C919 Flies High on Global Stage

Voice of the World

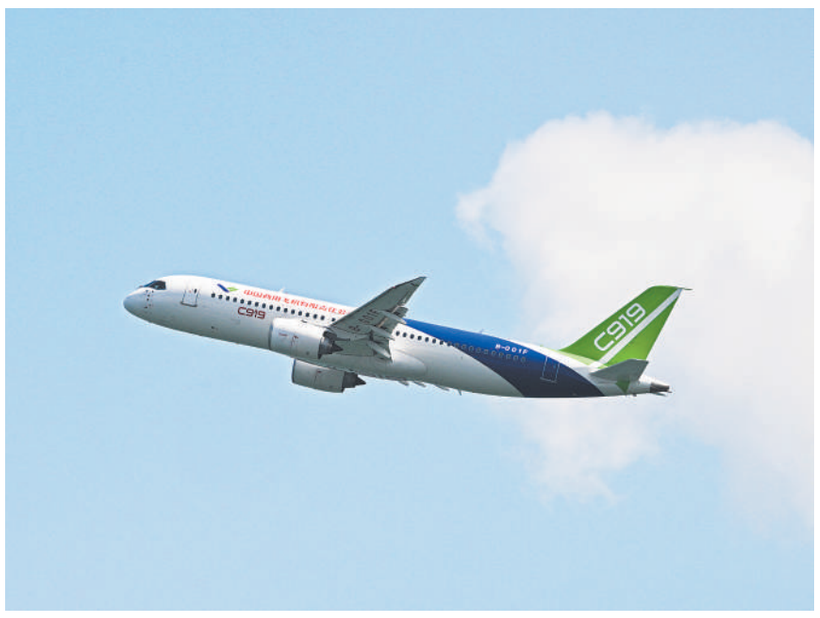
Edited by GONG Qian

China came out in force at the Singapore Airshow this year, bringing its largest- ever contingent, and showing off the new C919 — the country's first domestically developed large, narrow-body passenger aircraft, *Japan Times* reported.

For the first time, the Singapore Airshow, held from February 20 to 25, had exhibitors from China. The C919 and the other showcased Chinese aircraft attracted wide attention.

The C919 would be the most scrutinized aircraft at the airshow, Shukor Yusof, founder of Endau Analytics, a firm that tracks the aviation industry, had told CNN earlier. "There is a lot of interest to see the actual aircraft, how it performs and how it is in flight," he said.

Manufactured by the Commercial Aircraft Corporation of China (Comac), the C919 made its international debut at Asia's largest airshow. According to *The Hindu Daily*, on the first day of the event, liveried in white, green and navy blue, the C919 wowed trade exhibitors, aviation executives and officials with sleek aerial manoeuvres.



A Chinese passenger jet C919 makes a rehearsal flight to prepare for the Singapore Airshow in Singapore, February 18, 2024. (PHOTO: XINHUA)

The international debut of the C919 and the cost of going green by 2050 dominated the opening day of the airshow, Bloomberg reported.

Many overseas media called it a prominent symbol of "Made in China" strategy. The C919 is a legitimate effort by China to build its own technological and industrial capabilities, Airbus commercial aircraft chief executive Christian Scherer was quoted as saying by *The Straits Times*.

"The Singapore Airshow is a fantastic opportunity for Comac particularly given the current situation with Boeing," Brendan Sobie of Sobie Aviation told CNBC. Boeing has now reduced production due to quality control issues and Airbus's backlog is very long, which presents Comac with "a strong opportunity to gain market share," particularly in its domestic market, Mike Yeomans of aviation consultancy IBA told Reuters.

Previously, Comac had revealed that it had received orders for about 1,000 C919 jets. It is an impressive figure for a brand- new aircraft, said *Japan Times*. During the airshow, Comac signed a deal for 40 C919s and 10 ARJ21s with an airline company in China.

Meanwhile, overseas customers have shown their interest in the C919. "We have also seen a growing trend where clients are including the C919 option in their fleet evaluation," Adam Cowburn from Alton Aviation Consultancy told Reuters.

Comac won an endorsement from Saudi Arabia's Riyadh Air as an emerging rival to Boeing and Airbus, Bloomberg reported. "I'm sure they will build a world- beating aircraft in the next 10 years," Riyadh Air's Chief Operating Officer Peter Bellew said at the airshow. "I wouldn't underestimate Comac for one minute. They will be a real force to be reckoned with."

