

1st high-throughput communications satellite launched



Shijian 13, China's most advanced communications satellite, is launched at the Xichang Satellite Launch Center in Sichuan Province on Wednesday.
[Photo/Xinhua]

A Chinese satellite will not only enable passengers of high-speed trains to watch high-definition videos more smoothly but also help those at the scene of natural disasters report emergencies.

Shijian-13, China's first high-throughput communications satellite, was launched from Xichang Satellite Launch Center in southwest China's Sichuan Province at 7:04 p.m. Wednesday.

The satellite, with a transfer capacity of 20 Gbps and a designed orbital life of 15 years, was sent into orbit on a Long March-3B carrier rocket.

The satellite, which has a higher message capacity than the combined capacity of all of China's previous communications satellites, is capable of providing better Internet access on planes and high-speed trains, as well as in less-

developed regions.

While in orbit, the satellite will undergo tests on its broadband multimedia satellite communications system and the high speed laser communication technology between the ground and the satellite.

“The launch is a milestone for China’s communications satellite technology,” said Tian Yulong, chief engineer of the State Administration of Science, Technology and Industry for National Defence.

Different from previous satellites fueled by chemicals, Shijian-13 is the first Chinese satellite to be powered by electricity.

Using electricity as propellant could potentially improve efficiency by as much as 10 times compared with those that use chemicals as a propellant, said Zhou Zhicheng, commander in chief of Shijian-13 satellite system, adding that it can also help extend satellite life and reduce launch weight significantly.

For the first time, a large number of domestic components have been used on the communications satellite. It is also the first time a laser communications system has been installed on a Chinese high orbit satellite with a long lifespan.

The satellite and the rocket were designed by academies affiliated with the China Aerospace Science and Technology Corp., and the China Academy of Launch Vehicle Technology respectively.

It was the 246th flight mission by a Long March carrier rocket.

[China customs in mammoth ivory tusk bust](#)

Customs authorities in northeast China’s Heilongjiang Province said Wednesday that they had seized more than 1 tonne of mammoth ivory smuggled from Russia.



The seized mammoth ivory is fossils of extinct species.
[Photo/Chinanews.com]

Luobei customs found 107 mammoth tusks, along with 37 woolly rhino horn parts and 1.11 tonnes of jade in secret compartments in a truck attempting to enter China through Luobei port in mid-February.

The driver of the truck fled after being informed that the truck, which claimed to carry soybeans, needed further examination. He and the owner of the goods were caught in a hotel later that month.

The owner, surnamed Han, had bought the truck and built secret compartments for smuggling. He was accused of smuggling goods under the country's criminal law.

Russia's Siberia region is a major source of mammoth tusks, a raw material for ivory-carving, which are usually uncovered by hunters when the tundra snow melts.

[China mulls security control on exporting key data](#)

Chinese citizens' personal information and the country's important data collected by Internet service providers may need evaluation and permission before being shared with non-domestic entities.

Such information should stay within China and be subject to security

assessment before being provided to anyone outside China, according to a draft guideline released Tuesday for public opinion by the Cyberspace Administration of China.

To export personal information the collector must get consent from the individual, the draft says.

For data related to national security, the economy or public interest, such as information on nuclear facilities, armed forces or public health, the collector should coordinate a security evaluation with the authorities.

The evaluation will ensure online data is managed legally, the guideline said.

To make suggestions on the draft, the public can email security@cac.gov.cn before May 11.

Tibet's airport able to accommodate large planes

Konggar Airport in Tibet, one of the highest-altitude airports in China, was able to accommodate a Tibet Airlines wide-body Airbus 330 aircraft overnight for the first time, the airline announced Wednesday.

The 3,600-meter-high airport in Lhasa was able to accommodate the plane after the airline's technicians solved the problem of re-starting the aircraft's engine in a low air pressure environment after an overnight stay.

A new oxygen diffusion device has been designed to increase air supply during the engine ignition process, the airline said.

High-altitude airports (over 2,438 meters above sea levels) pose safety issues for pilots as low air pressure affects flight performance. All five airports in Tibet are classified as such.

Chinese scientists build soft robotic fish

Chinese scientists from eastern China's Zhejiang Province have created a soft robotic fish with no motor and a fast speed.

"The robot is expected to be used underwater to record the temperature and salinity of the sea and detect pollutants," said Li Tiefeng, an associate professor at Zhejiang University.

The 9.3-centimeter-long fish weighs 90 grams and has an electric controller at the core, fins made of silicone, and a silicone body and tail. All components are transparent except for a small battery pack and two electromagnets.

"The soft and transparent body will make it easy for the robot to sneak through narrow reefs without being damaged or detected by other sea creatures," he said.

Instead of being powered by traditional rigid motors, the fish is built with artificial muscle, stimuli-responsive polymers that can bend or stretch under a cyclic voltage provided by the embedded lithium battery.

"Soft artificial muscle can respond quickly to electricity, meaning faster fin flapping and greater speed," Li said.

At top speed, the robot can swim six centimeters per second, beating the previous record for soft untethered underwater robots by three centimeters per second.

With a tethered exterior power supply, the fish can swim up to 14 centimeters per second, about the same speed as similar-sized fish.

"The materials used in the robot are common, cheap and environment friendly, with the potential to be produced on a large scale in China," Li said. "Our next step is to improve the efficiency of the artificial muscle and develop key techniques for mass production."

The findings were published in the academic journal *Scientific Advances* earlier this month.