世界互联网大会
World Internet Conference

2025

Collection of Practice Cases of Jointly Building a Community with a Shared Future in Cyberspace

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Internet Infrastructure construction

Accelerating the Building of Global Internet Infrastructure for Greater Connectivity

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Internet Infrastructure construction

Accelerating the Building of Global Internet Infrastructure for Greater Connectivity

Outstanding Case

ASTRON Network: Building Global Cross-Border Digital Trust Bridges, Co-Creating an Open and Trusted Digital Ecosystem

▲ ASTRON Network: Building Cross-Border Digital Trust Infrastructure

Applying Institution

China Academy of Information and Communications Technology

Other Participating Organizations

Xiamen Municipal Bureau of Industry and Information Technology, Liuzhou Municipal Bureau of Industry and Information Technology, MYE.G.SERVICES BERHAD, DIRECH YUNZHOU, INSPUR YUNZHOU, DIRECH International Inc. , BUBI TECH, Singapore's Infocomm Media Development Authority (IMDA), SIEMENS, SAP, SGTraDex, SUNGENT DIGITECH, TradeGo, AEOTrade, Mobicom.

Countries and Regions Covered or Involved in the Implementation

China, Malaysia, Singapore, Germany

In today's era of surging global digitalization, the secure flow and efficient collaboration of cross-border data have become key forces driving integrated global economic development. In 2021, the China Academy of Information and Communications Technology (CAICT) led the launch of ASTRON Network, leveraging blockchain technology to build cross-border digital trust infrastructure. Focusing on core application scenarios such as cross-border trade and carbon neutrality, ASTRON Network injects "trust momentum" into global digital governance and sustainable development.

Co-Building a Globalized Node Network to Deeply Enable Digital Collaboration Across Asia and Europe

ASTRON Network actively advances the global deployment of “super nodes,” having established super nodes in multiple locations across China and countries such as Malaysia, while international nodes in Singapore, Mongolia, Brazil,and other countries are under concurrent development, forming a cross-border digital trust network covering Asia and Europe. Moreover, ASTRON Network has achieved remarkable results in international cooperation: deep integration with Singapore’s Infocomm Media Development Authority (IMDA) TradeTrust framework has made it the only China-initiated blockchain infrastructure with official support, facilitating efficient circulation of electronic documents in international trade; the Malaysia super node supports trade document verification and mutual trade platform development, significantly enhancing credential verification efficiency; in partnership with Siemens, a trusted transnational product carbon footprint platform was developed to enable traceable and trusted exchange of global carbon data; product quality certification and traceability systems such as “BRICS U Code” and “MID” have been developed for BRICS, ASEAN countries, and Portuguese-speaking countries, providing digital trust assurance for Chinese products going global and promoting smoother and more transparent global supply chains.

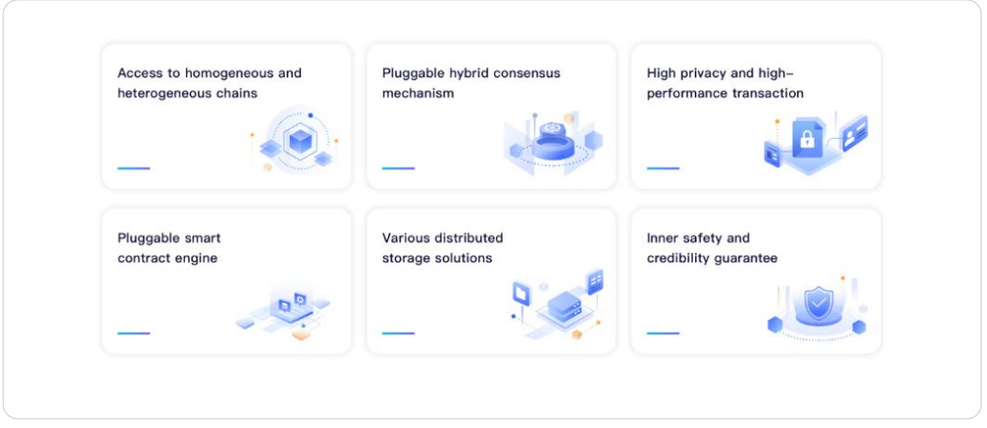
▲ Official Launch of ASTRON Network International Super Nodes

▲ ASTRON Malaysia Super Node Partnership Signing Ceremony

Pioneered a “permissioned public blockchain” architecture to build a global technical infrastructure for digital trust

ASTRON Network innovatively proposes a “permissioned public blockchain” architecture that retains both the openness of public blockchains and the controllability of consortium blockchains, achieving an organic balance among security, transparency, and compliance. Through a permissioning mechanism, it ensures trusted node access and data traceability without dependence on cryptocurrency, fully meeting global compliance requirements. For example, in cross-border trade scenarios, customs authorities, banks, and logistics enterprises from various countries can access the network through international super nodes, ensuring both public verifiability of data and authentic participant identities with auditable operations through access control mechanisms, thereby enabling efficient and compliant cross-border data sharing and business collaboration.

Additionally, ASTRON develops a series of public services around scenarios such as “digital asset,” “digital credentials,” and “evidence preservation” In collaboration with global partners including Singapore’s Infocomm Media Development Authority (IMDA), Malaysia’s MYEG Group, and Siemens, ASTRON co-builds a cross-border digital trust ecosystem, providing a reusable technical foundation for transnational digital trust while balancing compliance, security, and innovation.



▲ ASTRON Permissioned Public Blockchain Features Strong Security, High Performance, and Strong Compatibility

Enhance Cross-Border Collaboration Efficiency, Drive the Establishment of an Inclusive Digital New Order

ASTRON Network has achieved remarkable results in both economic and social dimensions. In the field of cross-border trade, the pilot project using ASTRON-based seaborne electronic bills of lading has successfully provided a complete paperless document solution for trade between Chinese and Singaporean enterprises., increasing document processing and transmission efficiency by 60% while reducing operational costs by over 30%. The customs clearance process has been significantly optimized, earning high recognition from Singapore's Ministry of Trade and Industry and multiple international bill of lading platforms. The application of the China-Malaysia trade document verification platform has effectively reduced cross-border trade friction costs and enhanced the international competitiveness of enterprises.

On the social front, the cross-border digital trust system established by ASTRON has benefited enterprises in China, Malaysia, Singapore, Germany, and other countries, effectively addressing the long-standing challenges of traditional cross-border operations—"time-consuming processes, high costs, and trust deficits." This has enabled small and medium-sized enterprises to participate more equitably in international trade, promoting the inclusive sharing of digital dividends.

ASTRON provides a practical, open, and replicable technical pathway for global data governance. It helps establish a more equitable, secure, and inclusive digital governance framework, injecting new technological strength into building a community with a shared future in cyberspace.

▲ China-Malaysia Blockchain Infrastructure Cooperation Seminar Based on ASTRON

▲ Pilot Project of "China-Singapore" Maritime Trade Electronic Document Presentation Based on ASTRON

Outstanding Case

CSGI Global Data Operation Center: Lighting Up Belt and Road Power Cooperation

▲ A Global Operation System

Applying Institution

China Southern Power Grid International Co., Ltd.

中国南方电网 CHINA SOUTHERN POWER GRID 南方电网国际有限责任公司

Countries and Regions Covered or Involved in the Implementation

China, Laos, Vietnam, Malaysia, Uzbekistan, Peru, Chile, Luxembourg

Under the Belt and Road Initiative, China Southern Power Grid International Co., Ltd. (CSGI) has deepened connectivity with partners through power cooperation. Establishing a Global Data Operation Center, the company has launched a global operation system featuring one cloud, one integrated system and one network that provides core support for Belt and Road power projects—serving as a digital bridge for cross-border energy collaboration.

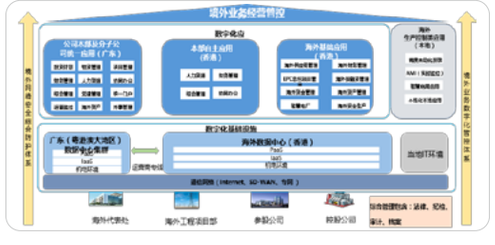
12 Projects across Four Continents: Weaving a Global Digital Network for Electricity

Leveraging Belt and Road opportunities, CSGI has reached out to countries in four continents, including Laos, Vietnam, Malaysia, Uzbekistan, Peru, Chile, and Luxembourg. With 12 investment projects in overseas M&A, greenfield investment, engineering construction and international trade, the company established the Global Data Operation Center to enhance global asset management and digitization. The center provides end-to-end technical support via centralized business systems and unified data management. During Covid-19, the Vinh Tan 1 Power Company (in Vietnam) used a paperless meeting system for cross-border reviews, while Chile's team remotely managed spare parts via an asset management platform—replacing traditional travel and logistics to save over CNY 1 million per project per year.

▲ International Cross-border Network Architecture

"Hybrid Cloud + Data Shield": Solving Cross-Border Data Challenges

With the hybrid architecture of a cross-border public cloud and private cloud, the Center forms its digital foundation: the public cloud collects real-time generation/transmission data from projects in various countries (one-time collection, multiple uses), while the private cloud ensures data integrity via hot backup and disaster recovery. For security, it deploys Chinese National Standard cryptography and cross-border networking to encrypt data end-to-end, supported by



▲ International Digital Construction Framework

an SD-WAN and cloud firewall Data Shield system. This safeguards business secrets in Vietnam, Peru and other markets.

On this foundation, global paperless meeting and asset management platforms enable unified approval, O&M, and centralized control of international operations.

Cost Efficiency & Talent Cultivation: Driving Global Power Digitization

CSGI's Global Data Operation Center delivers tangible benefits: annual O&M costs are reduced by over CNY 3 million, with unified digital planning expected to cut future investments by CNY 10 million—empowering partners to share digital dividends. In Peru's North Lima Grid Project, a localized O&M system slashed equipment costs while improving grid reliability.

In addition, the Center's country-specific training programs nurture digital power talent in Laos, Vietnam, Egypt and Peru. Trained locals now independently operate digital monitoring systems at Pluz Energy Peru(Pluz Energia), boosting employment and fueling national digital transformation. Embodying extensive consultation, joint contribution and shared benefits, CSGI's Global Data Operation Center sets an example for the 21st-century Digital Silk Road.

Exponential Tech

——Unlocking Africa's Digital Continent's "Hyper-Domain Parallel" Ecosystem Engine

▲ Exponential Tech is based in South Africa and covers Asia and Africa

Applying Institution

Exponential Tech

Countries and Regions Covered or Involved in the Implementation

China, South Africa, Kenya, Germany, Nigeria, Rwanda

Africa's digital development faces three major challenges: inadequate infrastructure, fragmented cross-border payments, and decentralized technology applications. Exponential Tech, positioned as a "Hyper-Domain Parallelizer," has established three core hubs covering Cape Town, Lagos, and Shenzhen to drive a decentralized digital empowerment network, achieving digital transformation across energy, finance, and manufacturing sectors. In 2023, it helped Kenya's solar payment provider M-KOPA reduce customer acquisition costs by 62%.

Three-tier sustainable technology transformation chain

Exponential Technology promotes Africa's digital development by building a three-tier sustainable technology transfer chain. First, in the field of off-grid digital infrastructure, Index Technology collaborated with CRRC Wind Power to develop "containerized microgrids," each capable of serving 200 households. Ninety-two units have been deployed in Rwanda's mountainous areas, reducing local electricity prices from 0.63 yuan/kWh to 0.11 yuan/kWh, providing stable clean energy to remote communities and significantly lowering living and production costs. Second, in the agricultural sector, Index Technology established an AI-driven agricultural federated chain, combining China Longping Hi-Tech's hybrid rice technology with Germany's Bayer crop protection solutions to train a "cross-climate crop model," achieving precise adaptation for crops in the semi-arid region south of the Sahara. In a pilot project in Kano State, Nigeria, local farmers rice yields increased by 214%, helping them boost income and improve food security. Finally, in the manufacturing sector, Cape Towns green manufacturing cell network enables local assembly through "modular mobile phone production lines," with Xiaomi providing core modules, reducing phone repair costs by 77% and shipping 5.3 million units. This initiative has also created numerous job opportunities and enhanced community sustainability.

