



EXCLUSIVE INTERVIEW

Reach for the stars

James Yenbamroong, founder of mu Space, talks about the first space-tech mover in Asean, writes **Komsan Tortermvasana**

Stargazing at night may be relaxing for many people, but mu Space and Advanced Technology, a Thailand-based satellite and space tech firm, is hard at work, conceiving of business opportunities in space that could emerge in the years to come.

mu Space, established in 2017 with registered capital of 105 million baht, is regarded as the first space-tech mover in Asean.

It aims to become a unicorn startup by 2023 and be listed on the Stock Exchange of Thailand in five years, when its value possibly reaches 60 billion baht.

James Yenbamroong, chief executive and founder of mu Space, told the *Bangkok Post* the company is exploring satellite business opportunities, especially ground station development, gateway systems, data centre constellation and digital platforms for space technology in relation to low-Earth orbit (LEO) satellites.

Through collaboration with state telecom enterprise TOT, mu Space succeeded in launching server payload into space with Blue Origin's rocket from Texas, in the US, on Oct 13.

The payload includes a web server, an Internet of Things platform and big data devices.

The partnership deal with TOT is a strategic move, Mr James said, as each party has a unique business strength that could drive innovation under the space internet data centre concept.

SPACE TECH

The 36-year-old chief executive said by 2030, the cost of space transport by spaceship could be on par with that of current commercial flights, or around US\$500 per kilogramme. It could drop further as time passes.

He predicts by 2025 electric planes could be used for commercial flights that fly to space.

This technology would be quieter for airports with shorter runways, while battery-powered planes support clean energy, Mr James said.

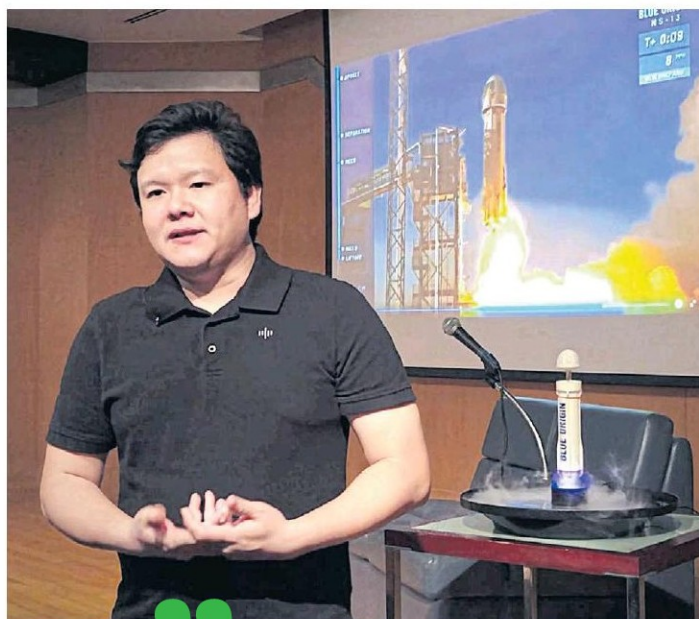
"Earth-to-earth space transport by electric planes would shorten travel time — by tens of times faster than today. This could be ready for passengers by 2030," he said.

An electric aircraft is a plane powered by electric motors.

Electricity may be supplied by a variety of methods including batteries, ground power cables, solar cells, ultracapacitors, fuel cells and power beaming.

Small, electrically powered model aircraft have been flown since the 1970s, with one unconfirmed report as early as 1957. They have since developed into small unmanned aerial vehicles or drones, which in the 21st century have become widely used for many purposes.

According to Mr James, mu Space's ultimate goal is to address resource depletion and overpopulation by building colonies and factories on the Moon to secure new resources.



The smart factory will be built to support R&D and make future products, such as satellite parts, autonomous robots and batteries.

JAMES YENBAMROONG
CHIEF EXECUTIVE, MU SPACE

The company also has links with its US-registered space manufacturing firm, mu Space LLC.

mu Space LLC, wholly owned by Mr James, has participated in the bidding for several study projects of NASA, the independent agency of the US government for space programmes.

The projects include energy storage, computer chipsets for electric planes, silicon nano batteries, wireless connected ports as well as power generation in space.

If the company wins the bids, it will obtain the intellectual property rights of these developed technologies.

FUTURE TARGET

mu Space is in the process of raising US\$25 million (778 million baht) in Series B funding, expected to be completed by the end of this year, which could elevate the company's valuation to more than \$100 million.

TOT is committed to investing 100 million baht in the funding round after the state telecom enterprise signed a memorandum of understanding for collaboration with mu Space in September.

Money raised will be used to build a medium-sized smart factory to develop space technology, including satellites, automation systems and robots.

Construction of this factory, planned to be

situated in the Eastern Economic Corridor, will begin in the second quarter of next year.

Innovations pushed through by this factory will be put in service in the future and the technologies are expected to spur investment and employment of thousands of highly paid workers to meet demand in the fast-growing space technology industry, Mr James said.

"The smart factory will be built to support R&D and make future products, such as satellite parts, autonomous robots and batteries," he said.

The company also aims to enlarge its Bangkok-based factory to a size of 10,000 square metres, said Mr James.

Money raised in the Series B funding will also be used to fund the development of a high-throughput satellite — the latest version of broadband internet satellite.

Components of the satellite will be developed by mu Space's engineers, he said.

The satellite, which has the capacity to provide a data transfer rate of 32.5 gigabits per second, will be deployed to provide commercial broadband internet services in Thailand and Asia-Pacific.

Construction is expected to begin in 2023.

Around 10 enterprise customers have expressed interest in renting the satellite's transponders.

Through collaboration with TOT, mu Space is gearing up for satellite tech development, including those involved with LEO satellites.

Both companies aim to establish a gateway system, data centre constellation and digital platform for space tech in relation to LEO satellites.

LEO satellites could help expand signal transmission in remote areas where telecom infrastructure installation is difficult.

"We are the first mover in Asean in this regard and we aim to be the leader of the space tech business," said Mr James.

In 2018, mu Space made great strides by sending its first payload from Asia on New Shepard space vehicle.

The firm's major investors include Prasop Jirawatwong, owner of Nice Group, a sports apparel manufacturer for Nike and Adidas; and Singapore-headquartered venture capital fund Majuven.

Several existing investors are committed to contributing more to the funding round.

After Series B funding, the company's value is expected to surpass \$100 million, with its investors possibly increasing from nine to more than 20.

The company aims to seek Series C funding in the second quarter of 2021, hoping to raise up to 3 billion baht.

mu Space has about 100 employees, including 30 core strategic staff.

The number is expected to surge to 200 next year and 1,000 by 2025.

"With 1,000 employees, they would be in charge of 3,000 robots," said Mr James.