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Aethera's New RF Power Processing Unit for the VASIMR® Engine Completes Full Power Acceptance Tests at Ad Astra Rocket Company's Texas Facility.

[Webster, Texas USA and Halifax, NS, Canada] – For Immediate Release – A new generation radio-frequency (RF) Power Processing Unit (PPU) for the VASIMR® engine, built by Aethera Technologies Ltd. of Canada, has completed a series of full power acceptance tests at Ad Astra Rocket Company's Texas facility near Houston. The unit completed these tests on August 12 by operating in a thermal steady-state with no anomalies at its full power rating of 120 kW. The RF PPU is now ready to be incorporated into Ad Astra's vacuum facility so that it can be tested with the VX-200SS™ VASIMR® prototype. These tests are part of Ad Astra's ongoing program under the NASA NextSTEP partnership contract.

The RF PPU is a critical component of the VASIMR® engine, providing the RF energy needed to efficiently ionize and heat the argon propellant in the rocket. The resulting high temperature plasma is accelerated in the magnetic nozzle to provide thrust.

Aethera has developed an RF PPU with >97% electrical-to-RF power efficiency, using advanced semiconductors and incorporating the capability to operate in vacuum and in close proximity to the VASIMR® engine's magnetic field. In addition, at 52 kg, the new VASIMR® RF PPU is about 10x lighter than the PPU's of competing electric thrusters.

The development of the RF PPU is being supported by Ad Astra Rocket Company, and The Canadian Space Agency (CSA). CSA's support is part of a contribution agreement under the Space Technology and Development Program (STDP) announced by the CSA on May 25, 2018. The CSA funding contribution highlights Canada's long-term view regarding the importance of high-power electric propulsion in humanity's gradual evolution beyond low Earth orbit (LEO) and gives the project an added international flavor.

"We are extremely pleased with the results of these tests," said Dr. Franklin R. Chang Díaz, CEO of Ad-Astra Rocket Company. "The Aethera and Ad Astra teams have worked very hard and very well together to achieve this important milestone, and we look forward to the road ahead with excitement and optimism," he added.

"We are extremely pleased to be a part of the VASIMR® team and to have the opportunity to develop state-of-the-art equipment for the space industry" expressed Tim Hardy, Chief Technology Officer at Aethera. "The new RF PPU full power testing is an extremely positive result on the way to achieving a flight qualified rocket" he added.

ABOUT THE TECHNOLOGY

Short for Variable Specific Impulse Magnetoplasma Rocket, VASIMR® works with plasma, an electrically charged gas that can be heated to extreme temperatures and controlled and guided by strong magnetic fields, which also provide insulation. Plasma rockets, such as VASIMR®, have an extremely low fuel consumption and much higher performance as compared with conventional chemical propulsion or other electric rockets. They will provide a major economic and operational advantage in space commerce, including satellite deployment, re-boost services, refurbishment and end-of-life disposal. In the longer term, with an appropriate nuclear-electric power source, VASIMR® would provide much faster and safer human and robotic transportation in deep-space where solar power is insufficient.

ABOUT AD-ASTRA

A US Delaware corporation established in 2005, Ad Astra Rocket Company is the developer of the VASIMR® engine, an advanced plasma propulsion system for the emerging in-space transportation market. Ad Astra also owns and operates supporting R&D subsidiaries in the US and Costa Rica. The company also develops earthbound high-technology applications in renewable energy and hydrogen-based fuel-cell electric transportation, as well as advanced manufacturing and applied physics. Ad Astra has its main laboratory and corporate headquarters at 141 W. Bay Area Boulevard in Webster, Texas, USA, about three miles from the NASA Johnson Space Center.

ABOUT AETHERA

Located in Halifax, N.S., Aethera Technologies Limited develops innovative technology and provides related services for its clients with a focus on Radio Frequency (RF) power for aerospace, communications, scientific and industrial applications including dielectric heating. Aethera is committed to transforming ideas into a competitive advantage for our clients.

ABOUT CSA's SPACE TECHNOLOGY DEVELOPMENT PROGRAM

The CSA's Space Technology Development Program (STDP) supports innovation for the growth of the Canadian space industry and to reduce technological unknowns. Contracts are issued to Canadian organizations for the development of technologies to support future needs of the Canadian Space Program, while non-repayable contributions are awarded to Canadian organizations to support the development of innovative technologies with strong commercial potential.