Finance	Manufacturing	Services	Retail	Medicine and Healthcare
Financial Services	Electronics	Catering	3C Digital	Medical health
Cross-border Financing	Mechanics	Smart Campus	e-Commerce	Biomedicine
	Cosmetics	Online Education	Omnichannel Retail	Construction and Real Estate
	Home Appliances	Food	Shopping Mall	Real Estate
	Automotive Electronics	Food Industry	Government and Public Affairs	
	Home Furnituring	Baking	Digital Government	
	Base Metals	Food Production		
	Industrial Manufacturing			
	Fharmaceuticals			
	Household Chemicals			

▲ Exponential Tech builds emerging technology networks

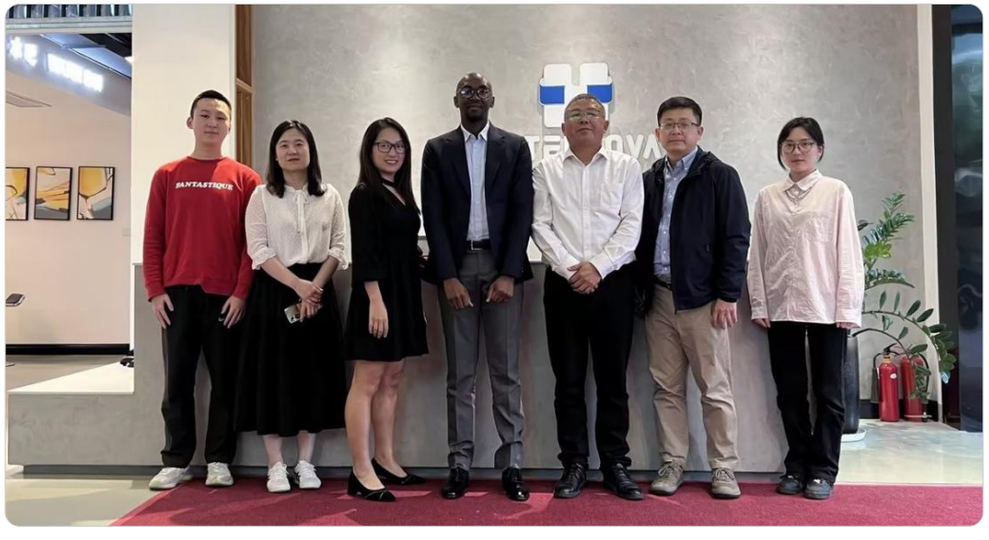
Cross-domain adaptation technology toolbox

Exponential Tech transforms Africa's vague demands into actionable solutions through intelligent algorithms and fintech tools. The demand folding algorithm can break down vague demands such as "drought-resistant crops" into 19 precise agricultural parameters, including soil pH levels and daily water usage, enabling precision agricultural management. The Financial Penetration Waveguide, inspired by China's WeBank microloan risk control models, develops a social relationship chain credit system, providing US$42 million in loans to Kenyan tea farmers without bank accounts. The default rate stands at just 2.3%, vastly expanding financial inclusion. Meanwhile, the carbon certificate redemption agreement automatically links NFT carbon certificates generated per kilowatt-hour from Rwandas off-grid power stations directly to the European carbon trading market, offering instant trading channels for green energy investors and incentivizing local renewable energy development, achieving a win-win for both economy and environment.

▲ Exponential Tech founder Njabulo Nzimande

Empirical evidence on the digital equality effect

In Kenya's Maasai Mara Reserve, local herders use solar-powered AI collars equipped with hardware provided by Shenzhen's UBTECH and animal behavior algorithms developed by Index Technology to achieve early warnings for livestock straying, reducing the livestock loss rate from 17% to 1.2%, significantly safeguarding herders income. Meanwhile, the Qingdao-based team in China has cultivated salt-tolerant rice using coastal soil data lakes, achieving a yield of 412 kilograms per mu under a salinity of 3□. In terms of international cooperation, Siemens applied the off-grid voltage fluctuation model developed by Index Technology to wind power grid integration in Bavarias mountainous regions of Germany, reducing wind curtailment by 24%. These practices not only improved living and production conditions in Africa but also fed innovative experiences back to the international market, realizing the global sharing and inclusiveness of digital technology.



▲ Promoting China-Africa cooperation in science, technology and innovation

Signal beyond borders, cooperation towards success: Africa Mobile Network Rural Coverage Project

▲ The photo shows a newly completed telecommunications base station in Mkuranga, Coastal Region, Tanzania, which is part of a project involving the construction of 636 base stations. With the completion of this station, more than 20,000 local residents have gained access to a stable mobile communication network for the first time. Its signal coverage has enabled villages that had long been "out of service" to finally make phone calls and access the internet.

Applying Institution

Genertec International Holding Co., Ltd.

通用技术集团国际控股有限公司
GENERTEC INTERNATIONAL HOLDING CO., LTD.

Other Participating Organizations

Tanzania Telecommunications Company Limited (TTCL)

Countries and Regions Covered or Involved in the Implementation

7 countries and regions such as Côte d'Ivoire, Equatorial Guinea, Tanzania, Madagascar, and Ghana

In Africa, tens of millions in remote communities remain constrained by limited connectivity, hindering their access to digital opportunities. Genertec International Holding Co., Ltd. (Genertec International) is teaming up with governments across the continent to expand connectivity infrastructure. The Tanzania Mobile Network Rural Coverage Project, involving the deployment of 636 communication sites, will extend coverage to over 2.5 million people and increase the network coverage by nearly 4%, serving as a vivid example of Sino-African digital collaboration.

Connecting Communities: 636 Sites to Boost Tanzania's Rural Coverage

Tanzania's rural and remote areas, in particular, grapple with scarce communication infrastructure and low wireless coverage. As the cornerstone of Information and Communication Technology (ICT), mobile network infrastructure is a prerequisite for digital progress in remote areas.

In 2024, Genertec International aligned with the Tanzanian government's strategy to expand mobile network coverage and achieve universal access. The Tanzania Mobile Network Rural Coverage Project (the project) focuses on these underserved areas and leverages China's mature technologies and extensive international engineering experience, deploying 636 communication sites, which are expected to deliver reliable voice and data services to over 2.5 million people, increasing Tanzania's national network coverage rate by approximately 3.93% upon completion.

As another landmark achievement of China–Tanzania cooperation within the Belt and Road framework, the successful delivery of this project will further strengthen bilateral collaboration in the field of infrastructure, lay a solid foundation for broader cooperation between the two countries in the future, and provide the international community with a valuable example of digital connectivity in practice.

▲ Local team is transporting equipment in Tanzania

▲ Data center is tested and accpeted in Tanzania

Local Partnerships for Sustainable Impact

Project execution blends international expertise with deep local engagement. Genertec International aligns closely with Tanzania's national development and digital transformation agendas. It fosters multi-level coordination with the Ministry of Communication and Information Technology, telecom operators, and local authorities, adapting China's advanced practices in communication technology, project management, and standardization to the local context. The project adheres to internationally recognized network planning and engineering standards, ensuring long-term quality and reliability.

▲ Completed telecommunication site in Tanzania

Besides, Genertec International established a branch office in Dar es Salaam to enable localized operations. A joint Chinese-Tanzanian team manages the project lifecycle—from design and construction to operations and maintenance. Comprehensive skills training and knowledge transfer empower communities, offering youth employment opportunities and instilling new energy into Tanzania's ICT sector.

Powering Digital Africa: A Continent-Wide Vision

The project exemplifies Genertec International's broader ICT commitment across Africa. In Côte d'Ivoire, a Smart Customs System streamlines port operations and logistics, fueling the nation's open economy; Madagascar's operational National Data Center elevates government capabilities in emergency response, public services, and cybersecurity, underpinning modern governance; while Guinea's completed National Backbone Network dramatically enhances nationwide data transmission, strengthening the digital foundation for economic growth and expanded connectivity.

Furthermore, projects span intelligent transport systems, smart ports, and national backbone networks in countries including Côte d'Ivoire, Ghana, Guinea, Equatorial Guinea, Senegal, Burkina Faso, and Madagascar, turning technology into tangible drivers of progress. A series of digital flagship projects are now unfolding across this beautiful continent, each milestone further contributing to Genertec International's broader vision of an interconnected, digital Africa.

▲ Field Construction work in Côte d'Ivoire

▲ Equipment in Ghana (telecommunication site)

Building a Global 3D Digital New Infrastructure: CG Model Network Creates a Cross-Border Creative Digital Collaboration Network

▲ Dynamic Display of Global Data on CG Model Network

Applying Institution

Global 3D Digital Content Ecosystem of CG Model Network

Countries and Regions Covered or Involved in the Implementation

124 countries and regions such as China, Australia, the United States, Canada, and France

Amid the global wave of digital transformation, 3D digital assets have become core production elements across industries such as film, gaming, animation, and industrial design. To accelerate the development of global network infrastructure and enhance the efficient circulation of digital assets, CG Model Network has built an integrated 3D digital asset trading and collaboration platform spanning over 124 countries and regions, serving as a pioneering example of the "Digital Silk Road" in the creative economy.

Improving Global Digital Infrastructure to Promote Efficient Cross-Border Data Circulation

Relying on high-performance cloud computing and edge computing nodes, CG Model Network has built a full-process infrastructure network covering the production, rights confirmation, transaction, and application of digital assets. The platform has served over 2.18 million users worldwide, supported cross-border circulation of 3D model data for more than 3 million times, and achieved a cumulative transaction volume exceeding 200 million yuan.

Through the integration of blockchain-based copyright authentication and smart contract technology, CG Model Network has pioneered full-lifecycle digital copyright management, ensuring the compliance and traceability of cross-border data transactions. Its services span multiple global industries, including film and animation, gaming, aerospace, and defense, establishing itself as a vital bridge connecting global creators and enterprises.

Meanwhile, CG Model Network has partnered with China's leading tech enterprises—Tencent, Baidu, and Alibaba—to provide low-latency, high-reliability 3D digital asset management for international organizations. The platform also collaborates with global 3D resource libraries such as Evermotion and MaxTree, introducing world-class 3D assets into China and promoting the seamless global circulation of digital resources.

Innovating a "Technology + Compliance" Dual-Driven Model to Strengthen Global IP Protection

Supported by a new generation of information infrastructure, the platform has built three core systems:

Technology Support System: The platform has developed a distributed data asset management system that enables the full online lifecycle of copyright confirmation, transaction, and distribution, ensuring efficient, secure, and compliant operations. In August 2025, it officially became a governing member of the China Copyright Association.

Global Collaboration Network: By utilizing multilingual collaboration tools and global CDN nodes, CG Model Network reduces communication latency in cross-border creative workflows. Through initiatives such as educational programs, training, and international exhibitions, it promotes cultural exchange and talent collaboration. For example, the “Trend Led by Me” CG Art Exhibition held in 2022 attracted artists from Singapore, France, and other countries, significantly enhancing the platform’s international influence.

Cross-Border Compliance System: The platform assists governments in formulating cross-border digital copyright protection standards and optimizing international data transmission protocols, reducing enterprises’ copyright dispute risks by 70%. To date, CG Model Network has served over 5,000 enterprises across industries such as film, gaming, education, and industrial manufacturing—helping SMEs integrate into the global digital supply chain and shortening project delivery cycles by 50%.

▲ Serving Over 5,000 Enterprises Cumulatively (Pictured: Representatives of Some Clients)

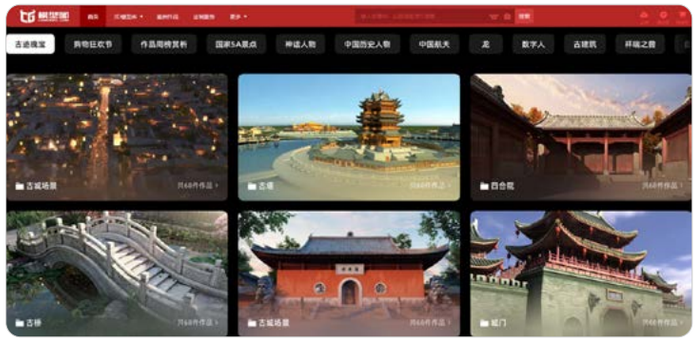
Promoting Digital Inclusiveness and Contributing to a Shared Future in Global Cyberspace

Empowering Creators: The platform supports hundreds of thousands of creators worldwide in conducting cross-border collaboration, with an average annual income increase of over 10,000 yuan per individual, benefiting users in many developing countries. The platform continues to sign contracts with a number of 3D designers from around the world. In September 2025, world-renowned Thai 3D artist Massimo Righi signed an exclusive partnership with CG Model Network for the Chinese market.

Reducing Costs and Increasing Efficiency for Enterprises: It helps small and medium-sized enterprises reduce 3D content production costs by 60%-80% and has integrated into the ecosystems of leading enterprises such as Huawei, Baidu, and Tencent. In 2025, it served as the exclusive 3D digital partner for important projects such as 80 Years, 80 Items by People's Daily, National Museum of China, and Baidu Encyclopedia, as well as Baidu Encyclopedia's Digital Cultural Relic Protection Program.

