Policy

BRI's Prospects for Next Decade

By Staff Reporters

China has outlined the paths and measures it will take to advance Belt and Road cooperation in the next decade.

The Office of the Leading Group for Promoting the Belt and Road Initiative drafted the report *Vision and Actions for High-Quality Belt and Road Cooperation: Brighter Prospects for the Next Decade*, which was released on November 24.

The development goals are working towards equal cooperation and mutual benefit, and promoting the construction of the Belt and Road Initiative (BRI) to a new stage of high-quality development.

There are five specific objectives, namely, building a smoother and more efficient connectivity network, ensuring comprehensive and practical cooperation to reach new levels, elevating the sense of gain and fulfillment for the people of all participating countries, establishing a new system to support China's open economy at a more advanced stage, and popularizing the vision of a global community of shared future.

In addition to the BRI's work in the past decade, the report proposes to focus on promoting organic integration of the Internet, the Internet of Things, big data, artificial intelligence (AI), blockchain and trade.

Foreign journalists at the Third Belt and Road Forum for International Cooperation experience intangible cultural heritage on October 17, 2023. (PHOTO: VCG)

"In terms of AI, China and its BRI partners can strengthen cooperation and exchanges on AI governance and rules, and research and development of AI technology," Wang Peng, an associate researcher with the Beijing Academy of Social Sciences, told the *Global Times* on November 24.

"Looking ahead, the BRI has a bright future," Xu Jianping, an official at the National Development and Reform Commission, told *Science and Technology Daily*.

With the ongoing science and technology revolution, especially in AI and big data, BRI partner countries are eager to deepen cooperation in emerging areas such as green initiatives, digital technologies, health and innovation. China's robust industrial system, complementarity of its industrial and supply chains with BRI partners, and potential for coordinated development are the key factors supporting the expansion of high-level and cost-effective cooperation in industrial and supply chains, Xu said.

Beefing up Cultural Relics Related Sci-tech Innovation

By LI Linxu

As part of efforts to build a powerhouse in the protection and utilization of cultural relics, China recently released a guideline on boosting sci-tech innovation in the field of cultural relics.

The guideline, jointly released by 13 government bodies, including the National Cultural Heritage Administration (NCHA), and the Ministry of Science and Technology, pledged to beef up sci-tech innovation capabilities, and fully leverage the supporting role of sci-tech innovation in the high-quality development of cultural relics undertakings.

In recent years, China has made great progress in the protection, research, management and utilization of cultural relics through sci-tech innovation, said an official from NCHA.

The guideline laid out a series of guiding principles and goals for advancing sci-tech innovation in the field of cultural relics in the following 10 or more years.

By 2025, an effective cohesive mechanism is expected to be established among basic research, application research and the transformation of sci-tech achievements in the field of culture relics, according to the guideline, vowing to make breakthroughs on a batch of key technologies in the protection and archeology of cultural relics.

During the process, priority will be given to set up a number of national and regional cultural relics research institutes, and build a well-structured talent pool.

By 2035, an interdisciplinary and cross-industry sci-tech innovation network for cultural relics will be established, with significant improvement in the sci-tech innovation capabilities of cultural relics protection, research, management and utilization, said the guideline.

To achieve these goals, an array of measures were put forward in the guideline from the perspectives of optimizing the layout, strengthening the platform construction, cultivating talent, and improving incentive mechanisms of sci-tech innovation.

Continuous efforts will be made to carry out the basic research and applied basic research, tackle bottlenecks in key technologies, enhance the R&D of specialized equipment, and advance the transformation of sci-tech achievements in the field of cultural relics.

International cooperation will also be strengthened, said the guideline, pledging to actively take part in the large-scale international sci-tech cooperation programs, and attract international well-known research institutes to jointly build international sci-tech centers in China.

Pairing Assistance Improves Medical Service in Xinjiang

Case Study

By CHEN Chunyou

In Tacheng, northwest China's Xinjiang Uygur autonomous region, you can hear the Dongbei dialect spoken extensively. Usually, it is heard in the northeastern provinces such as Liaoning, Jilin and Heilongjiang, so people visiting Tacheng for the first time often wonder if they are in Xinjiang or in the northeast.

The reason for Dongbei dialect's omnipresence in Tacheng goes back to 2010, when Liaoning was entrusted with supporting Tacheng's development. Since then, many people from Liaoning have been going to Tacheng to work and some have also settled down there. They have left their mark on sectors like manufacturing, education and healthcare.

Since 2016, the China Medical University (CMU) based in Liaoning's Shenyang city has sent more than 160 doctors to work in People's Hospital of Tacheng Prefecture. They have brought new treatment and management ideas, technologies and experience and promoted medical exchanges.

Doctors use a heart through the virtual 3D cardiac auscultation teaching system, which shows the human heart's anatomy and replicates its sounds. (PHOTO provided by Huang Hui to S&T Daily)

Tacheng's residents prefer to see a doctor on Wednesdays because that's when the Liaoning doctors observe an open day, making themselves available for consultations. The locals regard the Liaoning doctors as good doctors, especially for problems like cardiovascular diseases.

The Liaoning doctors have also filled the technology gap in the treatment of new-born babies.

Chen Dan, who came from CMU in May 2023, now heads the department of neonatology at the People's Hospital of Tacheng Prefecture. She said many newborns face birth problems like suffocation and newborns with different symptoms need different kinds of ventilators.

In the past, newborns were treated in the pediatrics department. In November 2020, the hospital established its neonatology department, the first of its kind in Tacheng.

Guided by the Liaoning doctors, the doctors in the neonatology department have learned how to use ventilators and how to resuscitate asphyxiated babies. It has improved their emergency treatment skills and helped lower the risk of infant mortality in the hospital.

