Release

ispace, inc.

ispace Begins Final Assembly of Lunar Lander Flight Model Ahead of First Mission

Following successful completion of key environmental tests in Japan, final assembly is underway in Germany

Tokyo, Japan, July 14 – Today, ispace announced that it began the assembly of the flight model for its lunar lander, which is to be used in the company's first mission scheduled to launch in 2022[i]. This is a major engineering milestone in the development of the lander and part of the final stretch toward our first mission.

Prior to this announcement, the most recent major status update about the lander's development came in late July 2020, when ispace revealed the final design of its lander around the timing of its critical design review (CDR)[ii]. Since that time, ispace engineers have completed key environmental testing in Japan using test models of the lunar lander, most recently its structural thermal model (STM). The assembly of the STM was performed in April of this year at a Japan Airlines facility near Narita International Airport before undergoing vibration, acoustics, and thermal vacuum tests at a facility near Tokyo. The lander passed all environmental tests with no significant problems or delay.

From this point forward, the final assembly of the flight model lander will be carried out in cooperation with Ariane Group GmbH at an Ariane Group facility in Lampoldshausen, Germany. Engineers from ispace have been working at the facility alongside Ariane Group personnel since early June 2021 and the first major structural assembly is slated for completion by the end of July 2021. Assembly and integration of payloads are scheduled to be completed by year end, with final testing of the flight model scheduled for the start of the next year. Following final testing, the lander flight model will be shipped from Germany to the United States for launch in the second half of 2022[iii].

HAKUTO-R Program Updates

This first mission by ispace is part of the company's commercial lunar exploration program known as HAKUTO-R, which consists of ispace's first two lunar missions. Today, ispace also shared updates about two of HAKUTO-R's Corporate Partners:

- NGK Spark Plug, which is aiming to conduct the first test of solid-state battery technology on the Moon[iv], successfully completed environmental testing of an engineering model of its battery payload.
- Citizen Watch, which is supplying processed titanium material to be used in the lander's legs, unveiled two limited edition watches designed in collaboration with the HAKUTO-R program[v].

Strong Progress in 2020-2021

Despite setbacks caused by the COVID-19 pandemic—such as delays in the supply chain, personnel limits at testing facilities, remote work communications, travel restrictions, and other issues—ispace's engineers were steadfast in their operations and managed to remain on schedule. In addition to the successful completion of the environmental tests, ispace also raised approximately $33.1 million[vi] (USD) in its Series B funding round and $17.9 million (USD) in bank loans; was awarded two contracts by NASA for the collection and sale of lunar resources; and, signed contracts with several customers for the transportation of payloads to the lunar surface, including lunar rovers for two government space agencies.

Full Payload Manifest for Mission 1

The lander for Mission 1 has a full payload manifest. The planned payloads for this mission include:

- Solid-state battery test module by NGK Spark Plug
- Rashid lunar rover by the Mohammed bin Rashid Space Centre (MBRSC)[vii]
- Transformable lunar robot by the Japan Aerospace Exploration Agency (JAXA)[viii]

- AI flight computer by Mission Control Space Services, which will collaborate with the Rashid rover[ix]
- Multiple cameras by Canadensys[x]
- Panels engraved with the names of HAKUTO[xi] crowdfunding supporters

Payload capacity is still available for customers to utilize on ispace's Mission 2 lander and several discussions for transportation services are actively ongoing.

■ **Takeshi Hakamada, Founder & CEO, ispace:** "Our strength is that ispace utilizes the best resources in the world. Experienced members from 25 countries around the world have joined ispace and, as a result of their skill and capabilities, we have managed to remain on schedule through the challenges of the past year. We are also utilizing external resources, such as those provided by ArianeGroup, to further enhance our ability to execute our mission. Through the HAKUTO-R partnership program, we are working to expand opportunities with partner companies. As we move toward the final assembly of our lander, we move closer to finally achieving our goal of landing on the Moon. Even if new challenges arise, we will overcome them, one by one, and show the world a bright future as a pioneer."