Digital Dissemination of Culture: CG Model Network has built 3D digital libraries for traditional Chinese cultural assets such as ancient architecture and cultural relics, facilitating cross-border cultural data exchange. These models have been accessed and utilized by organizations in dozens of countries, advancing the global visibility of Chinese heritage.

By adhering to the principles of connectivity, openness, and inclusiveness, CG Model Network not only enables the efficient global circulation of 3D digital assets, but also promotes cross-cultural exchange and mutual learning between China and the world. Moving forward, the platform will continue to optimize global digital infrastructure, strengthen cross-border policy coordination, and promote stronger IP protection, contributing to the creation of an open, secure, and inclusive global digital creative ecosystem.



▲ 3D Asset Library of Chinese Traditional Culture on CG Model Network

China Telecom Jointly Shaping a New Chapter of Digital Silk Road, Driving the Leap of the Philippines' National Network Infrastructure

Applying Institution

China Telecommunications Corporation

Other Participating Organizations

CCSPC, Huawei, ZTE, Huaxin PT, and Nokia

Countries and Regions Involved

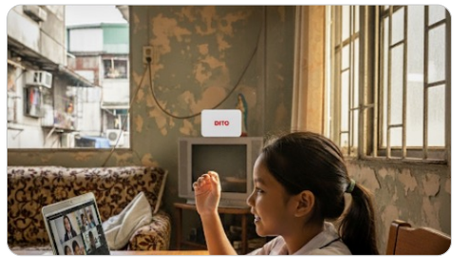
China, Philippines

Since 2020, DITO Telecommunity,jointly developed by China Telecom and local partners in the Philippines, has deployed over 9,000 4G and 5G base stations on a 5G Standalone(SA)+4G converged network with a cloud-native architecture, covering approximately 86% of the Philippine population. The network earned the OOKLA SpeedTest Award for the #1 Mobile Network in the country. Through cross-border connections via Hong Kong and Singapore, and leveraging Uptime-certified core and edge nodes along with green data centers, the project has established a replicable telecommunications model tailored for archipelagic regions. Currently,DITO serves more than 15 million users across over 950 cities, reducing local data traffic costs by around 80%. Innovative technologies and services, such as RedCap FWA, now reach over one million households, significantly improving the affordability of digital education, healthcare, and SME operations, while also generating approximately 30,000 jobs nationwide.

Seamless Connectivity, Excellent Network Experience: Empowering the Philippines into a New Digital Era

For a household who lives in Metro Manila, reliable internet was once out of reach. Without fiber connectivity, they relied on unstable mobile hotspots—children's online classes constantly buffered, and remote meetings were frequently interrupted. Today, thanks to DITO Telecommunity's 5G Fixed Wireless Access (FWA) service, the family enjoys seamless connectivity. With a simple plug-and-play CPE device, video lessons, virtual meetings, and online payments now run smoothly. This transformation is made possible by DITO's network, deployed since 2020 on a converged 5G SA and 4G LTE architecture, delivering average speeds exceeding 55 Mbps and covering most of the Philippine population.

▲ Ookla's Rated #1 Mobile Network award is determined by real user feedback collected through the Speedtest.net website and Speedtest app



▲ A student is attending online classes,in an aging apartment block locates at a local community of Metro Manila

As the Philippines' third-largest telecommunications operator, DITO Telecommunity is a landmark joint venture between Philippine and Chinese partners, combining capital and technology. Over five years, the project has successfully passed all government milestone audits, significantly improving national network connectivity and providing a replicable "zero-to-one" infrastructure model for archipelagic developing countries. DITO has been awarded the OOKLA SpeedTest "#1 Mobile Network" three consecutive times and recognized internationally by organizations including ATEA and PMI. It stands as a model for successful 5G deployment, global technology expansion, and mutually beneficial China-Philippines cooperation.

Smart and Convergent Co-construction: Driving Innovation and Intelligent Deployment to Forge a "Philippine Model" of Digital Infrastructure

The Philippines' archipelagic geography presents formidable telecommunication challenges. To address this, the project adopted a distributed network architecture, deploying core data centers and edge cloud nodes nationwide. Leveraging green modular IDCs and an AI-driven DCIM system, it enhances network performance and sustainability while reducing backbone resource usage. During severe tropical storms in the rainy season, island base stations can automatically switch to regional nodes within minutes, ensuring uninterrupted video consultations at local clinics.

As the only operator to achieve full-scale commercial deployment of a 5G Standalone network, DITO leads in establishing a new-generation digital infrastructure system centered on 5G SA, cloud-network convergence, and intelligent operations (AIOps). Built on a cloud-native architecture that integrates 4G/5G converged core networks and fixed-mobile IMS systems, the network enables unified deployment across consumer (ToC), home (ToH), and business (ToB) services, significantly improving network agility and resource orchestration. In navigating the challenges of an archipelagic nation, DITO developed a scalable and replicable model of regional integration, intelligent scheduling, and local coordination, offering emerging markets worldwide a practical blueprint for building resilient, future-ready networks.

▲ A new digital infrastructure system centered on "5G Standalone + Cloud-Network Convergence + AIOps"

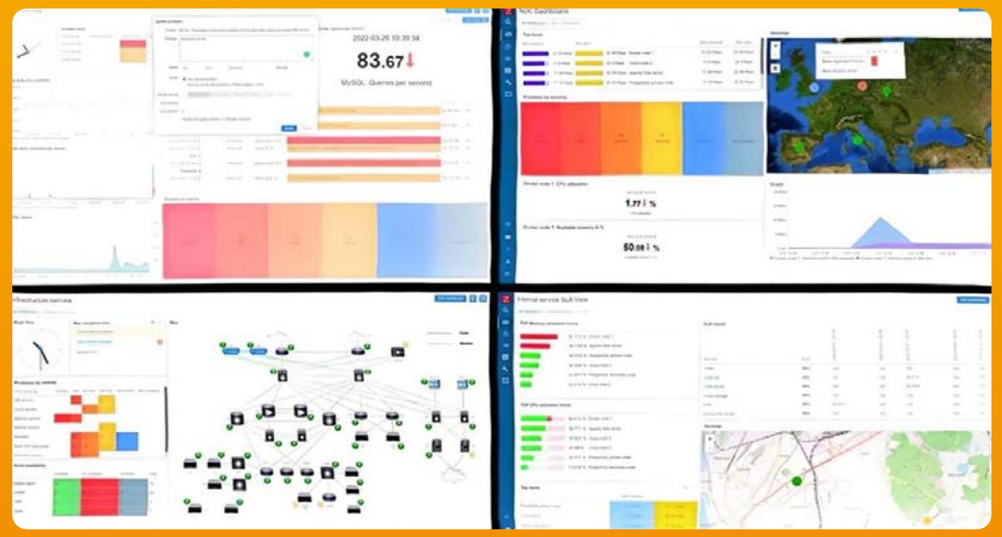
▲ A base station on a small island in the central Visayas region of the Philippines remained operational during a severe weather in the rainy season

Affordable and Sustainable: Lighting Up the Connectivity Dreams of Thousands Islands and Laying a Solid Foundation for Sustainable Digital Inclusion

The rise of DITO has significantly advanced digital inclusion in the Philippines, reshaping the telecom market and promoting greater affordability. Since its commercial launch, DITO has attracted over 15 million users and extended network coverage to more than 950 cities, dramatically lowering access barriers. Mobile data costs have fallen by around 80%, enabling more families and students to “afford and enjoy” high-quality connectivity. DITO’s pioneering 5G RedCap FWA service now reaches over one million households nationwide, broadly supporting digital transformation in education, healthcare, and SMEs. The project is expected to generate more than 30,000 local jobs and stimulate trillion-peso-level growth in the digital economy. By delivering low-latency, high-speed 5G connections, DITO has effectively narrowed the digital divide between urban, rural, and island communities, establishing an inclusive network ecosystem with extensive reach, reliable service, and excellent user experience. For example, university students in Cebu no longer struggle with unstable connections and can now complete online courses and remote internships smoothly and affordably.

▲ Concept Art for Lighting Up The Connectivity Dreams Of Thousands Islands and Laying A Solid Foundation for Sustainable Digital Inclusion

Research and Practice on an Intelligent Monitoring System for Large-Scale Distributed IT Infrastructure



▲ Overview of the IT Infrastructure Intelligent Monitoring System

Applying Institutions

Anhui University of Finance and Economics, Shanghai Hongshi Data Systems Co., Ltd., Zabbix SIA/LLC

Other Participating Organizations

Riga Technical University, Dublin City University, Fukuoka University (Japan), University of Oslo (Norway), Bodleian Library, University of Oxford, Bank of China, CTC System Management Co. Ltd., IBM, VMware, Novell, etc.

Countries and Regions Covered or Involved in the Implementation

40 countries and regions such as China, Latvia, Ireland, Germany, and Spain

Under the wave of globalization and digitalization, the complexity of large-scale distributed IT infrastructure is increasing, making traditional monitoring models unsustainable. This case study uses Anhui University of Finance and Economics as an example. It deeply analyzes how they leveraged the open source software Zabbix, Grafana, and WeChat for Business for secondary development, incorporating the iFlytek Spark large language model to implement a distributed intelligent monitoring and early warning system. Building a unified, intelligent, and scalable, three-dimensional intelligent monitoring system has important theoretical and practical significance for ensuring smooth network operation and the stable operation of core business systems.

Intelligent Monitoring for a Globally Connected Era: Ensuring Secure and Stable IT Infrastructure through Open-Source Innovation

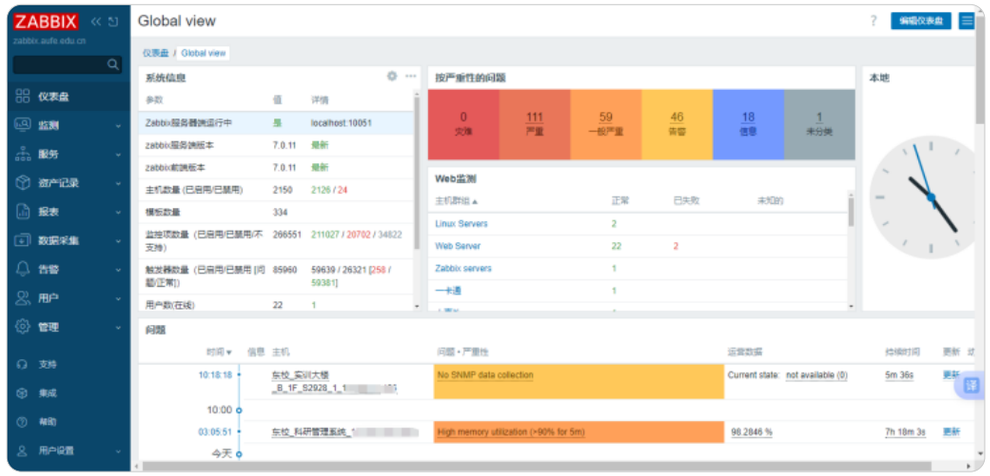
Zabbix is a globally recognized open-source monitoring solution with an extensive and active international ecosystem. It has established 258 partnerships across North America, South America, Europe, Asia, and Australia, continuously expanding its global footprint. With its comprehensive functionality and proven stability, Zabbix has been widely applied in key sectors including government, finance, insurance, information technology and telecommunications, healthcare, energy, power, transportation, manufacturing, education, and retail. It provides reliable and efficient infrastructure monitoring support for institutions and enterprises of various scales, contributing to the secure and stable operation of global IT systems.

NORTH & CENTRAL AMERICA		SOUTH AMERICA		EUROPE		ASIA & OCEANIA		AFRICA	
Canada	3	Argentina	4	Austria	2	Australia	1	Morocco	2
Mexico	9	Brazil	19	Belgium	3	Cambodia	1	Nigeria	1
美国	10	Chile	2	Bulgaria	2	India	6	Tunisia	1
		Colombia	4	Croatia	2	Indonesia	1		
		Ecuador	2	Denmark	2	Israel	1		
		Peru	2	Finland	1	Kazakhstan	2		
		Uruguay	2	France	6	Malaysia	3		
		Venezuela	1	Greece	3	Nepal	1		
				Italy	5	Saudi Arabia	2		
				Lithuania	1	Singapore	1		
				Poland	8	South Korea	5		
				Portugal	1	Thailand	3		
				Romania	1	Vietnam	2		
				Serbia	3	中国	39		
				Slovakia	3	日本	62		
				Spain	10	阿拉伯联合酋长国	2		
				Turkey	5				
				乌克兰	1				
				匈牙利	2				
				德国	6				
				拉脱维亚	3				
				捷克共和国	6				
				瑞典	1				
				瑞士	3				
				英国	2				

▲ 258 partners in 55 countries worldwide

Intelligent Operations and Maintenance Empowered by Large Language Models: Building a Predictive and Scalable Unified Monitoring System

Based on an open-source distributed monitoring framework, Anhui University of Finance and Economics developed an overall architecture and logical design integrating protocols such as SNMP, ICMP, and IPMI, along with client-side software agents. The system covers monitoring types, performance indicators, alert mechanisms, data storage, and reporting. Building on this foundation, the university conducted secondary development on open-source platforms including Zabbix, Grafana, and WeChat of Business, while introducing the iFlytek Spark Large Language Model to establish intelligent response and distributed monitoring and early-warning capabilities. The system enables IT administrators to promptly detect and resolve network and application failures in real time. Through analytical reporting, it can also intelligently predict potential issues in data center power environments, networks, and business systems, allowing for proactive maintenance planning. This solution has significantly enhanced operational efficiency and service quality, ensuring smooth network performance and the stable operation of core business systems.



