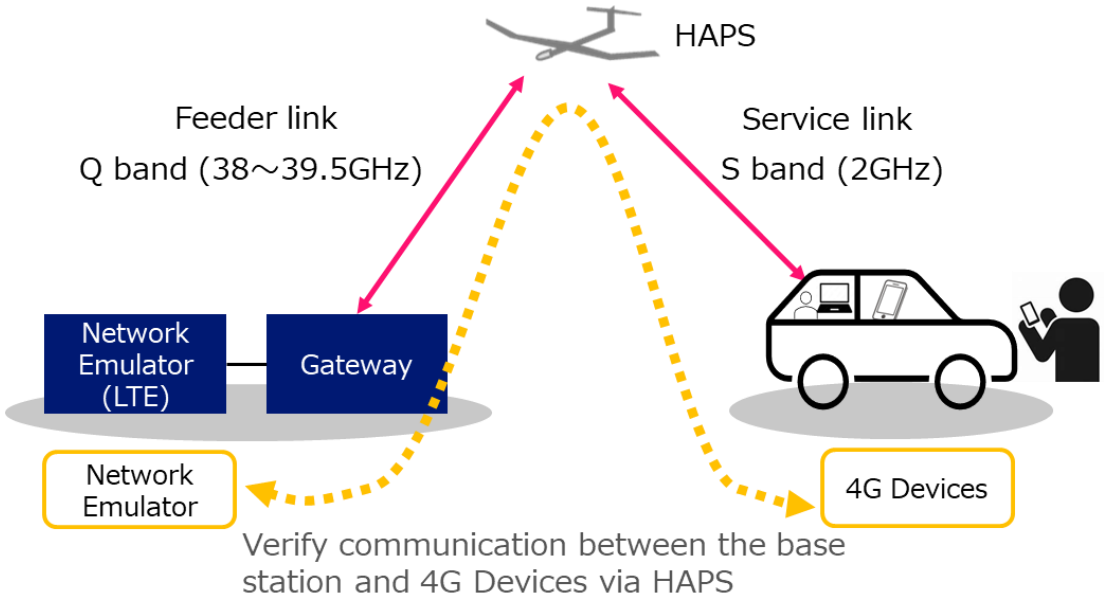
Space Compass and NTT DOCOMO Successfully Demonstrate Data Connectivity to 4G Devices via HAPS at 20 km Above Kenya

TOKYO, JAPAN, March 3, 2025— Space Compass and NTT DOCOMO, INC. jointly announced today that they have successfully completed data connectivity tests between the LTE base station and smartphones using high-altitude platform stations (HAPS, *1) from the stratosphere (altitudes of around 20km) in Laikipia County, Kenya.

In this test, a communication demonstration using LTE was carried out between the HAPS flying at altitudes around 20km and 4G device on the ground. The LTE base station was connected to the ground gateway station (*2), and a relay technology called non-regenerative relay (*3) was used to reflect the radio waves through the communication device mounted on the HAPS flying in the stratosphere and connected to the ground based 4G device on the ground. As a result, a throughput of more than 4.66 Mbps was observed during reception of the radio wave transmitted from the ground gateway station to the 4G device via HAPS (Forward Link).

The technology to stabilize the beam center to provide the connectivity coverage at a certain position toward a fixed point on the ground from the HAPS rotating in the stratosphere was implemented. Successful delivery of the reflected radio waves to the 4G equipment was confirmed at the test site in Kenya. This is the world's first successful establishment of wireless communication between a fixed-wing HAPS flying in the stratosphere at altitudes above 18 km and a smartphone on the ground.



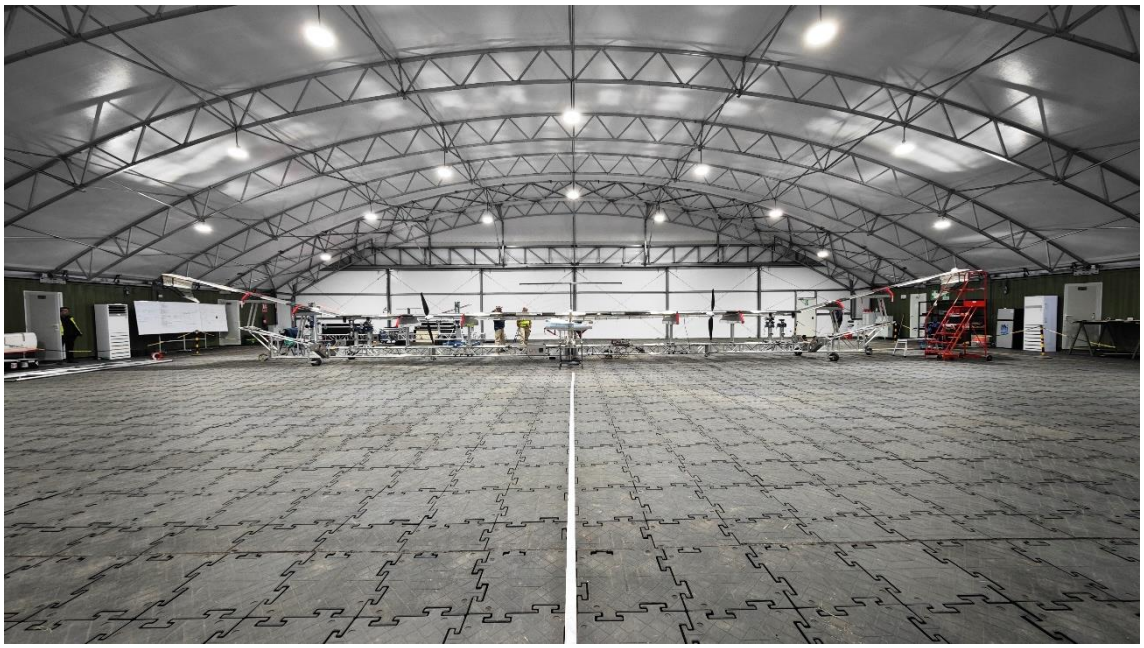
Overview of the 4G Device Direct Communication System via HAPS in the Demonstration

