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WEEKLY EDITION

## 2023 World 5G Convention to Be Held in Henan

By ZONG Shihan

The 2023 World 5G Convention, with the theme of "5G+, By All For All," will be held in Zhengzhou, capital city of Henan province, from December 6 to 8. The registration system of the website and WeChat account for the event has been officially launched.

The event, approved by the State Council, will be hosted by the Ministry of Science and Technology and the Henan Provincial People's Government. It will be organized by the Science and Technology Department of Henan Province, the Zhengzhou Municipal People's Government, and the FUTURE Mobile Communication Forum.

With the goal of promoting 5G evolution and innovation, the event will focus on meeting economic and social expectations from 5G, and promoting a global scientific and technological cooperation system and industrial ecosystem of integration, innovation, collaboration and openness.

The event will consist of a main forum for the opening ceremony, 12 parallel forums, exhibitions in a 12,000-square-meter exhibition area, and activities highlighting excellent 5G application cases.

The parallel forums will cover forward-looking technologies, advanced manufacturing, agriculture, medical health and tourism. Transportation, energy and other important 5G-application industries are also on the agenda.

The three-day exhibition will focus on innovative technology and the integration of digital technology and real economy to create an observable, sensible, communicable and tradable exhibition area.

The 5G integration application award and the top 10 selected application cases will be announced during the event. The 10 cases are chosen from more than 400 outstanding projects countrywide.

The World 5G Convention is the world's first international conference in the 5G field, which started in Beijing in 2019.

## WEEKLY REVIEW

### Home-grown Earth System Model Releases Source Code

The Institute of Atmospheric Physics under the Chinese Academy of Sciences issued an Earth system simulation model, CAS-ESM2.0, and released its source code on November 17. It can be used to explore and understand the laws of climate and environmental evolution.

### Intelligent Connected Vehicles to Get Market Access

Some intelligent connected vehicle models with automated driving functions that can be mass-produced will be allowed market access and the selected vehicles can be tested on designated roads, according to a circular released by four ministries, including the Ministry of Industry and Information Technology and the Ministry of Transport.

### National Center for Giant Panda Conservation & Research Opens

The National Center for Giant Panda Conservation and Research was inaugurated in Chengdu, southwest China's Sichuan province, on November 17. Integrating local resources, the national center aims to build a world-class platform for research and academic exchanges on the giant panda.

### China Hi-Tech Fair Notches Up 5.17 Bln USD

The 25th China Hi-Tech Fair, concluded in Shenzhen on November 19, received 248,000 visitors and notched up a cumulative transaction volume of 5.17 billion USD, including the intended transaction amount.

### China-Laos-Thailand Express Freight Train Service Launched

The first freight train of the China-Laos-Thailand Express departed from Chengdu International Railway Port in Chengdu, Sichuan province, on November 17. The launch of the express freight train service, which cuts delivery time for goods from Chengdu to Thailand to under five days, marks a milestone in improving connectivity among the three countries.



Researchers from the Dunhuang Academy inspect Dunhuang cultural relics on site. (PHOTO: XINHUA)

## Editor's Pick

## Reviving Dunhuang Frescoes Through Sci-tech

By Staff Reporters

Yin Zhihong, a fresco restorer from the Dunhuang Academy, is all concentration as he bends over and painstakingly glues peeling parts of a fresco back into place. He's working in Cave 55 of the Mogao Grottoes in Dunhuang, northwest China's Gansu province, a cave dug in the Song Dynasty, dating back a thousand years. Age and the elements have contributed to the mural layer peeling off, cracking and chipping in the steady march of time.

Yin has become the mural's "doctor." His movements are very careful, as he inserts a pinpoint-thin bottle nozzle sideways onto the back of fingernail-sized flakes, carefully applies the adhesive, and gently moves it into place with cotton paper and a restoration knife.

### Methods to help cultural relics prolong life

The adhesive used by the fresco restorers is a special material, made of a mixture of silicone and acrylic, which is an "artifact" for mural restoration independently developed by the Dunhuang Academy.

"Flaking and efflorescing are the most common diseases in murals," Yin told *S&T Daily*. Salt efflorescence is a kind of chemical reaction produced by the ground layer under the action of water and salt migration, which can cause the ground layer to fall off and is difficult to treat, according to Yin.

"We need to lay cotton paper on the wall to desalinate and replace it regularly, so that salt does not accumulate on the mural, so as to achieve a thorough treatment," said Yin.