Currently, the Chinese aviation authority is negotiating with the European authority for type certification.

"It will take time for the C919 to land an order from a major carrier," aviation analyst Shukor Yusof at Singapore- based Endau Analytics told AFP. But it's "a matter of when, not if, a top- tier airline buys a Chinese- made commercial jet."

Opinion

Challenges and Opportunities Brought by Sora

By YIN Ximing

Yin Ximing delivers a speech at China Association for Science and Technology Youth Scientist Innovation Salon. (COUTESY PHOTO)

AI, as a new frontier of disruptive technology and international competition, is the new opportunity of the industrial revolution and a driver for cultivating New Productive Forces. On February 16, OpenAI released its first large-scale text- to- video model, Sora, which ignited global attention. Sora's debut has become a milestone event after ChatGPT.

Sora is positioned as a "video generation model as a world simulator," and its core feature is that it can directly transform text description into corresponding dynamic video content. Sora's innovation lies not only in its technological breakthrough, but also in its change of application contexts of AI.

A traditional AI large model is mostly trained and applied in a closed environment, but the emergence of Sora means that AI technology can directly interact with the real world, which will greatly promote the application of AI technology in all walks of life.

However, it is also necessary to realize that Sora also brings new challenges to employment, privacy protection and ethical governance. In particular, Sora may be abused to create false information, online fraud, maliciously impact the history and culture of other countries and cyberspace sovereignty.

For China, the release of Sora has brought new ideas and opportunities for its innovation, but it also reveals that there is a gap between AI enterprises and industries in cutting- edge theoretical breakthroughs, infrastructure construction, technological disruptive breakthroughs, rapid application transformation, and industrial ecological cultivation. Therefore, it has become an urgent issue to explore the new ecosystem and new mode of cultivating and expanding AI firms, accelerating AI technology breakthroughs and rapid application in various contexts.

Chinese AI enterprises, such as Huawei, Baidu, ByteDance, Beijing Academy of Artificial Intelligence and Baichuan, have actively explored the AI innovation and industrial application of context+ technology two-wheel drive. In the future, China needs to seize the paradigm change opportunity of context-driven innovation in the digital age, accelerate the construction of context-driven AI innovation ecosystem, aim at the global innovation frontier and new opportunities emerging in new contexts, support firms to lead the deep integration of university- industry collaboration, and accelerate the cultivation of domestic AI innovation ecosystem.

In particular, more attention should be paid to breakthroughs of core technologies such as national AI computing power, and data infrastructure construction and advanced GPU, in order to accelerate the cultivation of AI talents through the university-industry collaboration, build open application context, cultivate and expand AI enterprises, promote a virtuous circle of "context-technology- finance- industry", and form an "AI innovation flywheel." In this way, China may open up new advantages for AI development, and empower New Productive Forces towards high-quality and sustainable development.

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Discarding Zero-sum Thinking in Worldwide Connectivity

Comment

Edited by QI Liming

In late January, the *Foreign Policy* and *The Diplomat* websites released two similar articles on the same day. The articles examined the Belt and Road Initiative (BRI) in a rational and panoramic way. Very different from the clichéd press reports by some Western media outlets that constantly smear the BRI, the *Foreign Policy* article *The Red Sea Crisis Proves China Was Ahead of the Curve* explains how the BRI is not a sinister plot. Rather, it is a blueprint for what every nation needs in an age of uncertainty and disruption, said the article.

Parag Khanna, founder and managing partner of global strategic advisory firm FutureMap, and the article's author, said, "The Red Sea crisis shows that the BRI is vital to all countries." There is precisely one pathway for a world plagued by dire mistrust and unpredictable crises to take meaningful collective action in the global public interest, and that is to build more pathways for supply to meet demand, said Khanna. The solution to supply interruptions is more supply chains. More belts, more roads. China is the country that has known this, and acted on it for years, he said.

In his article Khanna also mentioned that, from a functional perspective, the BRI represents what all countries should do in their own national interest: build as many pathways as possible for supply to meet demand, both as a hedge against unforeseen disruptions, but also to boost one's connectivity and influence.

Traditional Chinese costumes and opera during the China-Philippines cultural activities held in Manila, the Philippines in October 2023. (PHOTO: VCG)

For overpopulated developing countries, solid infrastructure is essential to cope with domestic demands, as it generates economic multiplier effects, and builds connectivity to the world economy.

Many Western governments and the mainstream media hold long-standing distrust and criticism of the BRI. Rational and objective opinions should, therefore, be valued.

