# Momentus to Deliver 3U Nanosatellite for Singapore's NuSpace and Aliena in 2021

Two Singaporean newspace startups will rely on Santa Clara-based, in-space transportation provider for their NuX-1 demonstration satellite

February 6, 2020 – Santa Clara, CA / Singapore -- Momentus (www.momentus.space), provider of in-space transportation services for satellites, today announced a launch service agreement with Singapore-based companies, NuSpace and Aliena. Momentus' Vigoride orbital transfer vehicle will carry the NuX-1 3U nanosatellite to its final orbit, after launching onboard a SpaceX Falcon 9 rocket from Vandenberg, California during the first quarter of 2021.

NuX-1 is a demonstration satellite recently announced by NuSpace in partnership with Aliena. It will demonstrate autonomous orbit control maneuvers using Aliena's ultra-low power miniature Hall-thruster – a first for CubeSats of that size – as well as NuSpace's Attitude Determination & Control Systems (ADCS) that comes equipped with an autonomous orbit control system. The nanosatellite will also carry an Internet-of-Things (IoT) payload for NuSpace and constitute the pathfinder for NuSpace's planned IoT constellation.

"Singapore being a small country with limited resources, it is all the more important for entities like NuSpace and Aliena to aggregate efforts to further advance the space industry in Singapore. NuSpace and Aliena are excited about their partnership and demonstration mission, NuX-1, and we hope to collaborate with more entities in time to come - as illustrated with our selection of Momentus for deploying our first satellite to orbit", said Mark Lim, CEO of Aliena.

Zhen Ning, CEO of NuSpace, added: "I believe that this partnership is just the beginning of greater things to come for NuSpace and Aliena. It demonstrates that Singapore, albeit being a small nation, has local talents and capabilities to support a space industry that through collaborative initiatives will allow the local space sector to thrive.The extended partnership with Momentus is very important for NuSpace as it demonstrates our capabilities to innovate with international partners and create truly unique commercial solutions."

"We are honored to be carrying out the orbital placement of the very first satellite for two innovative startups from the burgeoning Singaporean newspace industry," said Mikhail Kokorich, CEO of Momentus. "We trust this is a foundational step toward future partnerships with local space companies who, like Momentus, are pushing the limits of technology and exploring uncharted territories."

Zhen Ning further elaborated on the reasons for choosing Momentus: "The solution offered by Momentus is attractive as it is able to provide orbit phasing for constellations that are launched from a single rocket. This is especially useful for us as it reduces the propulsion requirements on

our satellites, allowing us to reduce the amount of propellant to carry and hence pack more useful payloads & features into each satellite. This tripartite agreement between Momentus, Aliena and NuSpace for NuX-1 is a great example demonstrating how coming together allows us to deliver satellites that are more effective. We believe that this first launch service agreement with Momentus will pave the way for greater levels of collaboration in time to come."

"From Aliena's point of view, most of our customers are constellation operators - or look to run applications that acquire data from a fleet of satellites managed by Aliena. To that note, the solution offered by Momentus provides an accelerated way to rapidly populate and operationalize constellation services while reducing fuel requirements onboard miniature platforms, hence allowing users to dedicate more real-estate for in-orbit operations, as well as to better utilize onboard fuel for advanced manoeuvres", said Mark Lim. "We too believe that this working relationship with NuSpace and Momentus will serve as a springboard to better serve the needs of the International Commercial Space community in the days to follow."

"We have been working closely with Aliena and NuSpace on several projects and their partnership is a testament to how Singapore's spacetech companies are leveraging on their strengths to grow together," says Mr Jonathan Hung, president of the Singapore Space and Technology Association (SSTA), the country's leading business association for the sector. "That, coupled with this being Momentus' first launch contract from Singapore, it is yet another milestone for the space ecosystem."

A graduate of the prestigious Y Combinator program, and based in Santa Clara, California, Momentus raised $40M of equity funding, including a $25.5MM Series A in 2019. Momentus employs new and proprietary technologies, including water plasma propulsion to enable revolutionary and affordable orbital shuttle services. A 16U demonstration mission, "El Camino Real", was launched and tested in 2019. Two demo missions of the Vigoride transfer vehicle will fly in 2020, paving the way for quarterly commercial missions from 2021 onward.

NuSpace and Aliena are spin-offs from research done respectively by the National University of Singapore (NUS) and the Nanyang Technological University (NTU). Together, they aim to address the upcoming demand for large smallsat constellations, providing an integrated smallsat solution that is able to perform autonomous orbit maintenance. NuSpace plans to roll out an IoT constellation of nanosatellites covering the equatorial belt first, before expanding to global coverage. Aliena will provide turn-key, compact and low power electric propulsion solutions for small and nano satellites that serve a plethora of services and applications.

**About Momentus**

Momentus is the first company providing in-space transportation services for satellites. The company was founded in 2017 in Santa Clara, CA. Momentus designs and builds transfer vehicles propelled by proprietary water plasma thrusters. The vehicles ferry satellites to a

custom orbit after they are delivered by conventional rockets to their initial orbit. Momentus is a 60 person team and growing rapidly. Momentus will start commercial services in 2021 with Vigoride and will progressively introduce a whole family of spacecraft with expanded capabilities.

For more information and a list of job openings, please visit us at
http://www.momentus.space/careers