▲ Anhui University of Finance and Economics Intelligent Monitoring System Overview

Driving Global Business Value: Improving Efficiency, Reducing Costs, and Making Enterprise-Level Intelligent Monitoring Accessible.

As a typical case in the education industry, Anhui University of Finance and Economics leverages outstanding open-source projects such as Zabbix, Grafana, WeChat Work, and iFlytek Spark Large Language Model (developed by iFlytek). These projects have broken the previous situation where advanced technologies were monopolized by a handful of industry giants. Whether it is large enterprises with abundant funds, small and medium-sized institutions with limited budgets, or even public service sectors like education and healthcare, all can equally enjoy the benefits brought by top-tier intelligent monitoring technologies.

The widespread adoption of intelligent monitoring has transcended industry boundaries, extending from the IT frontier to traditional sectors such as manufacturing, logistics, and finance, thereby accelerating digital transformation across industries.

In practice, this system has not only advanced technological progress but also generated significant social and economic benefits. It has stimulated demand for emerging technical skills, promoted talent cultivation and employment in related fields, and encouraged the efficient use of resources. By supporting the principles of “Green IT,” it contributes to the sustainable development of both society and the environment.

▲ Comprehensive monitoring

▲ Industry-wide monitoring

Committed to open source innovation and global community collaboration, leading a new era of observability.

The practice of this case demonstrates Zabbix's significant contributions to driving industry innovation and building a global technology ecosystem. The Zabbix Global Summit, held annually in Riga, Latvia, attracts hundreds of technical experts, business executives, and community members from over 40 countries, becoming a key platform for knowledge sharing and technical exchange in the global monitoring industry.

▲ 2024: The 12th Zabbix Global Summit in Riga, Latvia

▲ 2025: Zabbix Global Summit in Shanghai, China

ZTE's Signal Reach Program in Africa: Empowering Digital Equity

▲ ZTE Helps Signal Reach in Africa with Innovative Products and Efficient Deployment, Empowering Digital Equity

Applying Institution

ZTE Corporation

Countries and Regions Covered or Involved in the Implementation

Liberia, Egypt, South Africa, and Zambia

Africa faces a significant digital divide. According to the data from GSMA on mobile Internet connections, 59% of the population in Sub-Sahara cannot access the Internet. As stated in the ITU report, about 75%-80% of Liberians could not access the Internet in 2023, which greatly hinders local economic and social progress. ZTE Corporation (hereinafter referred to as "ZTE") has launched the Signal Reach in Africa Program, focusing on network infrastructure construction to deliver efficient site coverage, green energy, and affordable terminals, empowering Africa's digital transformation.

ZTE Makes Breakthrough in Infrastructure Construction to Bridge the Digital Divide in Africa

Since entering the African market in 1997, ZTE has continuously upgraded network infrastructure, deploying communication networks in over 50 African countries and regions, serving more than 400 million users. Through the Signal Reach in Africa Program, ZTE is committed to extending digital connectivity to every corner of the continent, providing stable and efficient network services to underdeveloped areas.

In Liberia, ZTE has deployed 128 ecological sites in only three months, benefiting more than 580,000 rural residents. In Egypt, it built high-speed broadband networks for more than 1,500 villages, covering nearly 10 million people. In Zambia, ZTE partnered with MTN Zambia to build the first 100G+ backbone optical fiber network, enhancing connectivity between Lusaka and southern border cities. In South Africa, ZTE achieved Africa's first ultra-long-distance marine 5G coverage, improving site availability to 98%, increasing energy efficiency by 15%, and reducing overall costs by 30%.

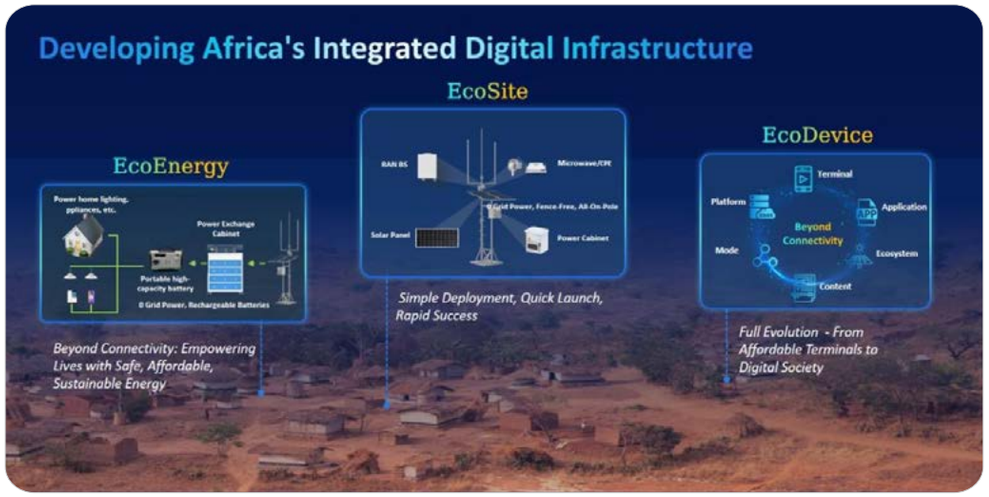
▲ In the Enhancing Rural Area project in Liberia, after the site in the Congo area was completed, the engineers took a photo with the local villagers.

▲ In the Enhancing Rural Area project in Liberia, children in Alasala were happy to display their drawings on ecological sites.

ZTE's End-to-End Network Deployment Promotes Sustainable Development Through Innovation

The Signal Reach in Africa Program uses Africa's abundant solar energy to deploy low-cost, high-efficiency ecological network sites, innovatively providing reliable Internet access to underserved areas.

In site construction, the EcoSite solution adopts broadband mobile communication technologies to achieve rapid network upgrades, reducing power consumption and O&M costs. Each site can go online within one week on average, cutting deployment costs by 70% and time by 60%, ensuring fast, economical, and sustainable implementation. In energy supply, the EcoEnergy system operates entirely on solar power, eliminating dependence on traditional grids and diesel. The iEnergy management software optimizes energy usage, increasing efficiency by 30% above industry standards. In device promotion, the EcoDevice solution delivers affordable smartphones and CPE devices tailored for African markets, supporting multiple local languages and dialects. These accessible devices meet the needs of low-income users and accelerate digital adoption across communities.



▲ ZTE Promotes Sustainable Development with Innovative Technologies

ZTE's Signal Reach Program Lights Africa's Digital Future

ZTE's Signal Reach in Africa Program not only provides advanced telecommunications infrastructure for the continent but also creates long-term value for sustainable development and social inclusion. By improving digital connectivity and information flow, it drives economic growth, creates employment opportunities, supports education and skills training, and promotes social equity. The program illuminates Africa's digital future—turning connectivity into opportunity and ensuring that technological progress benefits everyone, everywhere.

▲ In the Mankinto area of Liberia, the family of the rural network were watching documentaries through the network.

▲ In a school in the Duo area of Liberia, teachers were teaching students geographical knowledge through the network.

Bank of Communications' "Digital Silk Road": Building a Global Financial Services Highway

▲ Bank of Communications (BOCOM) is committed to developing an enterprise-level financial backbone network featuring high-speed connectivity, universal coverage, seamless integration, and trusted security

Applying Institution

Bank of Communications

Countries and Regions Covered or Involved in the Implementation

17 countries and regions such as China, Brazil, Canada, the Czech Republic, and France

Amid the accelerating digital transformation of global finance, ensuring the security, stability, and efficiency of cross-border connectivity has become a core challenge for major banks. Confronted with the limitations of traditional network architectures—such as insufficient stability, limited geographical coverage, and complex operations and maintenance—BOCOM has adopted Segment Routing over IPv6 (SRv6) as its technical foundation and integrated 5G technologies to build a next-generation global financial backbone network. This initiative This initiative establishes a highly reliable, extensively connected, and intelligent network, providing a replicable model for network upgrades across the global financial industry.

Breaking Network Barriers: Embarking on a New Journey Along the Digital Silk Road

Facing challenges such as limited stability, rigid resource allocation, and restricted geographical coverage in traditional networks, BOCOM has proactively built a next-generation enterprise-level backbone network based on SRv6. Leveraging multi-tier virtual private networks (VPNs) and 5G technologies, the network achieves reliable, broad, and intelligent global connectivity. Integrating cutting-edge innovations such as SD-WAN, in-situ Flow Information Telemetry (iFIT), and quantum encryption, the project provides financial institutions with a more secure, efficient digital infrastructure.

Since its launch in 2022, this “digital highway” has connected 45 BOCOM institutions across China and seven overseas branches in Dubai, Frankfurt, Tokyo, Ho Chi Minh, Seoul, New York, and Toronto. By the end of this year, all 19 overseas branches are expected to be fully integrated into the network. This milestone marks true group-wide interconnection—connecting communities across China and reaching even the most remote frontiers; linking the Asia-Pacific nearby and extending further to the Americas and Africa.

▲ “Digital Silk Road” new infrastructure: Weaving a Global Financial Service Highway Network

Building Networks: Empowering Global Interconnection through SRv6-Driven Intelligent Backbone

At the core of the project lies SRv6 technology, which integrates diverse network forms including dedicated private lines, bare fibers, 5G, and the public Internet into a unified backbone architecture. This innovation breaks through the congestion and rigidity of traditional networks, enabling seamless connectivity between BOCOM’s head office and global branches. The system dynamically computes routing paths and allocates traffic based on real-time bandwidth and latency demands, while intelligent controllers ensure automatic load balancing across nodes. Together, these capabilities secure stable and efficient transmission of critical financial data, significantly improving backbone link utilization.

Securing Networks: Establishing a Dual-Engine, Self-Driving Infrastructure for Greater Resilience

The project pioneers a dual-engine architecture combining 5G virtual private lines and physical fixed private lines. ensuring automatic traffic switching in the event of link failure and eliminating single-link capacity bottlenecks.. With SRv6 and intelligent controllers providing autonomous routing computation, network O&M have evolved from manual intervention to automated scheduling, enhancing the reliability and resilience of global financial data transmission.

Intelligent Networks: Advancing Smart O&M with an Elastic Data Pipeline

By deploying iFIT and real-time Telemetry monitoring, the system achieves millisecond-level precision in detecting network quality and service performance, offering real-time assurance for cross-border financial transactions. Meanwhile, the use of Optical Transport Network (OTN) elastic pipeline technology enables on-demand, minute-level bandwidth expansion and adjustment during traffic peaks, greatly improving customer experience and supporting efficient global operations.

▲ Advancing China-Africa Cooperation in Science, Technology, and Innovation

Inclusive Networks: Setting a New Industry Benchmark with Cost Efficiency and Broad Coverage

BOCOM's next-generation enterprise backbone network leverages technological innovation to overcome the geographical constraints of traditional financial services. It supports inclusive finance in remote regions of China while connecting Europe, the Americas, and the Asia-Pacific, providing more efficient and stable services for cross-border enterprises and individual customers.

▲ 5G financial vehicle in Xizang, making financial services available across the snow plateau

Through iFIT in-situ flow detection and WAN redundancy elimination, the cost of wide-area transmission bandwidth has been significantly reduced, saving over CNY 10 million annually. Meanwhile, the integration of OTN elastic pipelines and 5G private networks enables new business models such as smart branches and unmanned banks, continuously expanding the boundaries of financial services. By adopting China-made IT innovation equipment and self-developed technologies, the project delivers a replicable "BOCOM Solution" that empowers the broader financial industry.

