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China's first low-Earth-orbit broadband network tested at sea

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GalaxySpace, a private satellite maker in Beijing, has carried out sea-based tests to verify the capability of its Mini Spider Constellation, China's first low-orbit broadband internet network.

The company said in a news release sent to China Daily on Friday that the tests took place in

mid-June aboard the *CETC 1* comprehensive testing ship in the South China Sea and demonstrated the communication link between the Mini Spider Constellation and devices on the vessel.

During the tests, several satellites traveling in a low-Earth orbit relayed signals between the *CETC 1* and a ground station in Lingshui, Hainan province, with an average transmission speed of

260 megabits per second.

It was the first time the space-based system had connected with any ship on the high seas, GalaxySpace said.

Yang Bo, a project manager at GalaxySpace who took part in the tests, said the operations were intended to collect data and experience for low-orbit communications satellites' commercial use on the high seas. They also veri-

fied the performance of ship-based datalink instruments, he noted.

According to Yang, engineers optimized the company's rapid satellite-tracking algorithm by adding a sea wave-counteracting function to make sure that antennas on the sailing vessel could always be directed at the satellites and transmit data accurately.

The Mini Spider Constellation

consists of six satellites traveling in a low-Earth orbit at an altitude of about 500 kilometers. The satellites were launched in March last year from the Xichang Satellite Launch Center in Sichuan province.

Each of the six satellites weighs about 190 kilograms and has a large transmission capacity of 40 gigabits per second over multiple bands. In addition to communica-

tion payloads, the satellites are also equipped with remote-sensing devices capable of taking pictures and videos.

They have been working with GalaxySpace 1 — launched in January 2020 — to form an experimental communication network to verify broadband internet technologies.

In the near future, GalaxySpace aims to build a commercial satellite system in low-Earth orbit with global coverage that offers broadband internet and other communication services, the company said.