

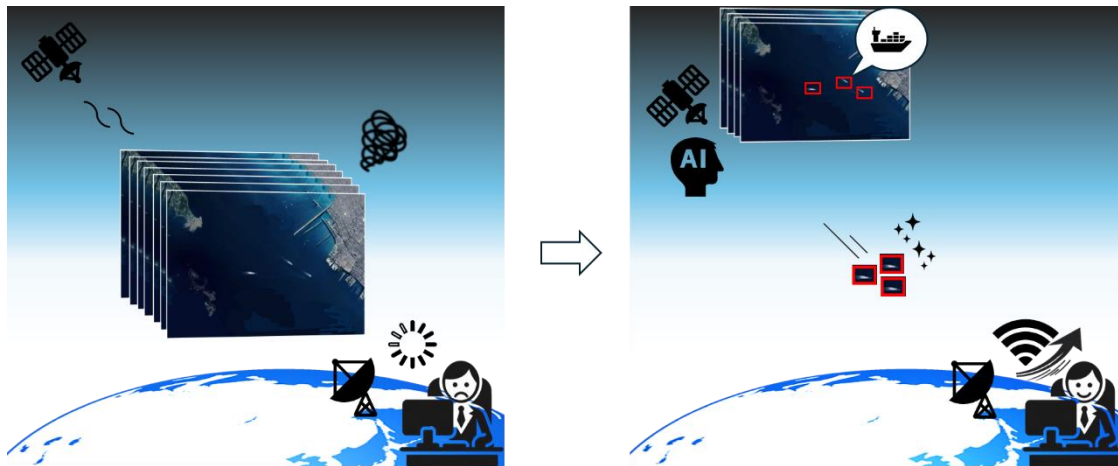
Space Compass's Orbital AI Software Successfully Demonstrates Deriving Real-time Earth Observation Insights in Collaboration with Microsoft

Tokyo, Japan, April 14, 2025 Space Compass Corporation is pleased to announce that it has successfully performed in-orbit ship detection processing using AI technology and has demonstrated reduction in more than 98% of the data volume downlinked to the ground. This project was conducted in collaboration with Microsoft.

This initiative is performed under the strategic alliance between NTT and Microsoft that launched in 2019^{*1}. By demonstrating the ability to process image data captured by observation satellites directly in orbit, Space Compass aims to enable Realtime Earth Observation insights from space to address various social challenges.

What we demonstrated on orbit

Space Compass and Microsoft have established a co-engineering team to develop an AI application on the "Azure Orbital Space SDK (Software Development Kit) ", aiming to demonstrate how orbital AI works to enhance the value of Earth Observation data. Specifically, by using the rapid development capabilities of the SDK, Space Compass designed and implemented an application that operates in orbit using the general-purpose Python language in the Azure environment on the ground. This application was then transferred to computing resources on an earth observation satellite to demonstrate its functionality in orbit. On-orbit processing of observation data was performed more than 40 times during the three-month demonstration period. Based on the results of this demonstration, it was confirmed that the amount of data transferred to the ground could be reduced by 98.1% under certain conditions by using orbital AI processing to extract only the vessel information detected in the satellite images and delete unnecessary data. These results show that orbital AI can pave the way for more real-time Earth Observation insights, helping to address various social challenges such as security and natural disaster countermeasures.



Data Reduction by AI processing on orbit (Conceptual Illustration)

*1 Orbital Space Edge Computing Demonstration with Microsoft

<https://space-compass.com/news/sc20231251.html>

*2 Released on December 10, 2019: NTT and Microsoft agree on a strategic alliance to realize new digital solutions <https://group.ntt.jp/newsrelease/2019/12/10/191210a.html>

*3 By utilizing Microsoft's software development platform for outer space, the Azure Orbital Space SDK (Software Development Kit), we will realize everything from development to testing in a virtualized environment for computers, sensors, and communication devices on satellites in orbit. It will be possible to use satellite computers more seamlessly.

Message from Executives

"We are thrilled to share that SpaceCompass has successfully developed an AI application on the Microsoft Azure cloud platform and demonstrated orbital AI capabilities through collaboration with the Microsoft team. This marks a significant step toward achieving truly real-time Earth observation insights. We remain committed to advancing optical data relay and space edge computing services to address various social challenges and make the world a better place."

Shigehiro Hori, Co-CEO, Space Compass

"Microsoft is pleased to be working with Space Compass in exploring the uses of on-orbit processing, bringing AI insights to the edge in space. We look forward to collaborating and supporting Space Compass to achieve their vision for space relay and cloud connected data processing."

Yves Pitsch, General Manager, Microsoft



What's next

By combining the high-speed, large-capacity optical data relay service with the edge computing function of the optical relay satellite scheduled to be launched in the future as a service, we aim to realize a solution that can seamlessly utilize satellite data in real time and with a terrestrial cloud infrastructure. In order to accelerate the realization of Space Compass's vision of a unified space computing network, we plan to expand our partnership with Microsoft to a broader area of the space business and develop cutting-edge solutions.

About Space Compass

Space Compass is a joint venture company between NTT, Japanese Information and Communications Technology (ICT) leader, and SKY Perfect JSAT Corporation, Asia's largest satellite operator. We will launch a Space Integrated Computing Network to aid the realization of a sustainable society. For more information, visit our corporate website,

<https://space-compass.com/en/>

This project is one of the initiatives of space business brand under NTT Group's "NTT C89" and SKY Perfect JSAT's "JSAT".



<https://group.ntt.jp/aerospace>



<https://www.skyperfectjsat.space/jsat>