02

Online Cultural Exchanges and Mutual Learning

Building an Online Platform for Cultural Exchanges and Mutual Learning

Outstanding Case

Ceramics Bridging Global Cultures: The Digital Ceramic City of Jingdezhen Fosters a New Ecosystem for Cross-Cultural Exchange in Ceramics

▲ Information of ancient genetic ceramic specimens

Applying Institution

Jingdezhen Network Security and Informatization Center

Countries and Regions Covered or Involved in the Implementation

13 countries and regions such as China, the United Kingdom, Germany, France, and Italy

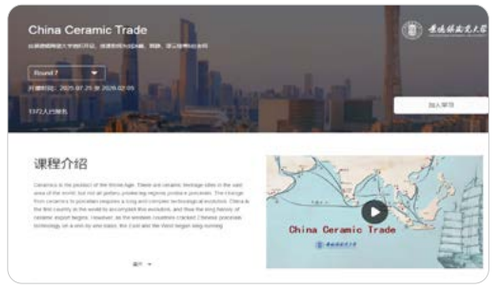
Today, the Jingdezhen Network Security and Informatization Center is using the "Internet + Ceramics" initiative as an innovation engine to build the Digital Porcelain Capital platform. Through digital technology, it revitalizes ceramic heritage, integrates global ceramic cultural resources, and promotes in-depth cross-border and intercultural exchanges, injecting new momentum into the digital preservation and transmission of the world's intangible cultural heritage.

Global Digital Connectivity: Building a New Platform for Ceramic Culture Together

Jingdezhen's "Thousand of Museums and Porcelain Pieces" project, under the Exploration Plan 2024, achieves both high optical fidelity and precision accuracy in digital ceramic preservation. Working alongside the Global Ancient Ceramics Gene Bank, it builds a bridge for worldwide cultural exchange in ceramics and promotes open sharing of digital ceramic resources through national and international collaboration. Hundreds of representative Jingdezhen artifacts—including Yuan dynasty blue-and-white porcelain, Ming and Qing imperial kiln pieces, and fine folk kiln works—have been reconstructed in ultra-high-definition digital form, allowing global audiences to admire these treasures of human civilization without leaving their homes.

The platform also launched the electronic journal "China Ceramic", global ceramic MOOCs, and a 3D cloud exhibition matrix. The "China Ceramic Trade" course attracted xx people to sign up, covering over 60 million overseas audiences; digital experience centers were set up in international cities such as New York and Paris to make ceramic culture accessible; relying on the "Bird Migration Project", more than 4,200 international young artists from 52 countries were invited to stay and create, and Canadian young artist Christopher Reid Flock created the IFocus work through the method of hand-pulling, making ceramics a "universal language" for cross-civilization dialogue.

▲ The official website of the electronic journal "Chinese Ceramics"



▲ Ceramic University English MOOC - China Ceramic Trade

Digital technology empowers and revives the new vitality of ceramic culture

Jingdezhen has redefined the global ceramic culture ecosystem through technological innovation. By leveraging its proprietary "time-domain technology" for digital optical twins, it has successfully established the "Thousand Museums and Ten Thousand Porcelain Pieces—Digital Asset Repository of Jingdezhen Ceramic Cultural Heritage," a platform that integrates high-fidelity optical authenticity with versatile multi-scenario applications. In conjunction with the world's first ancient ceramic gene bank, this initiative has enabled the development of the "World Porcelain Interactive Map," which visually traces the historical dissemination routes of ceramics across continents. Meanwhile, its innovative "One Porcelain, One Chain" system has built blockchain-based digital artisan profiles for 687 heritage inheritors and provided certification for over 100,000 high-end porcelain artworks.

Built upon China's first vertical industrial Internet platform, the system enables full-process intelligent collaboration—from production techniques to cross-border e-commerce. Over 90 million identifiers empower more than 100 "Jingdezhen-made" ceramic enterprises, each with a unique traceability code that lets consumers access detailed production and logistics data by scanning a QR code. The platform connects over 1,900 enterprises and 700 brands, creating a digital ceramic ecosystem linking research, education, and industry. For example, Jingdezhen Nizhige Ceramics Co., Ltd. sold 30,000 units of its Swan Flower Basket tableware through the platform, showcasing the tangible impact of digital transformation in traditional crafts.

▲ Information of ancient genetic ceramic specimens

▲ The world's first Ancient Ceramics Gene Bank

A Dual Win for Culture and Economy: Empowering Global Ceramic Practitioners

The establishment of the "Digital Porcelain Capital" platform has enabled the benefits of ceramic culture to reach the entire world. Economically, it has driven digital transformation across 1,900 enterprises, facilitated transactions exceeding 20 million yuan, boosted exports of cultural and creative products by 45%, incubated over 60 international cultural IPs, and lifted related trade volume beyond 500 million yuan.

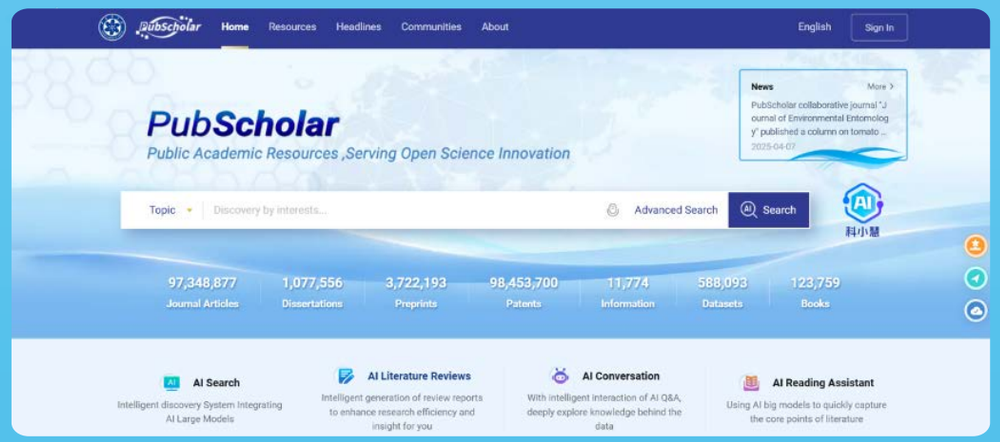
Socially, the "Ceramic Classroom on Your Fingers" has recorded over 60 million visits annually. The 2024 Silk Road Ceramic Tour digital exhibition achieved over 150 million global impressions, while the Foreign "Jing Piao" Talk about China media series co-produced with national outlets gained 180 million views, allowing global audiences to better appreciate Jingdezhen's ceramic legacy. Through blockchain technology, digital rights for 687 intangible cultural heritage inheritors have been effectively protected, ensuring sustainable transmission and innovation of cultural assets. The platform has also created 23,000 new jobs, truly achieving "vibrant cultural inheritance and secure livelihoods," and providing replicable experience for the revitalization of intangible heritage and global well-being.

▲ The Z Generation International Youth Ceramic Art Creation Camp had started its activities at Jingdezhen Ceramic University, where the participants were engaged in painting.

▲ "Foreign 'Jing Piao' Talk about the China" series of activities

Outstanding Case

PubScholar: Building a New Ecosystem for Global Open Science Sharing



▲ PubScholar, a Non-Profit Academic Platform

Applying Institution

National Science Library, Chinese Academy of Sciences (NSLC)

Other Participating Institutions

Cooperative Supporters: National Science and Technology Library; Computer Network Information Center, Chinese Academy of Sciences; China Science Publishing & Media Ltd. (CSPM); China National Intellectual Property Administration; Chongqing VIP Information Co., Ltd.; China National Knowledge Infrastructure(CNKI); Beijing Zhongke Import & Export Ltd.; Beijing Wanfang Data Co., Ltd.; CNGBdb; Journal Management Department of Northeast Forestry University; Directory of Open Access Books; DOAJ; Open Books Hong Kong; The Russian Academy of Sciences Library; OpenAIRE AMKE; Cambridge University Press; Charlesworth Author Services; WILEY; MDPI; frontiers; IWA Publishing; Taylor & Francis; ACS Publications; AGU; IOP Publishing; Microbiology Society; PNAS; BioOne Digital Library; Oxford University Press; SPIE; Bentham Science; Frontiers Journals; IEEE; Tech Science Press (TSP); Sage; American Institute of Physics (AIP); Springer Nature;

Technical Supporters: IFLYTEK Co., Ltd.; Beijing Magtech Science & Techology Development Co.Ltd.; Beijing Renhe Huizhi Information Technology Co., Ltd.; ScienceOne;

Countries and Regions Covered or Involved in the Implementation

190 countries and regions such as Russia, the United States, Singapore, and South Africa

Against the backdrop of the commercialization of global academic resources and unbalanced regional development, barriers to knowledge access have been increasingly high, with researchers in remote areas often excluded from the scientific frontier due to high literature costs or scarce resources. The National Science Library, Chinese Academy of Sciences, in collaboration with dozens of institutions worldwide, has innovatively launched PubScholar, a public-interest academic platform. Adhering to the core philosophy of "Joint Consultation, Co-construction and Shared Benefits", the platform builds open science infrastructure, serving as a practical model to reshape the global academic ecosystem and promoting the construction of a community with a shared future in cyberspace.

Transcending Boundaries to Weave a Global Academic Resource Sharing Network

The platform has integrated high-quality academic resources from the Chinese Academy of Sciences and global open access resources, and also established strategic cooperation with international authoritative institutions such as OpenAIRE of the European Union to achieve data interconnection and service docking. Since its launch in November 2023, the platform has aggregated around 190 million academic resources worldwide, including journal articles, patents, scientific datasets, and preprints, with approximately 88.51 million full texts accessible via open access. Its service network now spans 190 countries and regions, including 39 Belt and Road countries, attracting over 36.1 million overseas visits and exceeding 1.45 billion annual visits. The platform has not only achieved a leap from "resource introduction" to "standard output" but also serves as a vital bridge for North-South academic dialogue and supports the development of knowledge platforms in developing countries.

▲ PubScholar: Resource Cooperation Model

Technology Empowerment Reshapes a New Paradigm for Academic Services

Focusing on the core needs of global researchers, PubScholar has built a large model for scientific and technological literature, and launched a series of intelligent tools such as AI retrieval, intelligent summarization, AI Q&A, and in-depth literature reading. It comprehensively improves the efficiency and quality of literature acquisition, interpretation, review writing, and scientific research Q&A, thus completely transforming the traditional academic service model.

To overcome language barriers faced by researchers worldwide, the platform supports all six official UN languages (Chinese, English, French, Russian, Spanish, and Arabic) and provides automatic multilingual literature translation. Argentine scholars can translate English papers into Spanish with one click, and Egyptian researchers can convert Chinese literature into Arabic, which greatly improves the efficiency of cross-regional scientific research achievement sharing. Meanwhile, the platform has innovatively built an academic exchange and knowledge sharing system based on open peer review, breaking the closed nature of traditional journal review. Global scholars can participate in online paper review and put forward professional opinions, while journal publishers can optimize the review process relying on platform data. This collaborative construction model of "Scientists + Scientific Research Institutions + Journal Publishers" is gradually forming a new ecosystem of open scientific research services.

▲ PubScholar: An Open Academic Exchange Ecosystem with Multiple Subjects

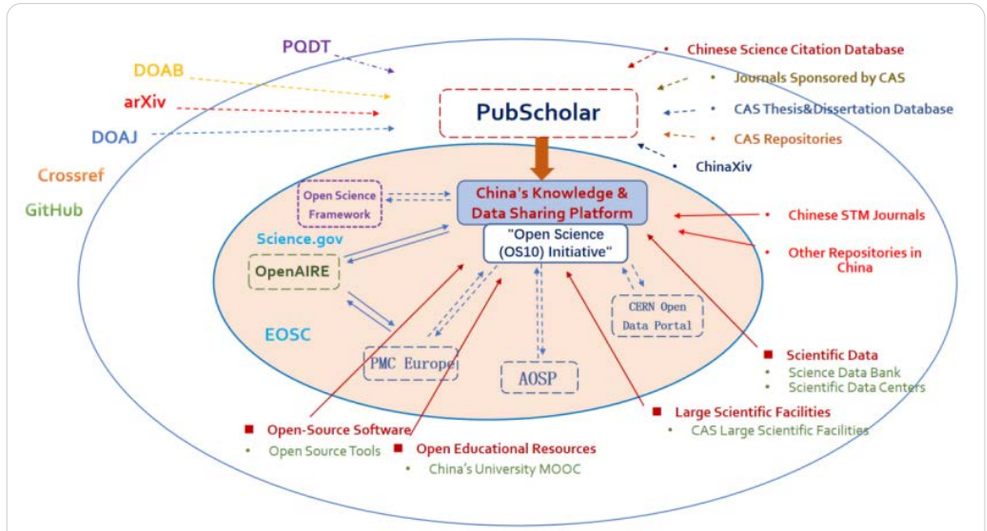
Open Sharing Illuminates the Prospects of Global Scientific Research

The core value of PubScholar lies in truly making academic resources accessible and inclusive, benefiting researchers from different regions and backgrounds around the world. At the social benefit level, the platform has broken the resource monopoly of commercial publishing institutions. Statistics show that the platform has cumulatively saved global scholars billions of yuan in literature access costs, preventing researchers in remote areas and developing countries from missing scientific research opportunities due to resource scarcity.