With the help of the Liaoning doctors, the hospital has also established the first standardized training base for resident doctors in Xinjiang to improve their research and practice abilities. The teaching equipment has also been upgraded.

"In the past, while teaching, the lecturers played taped symptomatic sounds made by patients as well as corresponding sounds made by healthy people. The medical students would listen to the sounds to gauge the symptoms and the differences," said Huang Hui, director of the research and education department. Huang came to Tacheng from Liaoning's Anshan city in 2021.

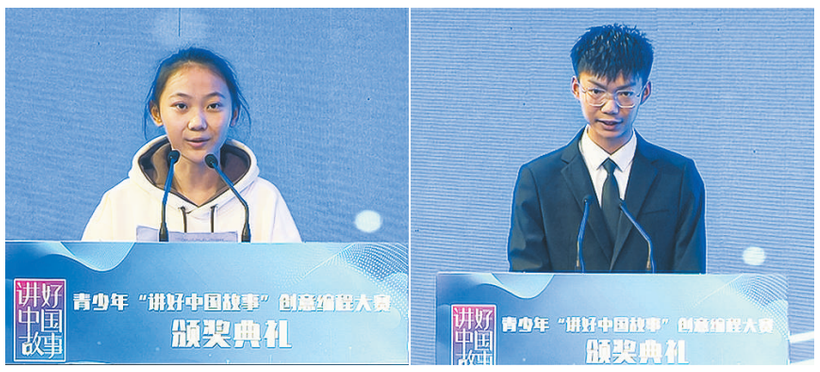
In 2018, the hospital introduced a virtual 3D cardiac auscultation teaching system. Now the students can discern between the sounds a healthy heart, lungs and other organs make as well as the sounds made by patients much more easily and vividly.

Huang said this year, the hospital recruited 195 trainees from across Tacheng, including new graduates and doctors with work experience. They will receive free training for three years during which the hospital will offer them accommodation.

"The hospital has cultivated a group of doctors who have become the backbone of rural clinics, guarding people's health across Tacheng," she added.

Photo News

Bolstering Youngsters' Digital Literacy via Programming



The first Youngsters "Tell China's Stories" Creative Programming Contest was successfully concluded on November 25 in Beijing, with a total of 48 pieces of works standing out from more than 1,400 pieces of 3D animation and programming works across the country.

Specially catering to youngsters, the event was hosted by China International Communications Group, and is part of the "Tell China's Stories" International Creative Communication Contest.

The photo shows that the two representatives of first prize winners, Liu Runzhi (Left) from Hebei's Qingliangsi Middle School and Lin Fangqian from Tianjin University of Technology and Education speak about their contest experiences at the event's awarding ceremony.

(PHOTO provided by the organizer)

5G+ BeiDou Revolutionizes Underground Navigation

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From theory to reality

The idea sounds simple, but is also challenging. The first challenge is to get the BeiDou signal underground. In the 5G indoor distribution system, multiple communication signals such as 3G/4G/5G of the three telecom operators are transmitted, and if BeiDou signal is added, the original communication signals may be interfered with, affecting normal phone calls and Internet access.

"At the beginning, there was nothing to do but to analyze the intermodulation interference model of the two signals and find the signal fusion algorithm," said tech team member Lu Zhaoming.

While communication and BeiDou are two separate types of signals, they are not incompatible, Lu added. Through calculation, the team members obtained the filtering and power parameters required for the BeiDou signal to be imported into the 5G indoor distribution system, and then transmitted through the shared link of the broadband multi-channel signal, successfully introducing the BeiDou signal underground.

Navigation accuracy was another challenge. The accuracy of positioning using BeiDou signals outdoors is about 10 meters, but this accuracy is inadequate in an underground environment.

"This problem had been bothering us for more than a year, and during that time we had tried more than 100 different types of algorithms, but the positioning accuracy was not ideal," said Lu.

One day, Lu accidentally discovered that there were static characteristics in the wireless reflection environment of BeiDou signals in space, which could be used to build data models to provide more location observation sources.

In June 2022, in an underground parking lot of Xiongan New Area, when Lu first saw the positioning cursor move step by step with his footsteps on a mobile phone screen, he was over the moon.

"This proves that our positioning algorithm and scheme can work in real scenarios!" said Lu.

Paving the way for a future city

Xiongan New Area aspires to establish a comprehensive transportation network, maximizing the use of underground space to create a future city devoid of challenges associated with conventional cities and translating urban planning blueprints into reality.

"By 2025, '5G + BeiDou' navigation will cover all the built underground parking lots in Xiongan New Area, truly realizing the navigation of 'an underground city'," said Lu.

Lu also hopes that the technology can be promoted to more scenarios such as mining areas, transportation hubs, and terminals, playing a greater role in making full use of underground space.

Selfless Medical Teams Boost Healthcare in Developing Countries

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In 2014, amid the Ebola outbreak in West Africa, Wang Zhenchang, vice president of Beijing Friendship Hospital, led the 24th Chinese medical team to Guinea to help control the Ebola epidemic and train public health physicians.

Over a two-month period of hard work, Wang and his colleagues trained more than 1,600 public health doctors for Guinea, and were awarded the "Medal of the Republic of Guinea," for their efforts.

"During the medical aid mission in Dominica, I realized the urgency to help improve local healthcare," said Wu Dexi, deputy chief physician of cardiology from the First Affiliated Hospital of Sun Yat-sen University. Wu has carried out a temporary cardia cpacemaker implantation, holter electrocardiogram monitoring and ambulatory blood pressure monitoring, all unprecedented in Dominica.

Meanwhile, Wu has actively promoted the establishment of Dominica's first cardiovascular department, the Dominica-China Cardiovascular Imaging Center and the Dominica-China Telemedicine Center. The two state-of-the-art medical facilities will boost health service delivery for local residents.