■ **About ispace, inc. (https://ispace-inc.com/)**
ispace is a lunar exploration company with over 150 staff and offices in Japan, Europe and the United States. The company is building a small commercial lunar lander, which aims to provide a high-frequency, low-cost delivery service to the Moon, as well as a lunar rover for surface exploration. Aspiring to be a gateway for private sector companies to bring their business to the Moon, ispace has also launched a lunar data business concept to support companies with lunar market entry. The company's first lunar mission is planned for 2022[xii] with a second mission planned for 2023[xiii]. On its first mission, ispace's lander will deliver payloads for the Mohammed bin Rashid Space Centre (MBRSC), The Japan Aerospace Exploration Agency (JAXA), and three companies that received awards as part of the Canadian Space Agency's (CSA) About the Lunar Exploration Accelerator Program (LEAP) program. The lander for the first mission is currently undergoing final assembly at an ArianeGroup facility in Germany and will launch from the United States on a SpaceX Falcon 9 rocket. ispace is also part of a team led by Draper, which was selected by NASA to compete in its Commercial Lunar Payload Services (CLPS) Program. Both ispace, inc., and ispace EU were awarded contracts to collect and transfer ownership of lunar regolith to NASA, and ispace EU was selected by the European Space Agency (ESA) to be part of the Science Team for PROSPECT, a program which seeks to extract water on the Moon.

■ **About HAKUTO-R (https://ispace-inc.com/hakuto-r/)**
HAKUTO-R is a multinational commercial lunar exploration program operated by ispace. It includes ispace's first two lunar missions: Mission 1, a soft lunar landing planned to launch in 2022[xiv], and Mission 2, a lunar landing and deployment of a rover planned to launch in 2023[xv]. For both missions, the HAKUTO-R lander is planned to launch on SpaceX's Falcon 9 rocket. The program aspires to lay the groundwork for high-frequency lunar transportation. Corporate Partners of HAKUTO-R include Japan Airlines, Suzuki Motors, Citizen Watch, Mitsui Sumitomo Insurance, NGK Spark Plug, Takasago Thermal Engineering, Sumitomo Corporation, Sumitomo Mitsui Banking Corporation and SMBC Nikko Securities Inc. Media Partners for HAKUTO-R include TBS, Asahi Shimbun, and Shogakukan.

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[i] Current plan as of July 2021.
[ii] Commercial Lunar Exploration Program "HAKUTO-R" Reveals Final Design and Plan for 'Mission 1' Lunar Lander; Jul 30, 2020.
[iii] Current plan as of July 2021.
[iv] NGK SPARK PLUG & HAKUTO-R Aim to Test Solid-State Battery Technology on the Moon in 2021; Feb 22, 2019.
[v] Citizen Releases New Watch Model in Collaboration with the HAKUTO-R Lunar Exploration Program; June 16, 2021.
[vi] Actual figure is JPY 3.5 billion; JPY to USD conversion provided for reference purposes, using the exchange rate for the 1-month period average of the TTM rate as of August 17, 2020 and December 23, 2020. In addition, ispace financed 17.9MM USD in Bank Loans (1-month average of TTM rate on April 2021); June 8, 2021.
[vii] MBRSC Teams Up with Japan's ispace on Emirates Lunar Mission; April 14, 2021.

[viii] ispace to Transport JAXA's Transformable Lunar Robot Payload to the Moon, Conduct Operations and Provide Lunar Data; May 27, 2021
[ix] ispace to Transport Canadian AI Technology to the Moon; May 27, 2021.
[x] ispace is in the process of finalizing contracts.
[xi] Managed by ispace, Team HAKUTO was one of the five finalists of the Google Lunar XPRIZE competition.
[xii] Current plan as of July 2021.
[xiii] Current plan as of July 2021.
[xiv] Current plan as of July 2021.
[xv] Current plan as of July 2021.