In terms of cultural and scientific communication, the platform promotes cultural mutual learning through multilingual support, which has been highly recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO). In February 2025, the platform was officially incorporated into the international project of UNESCO's "Open Science (OS10)

Initiative". Relying on this cooperation, the platform further promotes the construction of new types of swarm intelligence scientific research infrastructure such as open science platforms and scientific clusters, with a particular focus on providing technical support to Global South countries.

From China to the world, and from researchers to academic institutions, PubScholar utilizes open science to bridge geographic, linguistic, and cost barriers, contributing to a more open, inclusive, fair, and equitable global research community.



▲ "Open Science (OS10) Initiative" Sharing Network

Outstanding Case

"Digital Heritage" Hackathon — Global Youth Co-create a New Future for Cultural Heritage

▲ 2025 "Digital Heritage" Hackathon Finals

Applying Institution

Nanjing Great Bao'en Temple Ruins Museum

Other Participating Institutions

UNESCO; Royal College of Art; University College London; Goldsmiths, University of London; University of Bristol; Future Laboratory of Tsinghua University; School of Architecture at Southeast University; School of History and Cultural Heritage at Nanjing Normal University; School of Digital Media and Design Arts at Beijing University of Posts and Telecommunications; School of Industrial Design at Nanjing University of the Arts; School of Design at Shanghai Jiao Tong University; Hong Kong University of Science and Technology (Guangzhou), Division of Computational Media and Arts; School of Drama, Film and Television at communication University of China; School of Digital Media at Beijing Film Academy; Jiangsu Institute of Art and Science; Beijing Institute of Graphic Communication; Communication University of China, Nanjing; Institute of Cultural and Creative City, Jiangsu, China;

Countries and Regions Covered or Involved in the Implementation

19 countries and regions such as China, the United States, the United Kingdom, France, and Spain

Throughout human history, countless cultural heritages have gradually disappeared due to disasters and the passage of time. As a vital node on the Maritime Silk Road, the Glazed Pagoda of the Great Bao'en Temple in Nanjing once stood among "the Seven Wonders of the Medieval World", symbolizing the fusion of Eastern and Western civilizations. Today, only its ruins remain, recounting its past glories. To address the challenges of heritage inheritance, the Great Bao'en Temple Ruins Museum adopts the concept of 'Digital Heritage', integrates digital technologies with global collaboration, and invites global youth to rekindle human memory through creativity and embark on new practice in cultural heritage conservation.

Cultural Heritage and International Communication: Exploring a Global Collaborative Model for Ruins Preservation

The Great Bao'en Temple has embodied international connectivity since ancient times, revitalizing itself in the current digital era. Since the 17th century, this "Chinese Porcelain Tower" has been regarded by the West as a symbol of Chinese culture, with its surviving relics currently scattered across more than 30 cultural institutions in nearly 10 countries. Based on this legacy, the Great Bao'en Temple Ruins Museum launched the "Digital Heritage" Hackathon in 2024, attracting over 1,000 young creatives from 19 countries, guided throughout the competition by more than 20 international experts. Together, they explored a global collaborative and innovative model for cultural heritage conservation.

In this event, young creatives from around the world jointly explored the charm of the Glazed Pagoda of the Great Bao'en Temple. Using open digital tools and shared technological resources, they delved into the deep values of cultural heritage. The multinational team "Echo Silk", composed of young participants from China, Azerbaijan, and India, employed augmented reality (AR) and responsive lighting systems to make 72 carbon-fiber rods shaped like reeds "chime with the wind", recreating the magnificent scene 600 years ago when the wind chimes atop the tower rang in unison. In the blend of virtual and physical experiences, audiences witnessed the reeds transform into drifting ancient merchant ships and flowing verses, experiencing the continuity and exchange of civilizations.

▲ The members of "Echo Silk" presented their work to the competition jury

Exploring New Paths for Cultural Heritage Conservation: Digital Creativity Inspires New Cultural Expression

The Great Bao'en Temple Ruins Museum offers innovative solutions to address the dual challenge of heritage conservation and communication, establishing a sustainable model driven by "technology + collaboration". Taking the competition as a core carrier, the Museum has built a cross-border, cross-disciplinary and cross-cultural co-creation platform that unites global youth with international museums and academic institutions. By leveraging cutting-edge technologies such as AR, VR, and AI, participants expand the narrative boundaries of cultural heritage through interdisciplinary collaboration. They draw inspiration from the details of urban culture from the symbolic meaning of the Porcelain Tower to the flowing cultural veins of the Qinhuai River, redefining the relationship among "cultural heritage, urban space, and public life" through co-creation, and endowing heritage conservation and communication with renewed vitality and international consensus.

In addition, the Great Bao'en Temple Ruins Museum has established deep partnerships with renowned institutions such as the British Museum and the Metropolitan Museum of Art, granting access to digital copyrights and research achievements related to the Glazed Pagoda, and providing participants with abundant and authentic creative sources. By combining open digital tools with the diverse perspectives of young creatives, the Museum has opened up a new path for the conservation and communication of cultural heritage.

▲ The participants of the 2025 Hackathon collectively illuminated the "Beginning of Autumn" lights on the Glazed Pagoda of the Great Bao'en Temple.

Inclusive Technologies: Building a Global Network for Cultural Heritage Conservation

The competition fully reflects the spirit of openness and sharing in the digital age. With the framework support of UNESCO, it brought together museums, universities, and creative teams from around the world, building a transnational network for knowledge sharing and collaboration. Over 20 international experts provided professional guidance and technical support to young creatives through online masterclasses and design workshops. Guided by these experts, the team "Grid Studio" developed the project "Gate Scape", winning "the Best Global Appeal Award" due to its unique cross-cultural narrative and innovative expressions.

▲ The mentor Niall Hill and the "Grid Studio" team discussed their design proposal.

▲ Scene from "the Lamplighter of the Ming Dynasty · the Lighting Ceremony" at the Great Bao'en Temple Ruins Museum

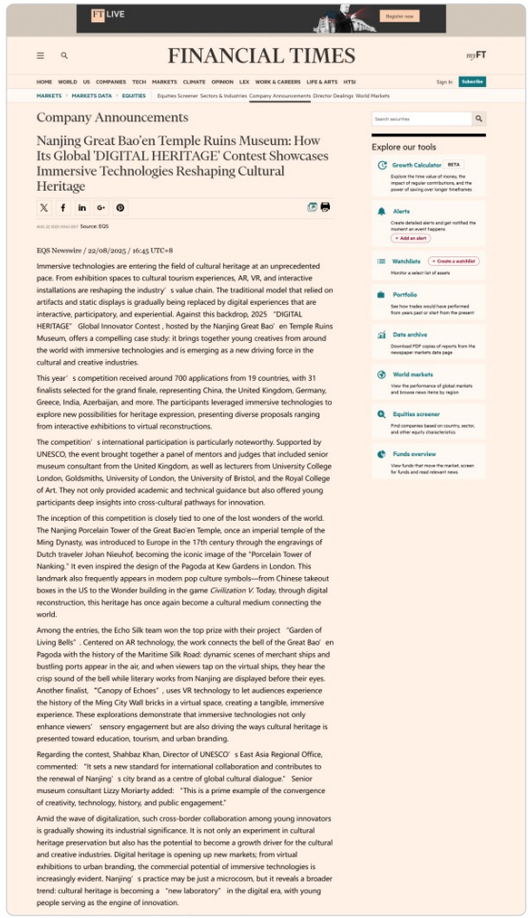
Building Digital Civilization: A Global Model for Sustainable Development

The significance of "Digital Heritage" has gone far beyond technological innovation. According to Shahbaz Khan, Director of the UNESCO Regional Office for East Asia, the competition "sets a new benchmark for international collaboration". It was covered by more than 200 mainstream media worldwide such as Xinhua News Agency, the Associated Press, Financial Times, and Los Angeles Times, achieving remarkable global visibility.

More importantly, the competition has evolved from creative practice to real transformation.

The Great Bao'en Temple Ruins Museum has seen a 300% increase in annual international visitors. Multiple digital installations created by young teams are now being implemented, moving beyond the museum, and integrating into urban public spaces as a part of daily life. From "creativity" to "products" and from "exhibition" to "industries", this innovative model not only offers valuable experience for global cultural institutions seeking sustainable development in the digital era, but also injects new momentum into the sustainable transmission of human cultural heritage.

Digitization brings ancient treasures alive



FINANCIAL FORUM

Company Announcements

Nanjing Great Bao'en Temple Ruins Museum: How Its Global 'DIGITAL HERITAGE' Contest Showcases Immersive Technologies Reshaping Cultural Heritage

▲ Special coverage by *Los Angeles Times* and *Financial Times*

International Academy of Red Cross, Establishing an International Platform for Humanitarian Exchange and Cooperation

▲ International Academy of Red Cross and its volunteers

Applying Institution

International Academy of Red Cross

红十字国际学院
INTERNATIONAL ACADEMY OF RED CROSS

Other Participating Institutions

Red Cross Society of China, Chinese Red Cross Foundation, Soochow University, International Committee of the Red Cross, International Federation of Red Cross and Red Crescent Societies

Countries and Regions Covered or Involved in the Implementation

191 countries and regions such as China, Switzerland, Italy, the United Kingdom, and Kyrgyzstan

Against the backdrop of increasingly complex global humanitarian challenges, the International Academy of Red Cross leverages its unique position as the world's first specialized Red Cross institution. By establishing a "Global Humanitarian Exchange and Cooperation Platform", it systematically advances the restructuring of knowledge-sharing systems and the innovation of mechanisms for mutual learning among civilizations. This initiative provides replicable collaborative governance models for building a community with a shared future for mankind.

Fostering global exchange and cooperation, contributing wisdom and solutions to the advancement of global humanitarian endeavors.

The International Academy of Red Cross was jointly established in 2019 by the Red Cross Society of China, Soochow University, and the Chinese Red Cross Foundation. It is dedicated to research on the Red Cross Movement, talent cultivation, cultural dissemination, and academic exchange. As a vital component of the International Red Cross Movement, the IARC has established close cooperation with the ICRC, the IFRC, and red cross and red crescent societies from multiple countries. It has gradually become an international calling card for the Chinese Red Cross Movement. Meanwhile, the IARC has been actively expanding its global influence. In 2023, ICRC President Spoljaric visited the academy and delivered a keynote address. In 2025, IFRC President Kate Forbes assumed the role of Honorary Dean and paid a visit to the academy. Leaders from numerous national Red Cross societies and international organizations have made the academy a key stop during their exchanges in China.

The IARC leverages its Learning Platform to overcome geographical barriers, providing free learning opportunities for 191 national Red Cross and Red Crescent societies worldwide, over 16 million volunteers, as well as 204,000 grassroots organizations and 2.93 million volunteers in China. This initiative is supported by the IFRC online learning platform, encompassing course translations and mutual referencing.

Meanwhile, the IARC also collaborates closely with the ICRC, the IFRC, the national Red Cross and Red Crescent societies, the Solferino Academy, and other international organizations to deliver humanitarian education and training programs worldwide. Through blended online and offline formats, these initiatives attract representatives from organizations, experts, scholars and young students from various countries and regions, continuously broadening and deepening international exchanges.

▲ IARC Learning Platform

▲ On September 6, 2023, Spoljaric, President of the International Committee of the Red Cross (ICRC), visited the IARC and delivered a speech.

Co-building the IARC: Pioneering a New Pathway for Humanistic Education Through the "Trinity" Model

The IARC has pioneered a new approach to humanitarian education and international cooperation through its innovative "trinity" model—multi-stakeholder engagement + digital resource repository + international collaboration network.

The IARC brings together diverse stakeholders including the ICRC, the IFRC, the national Red Cross societies from multiple countries, universities, and research institutions. It fills a gap in humanitarian education and fosters a collaborative model of diverse cooperation.

Leveraging digital infrastructure, the IARC has established the Learning Platform, providing free learning resources for 191 national Red Cross and Red Crescent societies worldwide and millions of volunteers in China. In collaboration with the Library of Soochow University, it has also established China's first hybrid online-offline "Red Cross Movement Documentation Center", overcoming geographical barriers to promote open access and sharing of humanitarian knowledge.

