

NTU, Fusic Partner on AI-Driven Satellite Management

Image: Mr Lim Wee Seng (left), Executive Director, NTU Satellite Research Centre; with Mr Sadayoshi Noutomi, President and CEO of Fusic Co., Ltd. (right) on stage at the SPACETIDE 2026 in Tokyo, Japan.

Nanyang Technological



University, Singapore (NTU Singapore) and Japanese technology company Fusic Co., Ltd. are collaborating to explore the development of artificial intelligence-enabled ground systems that could help operators manage increasingly large and complex satellite constellations.

The collaboration will study how AI could assist ground-control teams

with routine satellite operations, mission scheduling, ground-station allocation and the early detection of technical problems.

These proposed systems can also be used to automate routine tasks with human oversight, helping operators respond more quickly and manage larger satellite fleets more efficiently.

The partnership aims to bring together NTU's satellite operations expertise with Fusic's capabilities in cloud computing, artificial intelligence and software engineering.

The NTU-Fusic Memorandum of Understanding was signed today, 6 July, at SPACETIDE 2026, a major space business conference held in Tokyo, as Singapore and Japan mark 60

years of diplomatic relations.

It was one of three key space-related agreements involving Singapore organisations during the conference, including a Memorandum of Cooperation between the National Space Agency of Singapore (NSAS) and the Japan Aerospace Exploration Agency (JAXA), and a Memorandum of Understanding between the Association of Aerospace Industries (Singapore) and the Society of Japanese Aerospace Companies.

Professor Christian Wolfrum, Deputy President and Provost of NTU Singapore, said: "As satellite constellations grow, the space sector will need new ways to manage missions safely, efficiently and at scale.

"Through this collaboration, NTU will combine its satellite mission experience and research capabilities with Fusic's expertise in AI, cloud computing and software engineering to explore how automated systems could support skilled operators in managing increasingly complex space operations. This partnership, led by its NTU Satellite Research Centre (SaRC), also reflects the University's commitment to translating research into solutions with industrial and wider societal value."

Mr Sadayoshi Noutomi, President and CEO of Fusic Co., Ltd., said: "The future of satellite operations will depend on intelligent and resilient software platforms that can manage growing volumes of information and increasingly complex missions.

"We are honoured to explore the possibilities of next-generation ground systems together with NTU SaRC, one of Asia's leading space research centres. By bringing together NTU's expertise in satellite development and operations with Fusic's capabilities in cloud

computing, AI and software engineering, we hope to contribute to the advancement of space utilisation and AI adoption across the Asia-Pacific region."

Preparing ground operations for larger satellite fleets

The number of satellites in orbit is expected to grow sharply. The European Space Agency stated in April 2025 that around 100,000 satellites are expected to be in orbit by 2030^[1].

As a result, ground teams are expected to manage more spacecraft, communications windows and operational data. Systems that rely heavily on operators carrying out routine tasks manually may become increasingly difficult to scale.

The NTU-Fusic collaboration will study how AI could support these teams by helping to schedule routine operations, allocate ground-station capacity, flag areas of alerts and analyse satellite data.

AI-enabled ground systems may also support space situational awareness by helping operators process large volumes of tracking and mission data across satellites and other orbital objects.

In later stages, specialised AI software agents could carry out selected routine tasks under human supervision, such as preparing operational instructions and coordinating communications windows.

The longer-term research vision is for several specialised AI agents to support different parts of constellation operations, while human operators continue to oversee safety, regulatory compliance and mission assurance.

Supporting stronger Singapore-Japan space cooperation

Singapore and Japan upgraded their relationship to a Strategic Partnership in March 2026, with both sides agreeing to deepen cooperation in areas including AI, automation, deep technology and secure digital systems.

The project could also help bring Singapore's satellite developers and operators into closer collaboration with space companies and research organisations in Japan and the wider Asian region.

Spokesperson, National Space Agency of Singapore, said: "This collaboration between NTU and Fusic reflects the growing breadth of cooperation between Singapore and Japan. Partnerships such as this bring together complementary expertise from both ecosystems to develop next-generation space capabilities. NSAS looks forward to more collaborations that advance both Singapore and Japan's shared ambitions in space."

His Excellency Mr Hiroshi Ishikawa, Ambassador Extraordinary and Plenipotentiary of Japan to Singapore, said: "Today, in this milestone year marking the 60th anniversary of the establishment of diplomatic relations between Japan and Singapore, I am delighted that Fusic, a Japanese technology company, and the NTU SaRC, have signed a Memorandum of Understanding (MoU) to advance their cooperation toward the realisation of next-generation satellite ground stations.

"In March of this year, Japan and Singapore established a Strategic Partnership. As the importance of the space sector continues to grow, the two countries will further expand cooperation in this field under this partnership. The initiative by Fusic and NTU SaRC is one

example of this expanding cooperation, and I am confident that it will contribute to the advancement of the space sector and the growth of the space industry."

The joint research will consider operational requirements, including cybersecurity, system resilience, regulatory compliance and clear records of how AI-supported decisions are made.

Technologies developed through the partnership could eventually support commercial satellite operators in Singapore, Japan and other Asian markets.

Combining satellite and software expertise

NTU SaRC is the birthplace of Singapore's space and satellite programmes, and a national pioneer in space technology research and development.

Since the launch of X-SAT, Singapore's first locally built satellite, in 2011, the centre has designed, built, tested and operated 13 satellites, building end-to-end capabilities from spacecraft engineering and launch preparation to in-orbit operations and mission control.

A leader in space innovations, SaRC has also helped translate space technologies into deep-tech companies, including NTU spin-offs Zero-Error Systems, which develops radiation-hardened semiconductor solutions for space electronics, and Aliena, which develops electric propulsion systems for small satellites. Both companies have attracted multimillion-dollar funding.

It has worked with industry partners to demonstrate space technology applications and collaborated with Japan's universities, such as the Kyushu Institute of Technology, on satellite missions deployed through JAXA.

Currently, SaRC operates a ground station with automated mission-control capabilities. It will contribute operational data and mission experience, as well as research expertise in AI, autonomous systems and space engineering.

Fusic, based in Fukuoka, Japan, develops systems using cloud computing, AI, machine learning and Internet of Things technologies, and has worked on satellite ground systems and space-related software.

Under the collaboration, the partners plan to test software concepts using realistic mission scenarios. Future NTU satellite missions could provide opportunities to validate selected technologies, subject to technical, safety and regulatory requirements.

[1] Source: European Space Agency, "[Around 100 000 satellites are expected to be in orbit by 2030](#)", 1 April 2025. Still frame from ESA's documentary film Space Debris: Is it a Crisis?