal nanosatellite (SPIRIT for short) mission was developed by a consortium led by the University of Melbourne in cooperation with the Italian Space Agency and with funding from the Australian Space Agency. Neumann Space, an Australian-based space technology company focused on delivering superior mobility in space, and the developer of the Neumann Drive[®] is one of the founding members of the consortium.

This month, SPIRIT was able to demonstrate charging of the Neumann Drive[®]'s power capacitors by the nanosatellite's solar panels and batteries, and conduct several test firings, successfully demonstrating the ability to use Molybdenum as a solid metallic propellant.

The Neumann Drive[®] is an important new form of space propulsion available to spacecraft. It brings together the use of solid metal propellant with a simple design that enables mobility in space on demand, seamless integration into satellites, enhanced safety, and has created the unique capability of being able to be transported and stored with a full load of fuel.

The SPIRIT nanosatellite has been operating in orbit approximately 500km above Earth since its launch on 1 December 2023, during which time the consortium has worked to perform numerous diagnostic tests to validate the system's electronics and in doing so confirm the resilience of the Neumann Drive[®] to the challenging launch and orbital environments. A comprehensive Neumann Drive[®] testing campaign will continue for the remaining of the two-year SPIRIT mission, with the goal of establishing for the first time the long-term characterisation of the system in orbit.

University of Melbourne Professor Michele Trenti, SPIRIT mission Principal Investigator, said: "The SPIRIT mission office is thrilled about the successful test fire of the Neumann Drive[®], one of the major mission objectives. All SPIRIT payloads have now been operated in orbit. It's a fantastic achievement given how hard space is and their experimental nature. We are very proud of the team and collaboration."

Neumann Space's CEO, Herve Astier, said: "There is nothing like proving what you can do in space. Demonstrating our technology in the space environment is not only rewarding but important to delivering assurance and confidence to the global small satellite industry. We are pleased to be a part

of SpIRIT, and to collaborate with all of our partners to continue to prove the capability of the Neumann Drive® as part of our work towards delivering superior mobility in Space.”

Head of the Australian Space Agency, Enrico Palermo, said: “SpIRIT is a showcase of Australian space innovation as illustrated by the successful on-orbit test of the Neumann Drive®. The Agency congratulates Neumann Space and the SpIRIT team on this milestone, and we’re proud that our investment in this science mission continues to boost Australia’s space heritage.”

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About SpIRIT

The SpIRIT (Space Industry – Responsive – Intelligent – Thermal) nanosatellite is an Australia-Italy mission supported in Australia by the Australian Space Agency’s International Space Investment – Expand Capability scheme. SpIRIT aims to grow Australian space industry capabilities through the development of an innovative nanosatellite which will break new ground in high-performance autonomous operations, communications, propulsion and thermal management. SpIRIT is also the first made-in-Australia spacecraft to host a foreign space agency’s scientific instrument as its main payload, showcasing the competitiveness of Australia’s space industry, and growing international cooperation in astronomy and space science with the Italian Space Agency. <https://spirit.research.unimelb.edu.au/>

About Neumann Space

Neumann space is an Australian owned company whose mission is to enable the sustainable economic development of space. To achieve that the company is focused on delivering superior mobility in space through the development of products using a unique leading technology with solid metallic propellants for in-space electronic propulsion and the commercialisation of those products for satellites and spacecraft. More information: neumannspace.com

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