The fixed-wing HAPS aircraft Zephyr, which is designed, manufactured and operated by AALTO HAPS Limited ("AALTO"), a subsidiary of Airbus Defence and Space, was used for the testing. Zephyr has advanced aviation technology, having achieved a record for the longest flight of HAPS in 2022, with a continuous duration of 64 days.

Based on the results obtained through test activities, Space Compass and NTT DOCOMO will continue to work towards our HAPS service's targeted entry-into service in 2026, and research and develop a space-based radio access network (RAN) as an NTN, with HAPS serving as key components to support ultra-wide mobile communication services in air, sea and space.

The project is part of the Innovative ICT Fund Projects for Beyond 5G/6G, known as Beyond 5G, established by the National Institute of Information and Communications Technology (NICT), which envisions a society where connectivity is assured over the air, sea, and space regardless of user location. (JPJ012368C07702)

HAPS Landing



HAPS in Hangar

Ground Gateway Station

Tracking Status Check

Takaaki Sato, Senior Executive Vice President and Representative Member of the Board of Directors of NTT DOCOMO, said: "We are delighted about the successful connectivity test of HAPS in Kenya. This achievement marks a significant step forward in shaping the future of mobile communications. By combining long-duration stratospheric flights with DOCOMO's wireless

technology, we aim to not only enhance disaster response and expand coverage areas but also to accelerate the delivery of innovative HAPS services that offer unprecedented value."

Shigehiro Hori, Co-Chief Executive Officer of Space Compass Corporation, commented: "We are dedicated to working towards the commercialization of our HAPS service in 2026, and the success of this trial marks a significant step forward in achieving this goal. With this important milestone, we will continue to conduct testing and accelerate the development of our HAPS service. We are confident that the future of HAPS holds great potential, and we invite everyone to look forward to what's to come."

Hughes Boulnois, Chief Executive Officer of AALTO, said: "This connectivity demonstration is a world-first for HAPS that underpins the capabilities of Zephyr when operating in the stratosphere. Alongside NTT DOCOMO and Space Compass, we have created a strong and complementary partnership that will pave the way for commercial services to begin in the stratosphere from 2026. We are now working with our Japanese partners in accelerating the roadmap for our technology development and services, utilising Zephyr as a game-changing platform for connectivity and Earth observation."

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*1: Abbreviation for High-Altitude Platform Station. It refers to an unmanned aerial vehicle capable of flying in the stratosphere at an altitude of about 20 km for a few days to several months without landing. The platform is equipped with relay devices, and it can cover areas with a diameter of 100 to 200 km (depending on the design of the aircraft). This technology is being explored for areas that have been difficult to cover, such as the air and seas, as well as rural and mountainous regions where are not economically viable for coverage.

*2: A ground station which relays communication between the HAPS and the terrestrial communication network.

*3: A communication system where the base station equipment is installed on the ground rather than onboard the HAPS, and the communication device (payload) on the HAPS acts as a relay, reflecting signals received from the ground. In contrast, when base station equipment is installed on the HAPS, it is called a regenerative relay system.

About Space Compass Corporation

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".

NTT C89 https://group.ntt/en/aerospace

JSAT https://www.skyperfectjsat.space/jsat/en/

About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 90 million subscribers, is one of the global leaders in 3G, 4G and 5G mobile network technologies.

Under the slogan “Bridging Worlds for Wonder & Happiness,” DOCOMO is actively collaborating with global partners to expand its business scope from mobile services to comprehensive solutions, aiming to deliver unsurpassed value and drive innovation in technology and communications, ultimately to support positive change and advancement in global society.

https://www.docomo.ne.jp/english/