It would take at least three years for a team of seven or eight people to complete the restoration of such a cave, according to Yin.

In Dunhuang, there are more than 100 mural restorers like Yin. The existing murals in the Mogao Grottoes are 45,000 square meters. After nearly 80 years of practice, the Dunhuang Academy has formed a complete set of techniques and scientific processes for the protection of murals, and relies on science and technology to prolong the life of the Mogao Grottoes.

### Advanced tech brings more possibilities

In 2020, China's first "multi-field coupling laboratory" for cultural heritage protection was officially put into use at the Dunhuang Academy.

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## BeiDou Navigation System Recognized by ICAO

By Staff Reporters

Recently, the latest revised version of Annex 10 to the International Civil Aviation Convention (ICAO), which includes technical standards and recommended measures of China's BeiDou Navigation Satellite System (BDS), officially came into effect, said the Civil Aviation Administration of China (CAAC).

This means that BDS has officially been recognized as being of the required standard by ICAO, making it a globally accepted satellite navigation system for civil aviation, according to CAAC on November 16.

"BeiDou joining the network will bring more benefits to the global community," Tammy Qiu, former chair of the aviation and aerospace working group at the European Chamber of Commerce in China, was quoted as saying by *South*

*China Morning Post*.

China has made significant efforts to get BDS added by ICAO since its application in 2010, including 28 working meetings held and over 100 technical documents submitted.

For the first time, China has used its own team to successfully promote BDS, a complex system developed by China with independent innovation, into the ICAO standard, said an official from CAAC. This is of great significance to promote the high-quality development of China's civil aviation and enable China with great transport strength, the official added.

ICAO's technical verifications are testimony to BDS' ability to provide navigation services for various industries around the world.

As one of four global satellite navigation systems recognized by the United

Nations, BDS now formally provides services on a global scale, serving more than one billion people in over 200 countries and regions.

With its superior performance, BDS has broad application scenarios. For example, in Africa, BDS is used in road transport vehicle management, the railway industry, land surveying, digital construction, intelligent mining and wildlife conservation.

According to a recent paper published by Harvard's Belfer Center for Science and International Affairs, BeiDou's most obvious comparative advantage is a larger constellation that offers greater PNT (positioning, navigation, and timing) data availability in many parts of the world and cutting-edge PNT is particularly important for emerging applications such as precision agriculture and autonomous driving.

## International Cooperation

## New Ethiopia CDC Lab Enhances Sino-African Public Health Ties

By LIN Yuchen

Chinese delegations attended and addressed the completion ceremony of a Chinese-funded disease control and prevention laboratory in Ethiopia on November 10, committing to enhancing their cooperation and advancing public health in Africa.

Such laboratory projects that are part of China-Africa's cooperation framework are historic. According to Hu Biliang, professor of economics at Beijing Normal University, this is because the lack of complete infrastructure is a major constraint on Africa's development.

"In 2012, the African Union adopted an infrastructure development plan, and China's infrastructure investment in Africa in recent years has been growing at an annual rate of over 10 percent," said Hu.

First announced in 2018 as a flagship cooperation project between China and Africa, the construction of the laboratory only took 25 months to complete, which demonstrates the will and action of China and Africa to unite and help each other to overcome difficulties, said Hu Changchun, the head of China Mission to the African Union in the completion ceremony.

As the first laboratory with modern conditions and complete facilities on the African continent, it aims to further enhance Africa's health prevention and control conditions.

According to the Africa Centres for Disease Control and Prevention (CDC), currently there are less than five percent of African laboratories that possess fully developed and sustainable capacity for diagnosing the priority diseases within their countries and properly transporting specimens while ensuring international standards and regulatory requirements are met. The new laboratory aims to narrow the gap of laboratory systems in Africa.

Shen Hongbing, director of the China CDC, said the two CDCs would work together in areas such as diagnosis, responding to epidemic outbreaks, surveillance and early warning systems.

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## New Graphic

### CHINA'S SHIPBUILDING INDUSTRY COMPARED TO LAST YEAR (From Jan. to Oct. in deadweight tonnage)

New ship orders of more than 61 million

63.3%

Orders in progress of more than 133.8 million

28.1%

Shipbuilding completion volume of more than 34.5 million

12%

SOURCE: MINISTRY OF INDUSTRY AND INFORMATION TECHNOLOGY

WECHAT ACCOUNT



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