In terms of international collaboration, the IARC has partnered with the IFRC, the ICRC, and numerous universities and experts worldwide to jointly develop training programs, research projects, and academic exchanges. It has hosted a series of events including the Soochow International Humanitarian Forums, the International Seminar on Humanitarian Exchange and Cooperation, the 2024 Asia Pacific Movement Induction Course, and the International Humanitarian Law Summer Session, thereby establishing a global network for humanitarian education and cooperation. This model not only promotes the popularization of humanitarian education and the development of academic research, but also provides institutionalized safeguards for cultivating humanitarian professionals with an international perspective.

▲ The 2024 Asia Pacific Movement Induction Course was held at the IARC from November 26 to 30, 2024.

▲ In September 2025, Kate Forbes, President of the International Federation of Red Cross and Red Crescent Societies, visited the IARC.

Advancing the cause of humanitarianism and putting the concept of building a community with a shared future for mankind into practice

The establishment of the IARC not only fills a gap in humanitarian education and talent cultivation within China and the international Red Cross movement, but has also gradually evolved into a model platform for the high-quality development of the Red Cross causes with Chinese characteristics. With a focus on cultivating globally-minded humanitarian professionals, the IARC has become a key think tank for international humanitarian law research and global humanitarian governance, as well as an innovative platform for promoting exchanges and dissemination. Through academic research and talent development, the academy contributes solutions and wisdom to international humanitarian cooperation, enhancing China's soft power and influence in global humanitarian affairs.

The IARC continues to serve as a hub for international exchange. The Soochow International Humanitarian Forum, now in its fourth iteration, has become a vital platform for showcasing China's experiences and advancing global cooperation. By 2025, the academy has established partnerships with Red Cross and Red Crescent Societies from over 140 countries, with representatives from more than 50 national societies and over 10 international organizations invited to visit the academy for exchanges.

Through a range of online and offline initiatives, the IARC continuously promotes humanitarian culture, cultivates professionals with an international perspective, contributes to the governance of global humanitarian issues, fosters mutual trust and cooperation, and serves as a vital vehicle for advancing the building of a community with a shared future for mankind.

▲ The 3rd Soochow International Humanitarian Forum was held in Suzhou on November 18, 2023. Representatives from four international organizations and 15 national Red Cross societies attended the forum.

▲ June 18, 2025: Outcome Launching Event for the ICRC – IARC Joint Internship Program.

From the Regional to the Global: Digital Technology Facilitates Dialogue Between Ancient Shu Civilization and the World

▲ Itinerary of "Spiritual Essence· The Global Digital Exhibition of Ancient Shu Civilization"

Applying Institution

Cyberspace Administration of Sichuan Province

Other Participating Institutions

Sanxingdui Museum (Guanghan, Sichuan), Jinsha Site Museum (Chengdu, Sichuan), Sichuan Cultural Communication Co., Ltd.

三星堆博物馆 SANXINGDUI MUSEUM　金沙遗址博物馆 JINSHA SITE MUSEUM　四川文传 SICHUAN CULTURE

Countries and Regions Covered or Involved in the Implementation

14 countries and regions such as China, Mexico, France, Italy, and the United Kingdom

In the era of globalization and digital transformation, international cultural exchange is taking on new forms. Over the past six years, the Cyberspace Administration of Sichuan Province has launched the Global Touring Exhibition of the Ancient Shu Civilization, featuring digitalized content centered on the "Sanxingdui–Jinsha" archaeological sites. By integrating immersive displays and interactive technologies, the project explores innovative pathways for the digital and international dissemination of China's outstanding traditional culture, presenting to the world the unique charm and contemporary vitality of the Ancient Shu—and, by extension, of Chinese civilization.

The Ancient Shu Civilization Digital Exhibition Embarks on a Global Journey

Since its debut in 2019, the "Spiritual Essence: Global Digital Exhibition of the Ancient Shu Civilization" has undergone continuous continuous iteration and expansion, touring 13 countries and regions including Mexico, France, New Zealand, Brazil, Chile, Egypt, Greece, Ethiopia, Singapore, and Peru. By partnering with cultural institutions from countries such as Egypt, Greece, and Sweden, the project has gradually developed an international cultural exchange model integrating "Exhibition + Events + IP Operation." It has received wide acclaim and has become a new cultural emblem of Sichuan Province on the global stage. During the 2024 APEC Summit, the special exhibition "Light of the Sun: A Dialogue Between the Ancient Shu and Inca Civilizations" debuted in Peru, significantly enhancing its international visibility and expanding its network of global partnerships.

▲ 2024: "Light of the Sun: A Dialogue Between Ancient Shu and Inca Civilizations" Exhibition Site

Modern Information Technology Revitalizes a Millennia-old Civilization

Seizing the opportunity of the latest archaeological discoveries at Sanxingdui, the project carried out digital collection of key relics unearthed from the Sanxingdui and Jinsha sites. These were then transformed into diverse formats—3D artworks, artifact replicas, VR/AR immersive installations, 12K panoramic videos, 3D mapping light shows, and naked-eye 3D displays—allowing the Ancient Shu civilization to engage audiences worldwide in a clearer, more vivid, and time-transcending manner empowered by digital innovation.

In April 2023, the "Illuminated Ancient Shu" 3D mapping light show was staged at the China Cultural Center in Paris. Projected onto a century-old French building, it artistically merged the aesthetics of European architecture with the splendor of Ancient Shu culture. More than one hundred French officials, scholars, and cultural figures attended the event, offering high praise for its creative fusion of light, art, and history.

▲ 2023: Spiritual Essence· The Global Digital Exhibition of the Ancient Shu Civilization in France, with a 3D Mapping Light Show

▲ 2024: Sanxingdui-Jinsha Themed Digital Exhibition and Promotion Even in Sweden, with a Naked-eye 3D Show

Empowering International Cultural Exchange through Digitalization

The touring exhibition offers overseas audiences an immersive experience of Ancient Shu civilization. Konstantina Benisi, Director of the Department of Prehistoric and Classical Antiquities at the Greek Ministry of Culture, remarked during her visit: "It allows us to come almost face-to-face with Ancient Shu Civilization, one of the most representative elements of ancient Chinese civilization. Chinese culture is truly astonishing." Through innovative applications of digital technology, the project not only enhances the international appeal of Chinese traditional culture, but also improves the accessibility and intelligibility of cultural heritage, and promotes the living transmission of relics and strengthens international cooperation.

▲ 2024: The naked-eye 3D show "Ancient Shu Civilization in the Bronze Age: Sanxingdui and Jinsha in Sichuan" was featured at the Economic, Trade and Cultural Promotion and Exchange Events in New Zealand, Brazil and Chile.

▲ 2025: "Dialogue Between the Ancient Shu and Ancient Greek Civilizations Cultural Exchange" in Greece, with foreigners viewing the exhibition

International Astronomical Plate Digitization

▲ To Restore the Starlight of a Century Past

Applying Institution

Shanghai Astronomical Observatory, Chinese Academy of Sciences

Other Participating Institutions

National Astronomical Observatories, Chinese Academy of Sciences; Purple Mountain Observatory, Chinese Academy of Sciences; Yunnan Observatory, Chinese Academy of Sciences; National Astronomical Data Center; Beijing Normal University; University of Shanghai for Science and Technology; Taiyuan University of Technology; Ulugh Beg Astronomical Institute, Uzbekistan Academy of Sciences; Osservatorio Astrofisico di Torino, Instituto Nazionale di Astrofisica, Italy; Mykolaiv Astronomical Observatory, Ukraine; Universidad de Chile; National Astronomical Observatory of Japan; Center for Research in Astronomy, Astrophysics and Geophysics, Algeria; Universidad Nacional de Córdoba, Argentina; South African Astronomical Observatory.

Countries and Regions Covered or Involved in the Implementation

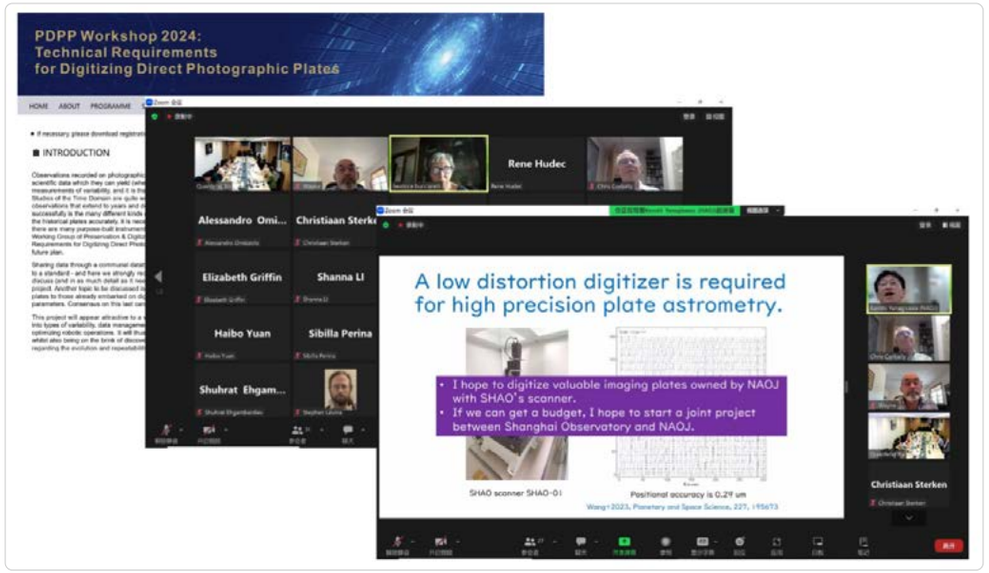
9 countries and regions such as China, Uzbekistan, Italy, Ukraine, and Chile

Astronomical photographic plates, which hold a unique century-long record of our universe, are at risk of irreversible degradation and the permanent loss of their data. Addressing this global challenge, Shanghai Astronomical Observatory (SHAO) has joined forces with the international community. By contributing its high-precision digitization capabilities, SHAO is working within a collaborative framework to facilitate global data sharing and joint research, embodying a practical and cooperative approach to shared scientific goals.

Harnessing Global Efforts to Advance the Digitization of International Astronomical Plate

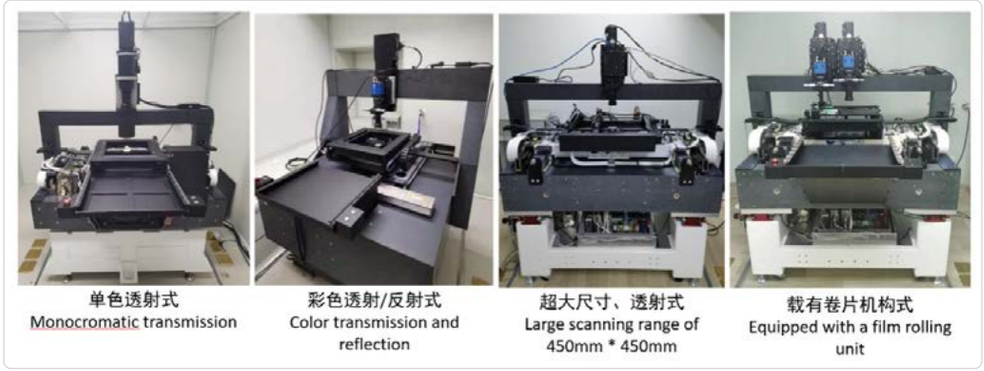
Since 2019, SHAO has independently developed four high-precision, multi-functional measuring devices and completed the digitization of China's night-observation astronomical plates. Against the backdrop of the global cooperation initiative launched by Preservation and Digitization of Photographic Plates (PDPP) under International Astronomical Union (IAU), SHAO has proposed an international cooperation model of "Contribution-Sharing", and established collaborations with astronomical institutions from multiple countries such as Uzbekistan and Italy to advance the global process of astronomical plate digitization. To date, approximately 30,000 international astronomical plates have been digitized, with selected datasets now publicly accessible through the National Astronomical Data and Science Center of China.

▲ Chinese researchers presented a report on "Astronomical Plate Digitization" at the South American Annual Conference on Dynamic Astronomy, promoting the digitization of astronomical plates in the Southern Hemisphere.



▲ A New Partnership with NAOJ was Launched in 2024 to Digitize their Historical Plates.

The International Astronomical Plate Database: The Powerful Alignment of Technology and Functional Mechanisms



▲ SHAO's in-house developed, high-precision digitizers.