According to *The St Andrews Economist* website, on November 28, 2023, a symposium was held in Brussels to celebrate the 10th anniversary of the BRI. At the symposium, Bart Dessein, a professor at the University of Gent, said that the BRI's 3,000 projects had resulted in the creation of 420,000 jobs globally. Meanwhile, Bernard Dewit, Chairman of the Belgian- Chinese Chamber of Commerce, praised the BRI for aiding countries in developing more rapidly. "It has been a success, and that is the reality," he said.

As Khanna said, the BRI has also significantly promoted economic cooperation and cultural exchange between China and other countries. The initiative has fostered partnerships in sectors such as trade, investment, technology and education. For example, the BRI-supported China- Pakistan Economic Corridor has facilitated joint ventures in energy, infrastructure, and agriculture between the two countries.

"Even though Chinese- led versus Western- led initiatives are portrayed as zero- sum, in most cases infrastructure such as ports and electricity grids are nonexcludable and nonrival and open to any commercial user and providing equal service to those users," said Khanna. In fact, each infrastructure project, whether a pipeline, electrical grid or Internet cable, inadvertently advances the far grander project of transforming the world into an interconnected supply chain system. The answer to the question as to the fate of infrastructure is the same as for the globalization it underpins, he concluded.

A volatile international situation and recurring regional crises are the current status quo. The BRI has demonstrated the power of connectivity, created greater development space for many countries, and objectively played a role in hedging risks. This has led to the value and the global significance of the BRI being realized by more countries.

There is a growing realization that only when countries work together to achieve common development through connectivity, can they meet global challenges and safeguard world peace and prosperity.

Hi! Tech

First Human with Brain Chip Implant Moves Computer Cursor with Thought

By GONG Qian

Elon Musk said in a recent post on social media platform X that the patient who had received a brain implant from his Neuralink company, the first human to do so, is doing well. The patient can control and move a computer mouse on the screen by "thinking."

The news comes after Neuralink last year began recruiting people for a clinical trial of the brain chip.

The technological focal points of the trial are the implant and the surgical robot that inserts the device. According to the Neuralink website, the chip, called N1, is hermetically sealed in a biocompatible enclosure that can withstand physiological conditions several times harsher than those in the human body.

The N1 is powered by a small battery charged wirelessly from outside via a compact, inductive charger that enables easy use from anywhere. It has over 1,000 electrodes distributed across 64 highly flexible, ultra- thin threads to record neural activity. The threads are so fine that they can't be inserted by the human hand. So the surgical robot has been designed to do the job.

The robot has three main components: the head, body and base. The head is like a helmet with embedded cameras and sensors to map the patient's brain, and the surgical needle. This is where the patient's head is placed. The body of the robot holds the parts that give it mobility. The base balances the robot and contains the technology for operating the entire system.

In the coming days, as Neuralink and Musk provide more details of the trial, it will be seen how significant the implant is as a scientific advancement.

Breakthrough in fNIRS Imaging Technology Benefits All

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The R&D team did not stop there. Their next goal was to improve the accuracy of fNIRS imaging. Fu said that the advantages of fNIRS imaging technology are many, but the disadvantages are also obvious. "It is accurate to only about 3 cm, while the accuracy of functional MRI (fMRI) is 3 mm," Fu said.

Scientists have long been trying to improve the accuracy of fNIRS imaging to the level of fMRI, and in recent years, the development of artificial intelligence and deep learning have assisted to solve this problem.

After numerous attempts, Wang's team found a way, which combines neural network- based image reconstruction frameworks and models with traditional physical models, to improve the spatial resolution of fNIRS imaging to about 5 mm.

Intelligent interpreting system

As fNIRS imaging is a new technology and outputs new type of images, several questions emerged that need answers. How to interpret the image? What are indicators of insomnia, depression or autism? What about medication?

"We want to build a model that can help doctors analyze the image information and support disease diagnosis, classification and evaluation of therapeutic effect throughout the clinical process," said Deng Hao, software development director of Huichuang.

The team has established cooperation with dozens of clinical institutions, and has collected tens of thousands of dynamic brain function data. The software developers designed a model to collect disease- related data and establish the link between data and disease to support diagnosis.

To date, fNIRS imaging technology and related models have been demonstrated in more than 800 institutions including Peking Union Medical College Hospital, Shanghai Huashan Hospital and Tsinghua University. For Wang and his team, after nearly 20 years of effort, they are on the threshold of taking a giant leap for science and humankind.