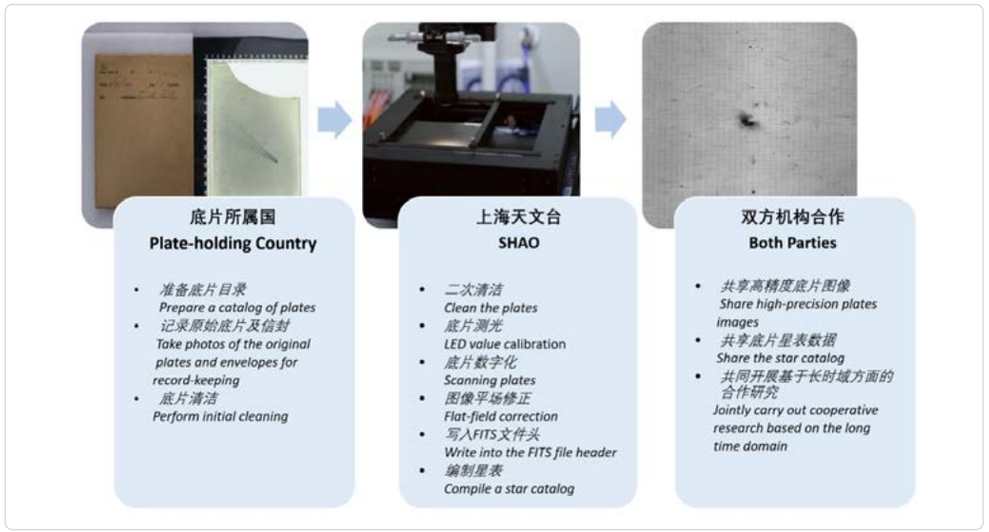
To help address the twin challenges of technological lag and insufficient collaborative mechanisms in plate digitization, SHAO focused on systematic and incremental innovation.

Technologically, it has independently developed four high-precision, multi-functional measurement devices, overcoming the bottleneck of 1-micron-level measurement precision. This has significantly improved scanning efficiency and substantially reduced the unit cost of digitization, laying a solid foundation for the rapid generation of massive datasets.

Mechanistically, it has adopted a “contribution-sharing” model, leveraging its digitization capabilities to connect with international resources. This has led to the establishment of a scientific research collaboration paradigm that promotes resource sharing while safeguarding data rights and interests.

Benefiting from these two major breakthroughs, the International Astronomical photographic Plate Database has emerged as a natural outcome.

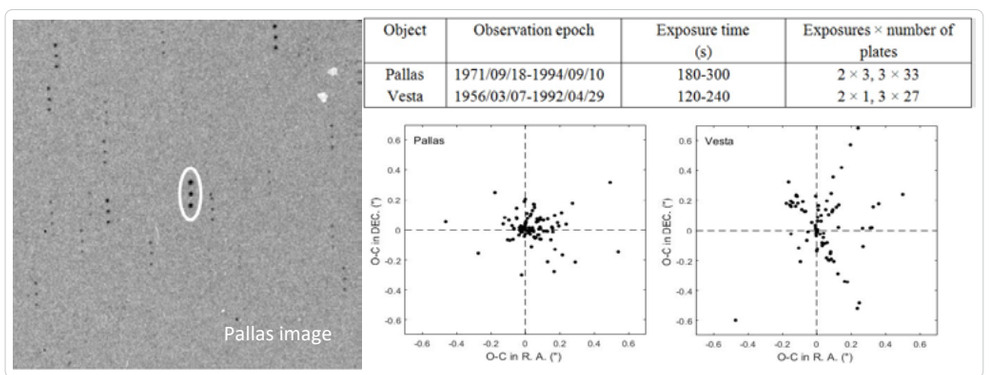
“Great rivers are fed by small streams.” This developing database brings together plates from many countries, merging over a century of observations into a unified digital archive. As an open resource, it aims to give new value to historical data, offering the global community a unique long-term baseline for exploring the cosmos.



▲ The "Contribution-Sharing" Model

Preserving Cosmic History for a Shared Scientific Future

Using its digitization technology, SHAO is participating in the global effort to safeguard the scientific data on millions of historical plates, helping preserve this important heritage for future generations. This century-spanning data provides unique support for long-term astronomical



Object	Observation epoch	Exposure time (s)	Exposures × number of plates
Pallas	1971/09/18-1994/09/10	180-300	2 × 3, 3 × 33
Vesta	1956/03/07-1992/04/29	120-240	2 × 1, 3 × 27

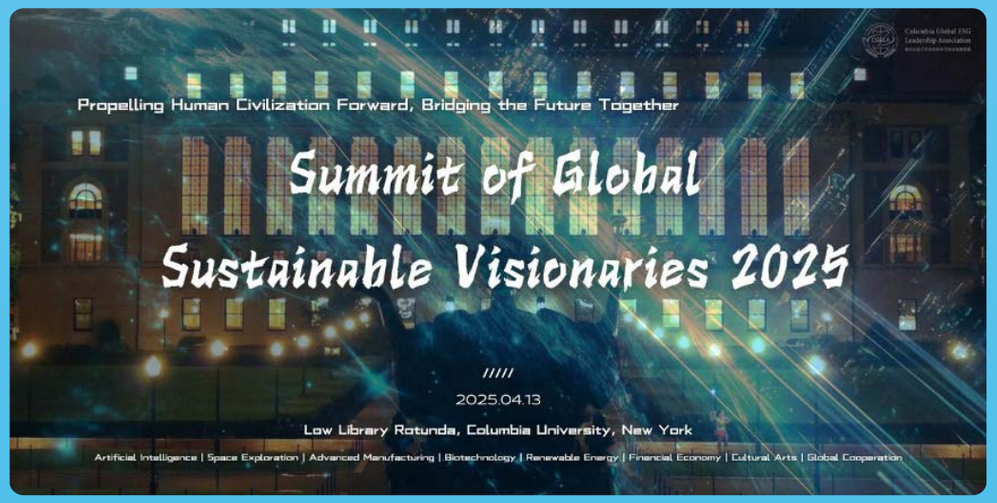
▲ High-precision asteroid data retrieved from digitized plates. (Wang L L, Yu Y, Yuldoshev Q X et al., Planetary and Space Science, 2023, 227, 105637)

studies and has already contributed to progress in areas like star catalogues, binary star dynamics, and asteroid motion.

In one recent example, based on plates from Uzbekistan, joint research by Chinese and Uzbekistan scientists in 2023 improved the positional accuracy for asteroids Vesta and Pallas. This work demonstrated the value of long-term digitized data for asteroid studies.

This case, centered on the "Contribution-Sharing" model, offers a collaborative response to the worldwide issue of preserving historical data. It represents a practical approach to integrating global resources and building collective experience, providing one viable pathway for international scientific cooperation.

Columbia University - Summit of Global Sustainability Visionaries 2025: Advancing Human Civilization, Connecting Our Future



Applying Institution

Columbia Global ESG Leadership Association

Other Participating Institutions

Penn Global ESG Leadership Association, Global ESG Leadership at NYU

Countries and Regions Covered or Involved in the Implementation

31 countries and regions such as China, Australia, Canada, New Zealand, and France

In the face of pressing global challenges such as climate change and unequal resource distribution, young people—who represent the core force of the future—urgently need cross-border collaboration platforms. In April 2025, the Columbia Global ESG Leadership Association (CGELA), together with the University of Pennsylvania, New York University, and other institutions, hosted the Columbia Global Sustainability Summit. The event gathered young leaders, scholars, and industry representatives worldwide to explore future-oriented topics including artificial intelligence, renewable energy, life sciences, cultural exchange, and international cooperation.

Global Youth Unite, Building Cross-Border Exchange Platforms

The summit brought together over 300 participants from more than 30 countries and regions, including officials from international organizations, business leaders, young entrepreneurs, and technology experts. The program featured keynote speeches, parallel forums, youth project showcases, and cross-disciplinary dialogues, spanning areas such as technology, energy, finance, biomedicine, social governance, and cultural exchange.

One highlight was the “Climate Seal” project, founded by young Chinese entrepreneurs. Using AI to create a reliable carbon emissions database and “Trusted Carbon Code (TCC),” it was successfully selected into the AC Venture “Seed Plan” incubator and became the first signed company. By lowering the cost of carbon accounting and enhancing cross-border compliance efficiency, the project set a global benchmark in the integration of AI and carbon neutrality technologies. It was recognized on the “Sustainable Development Youth Leaders” list for its innovation.

The summit also hosted the “30 Under 30 & 25 Under 25 Global Sustainability Youth Leaders Awards”, honoring young leaders making outstanding contributions in AI, clean energy, carbon neutrality, and international cultural cooperation—creating globally influential role models for the next generation.

▲ Columbia University Global Sustainability Summit Roundtable Forum

▲ Opening Remarks by the Host at the Columbia University Global Sustainability Summit

▲ Columbia University Global Sustainability Summit Roundtable Forum

▲ Group Photo of Roundtable Guests at the Columbia University Global Sustainability Summit

Innovative Formats Driving Cross-Border Collaboration

The summit's design emphasized cross-disciplinary integration and technological empowerment. For the first time, four major thematic forums—deep tech, green finance, renewable energy and life sciences, and social culture—were held simultaneously with the Youth Influencers Forum, creating a dual channel for both research exchange and public engagement.

Influential youth voices from platforms such as TikTok, Instagram, and Xiaohongshu were invited to expand the global reach of sustainability topics through social media. An international review and showcase mechanism was also established to provide resources and cross-border cooperation opportunities for outstanding youth projects.

The event was coordinated by the Executive Chair Team, with over 60 international guest speakers and dozens of volunteers ensuring both professional depth and interactive participation. This created a youth-driven, cross-regional platform for innovative collaboration.

▲ Columbia University Global Sustainability Summit – Artificial Intelligence and Sustainable Development Roundtable Forum

▲ Columbia University Global Sustainability Summit – Clean Energy and Sustainable Development Roundtable Forum

Empowering Youth, Creating Inclusive Impact

The summit achieved significant results in international youth sustainability. It built a global youth ecosystem network of more than 500 members and established connections with international institutions such as the United Nations and the World Bank, opening stable channels for youth projects to secure support and funding.

Award-winning projects from the "30 Under 30 & 25 Under 25" initiative in AI, clean energy, and social innovation have already benefited thousands of people worldwide, while amplifying their influence through social media. The summit also facilitated cross-border investment connections in green finance and biomedicine, accelerating the market adoption of innovative outcomes and promoting the realization of inclusive sustainable development goals.

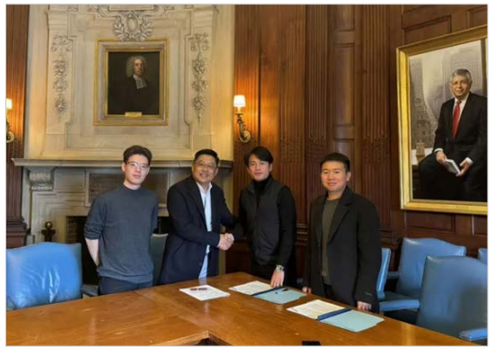
▲ Columbia University Global Sustainability Summit – Youth Influencer Forum, Guest: Ethan Yu

▲ Representatives of the "30 Under 30 & 25 Under 25" Global Sustainability Youth Leaders

Expanding Influence, Enabling Long-Term Cooperation

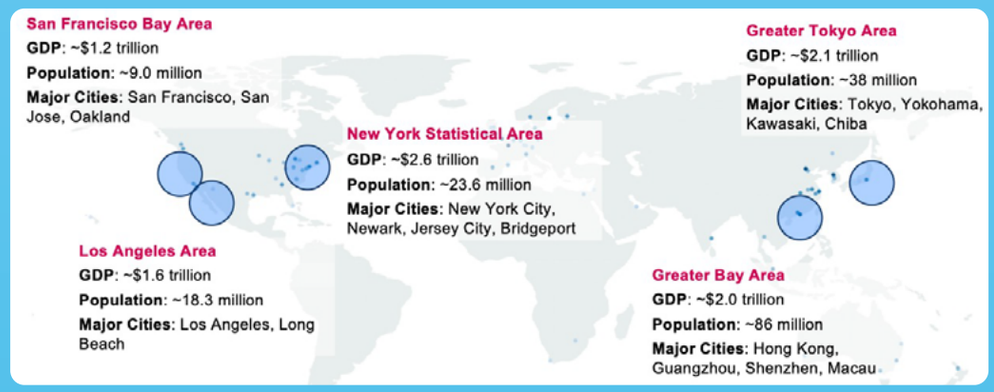
Beyond its immediate outcomes, the summit also sparked long-term mechanisms for collaboration. The organizers launched the Global Youth Sustainability Action Network, which attracted youth organizations from Europe, Asia, and the Americas to establish ongoing regional partnerships.

The summit also encouraged industry-academia collaborations, particularly in renewable energy and life sciences, through joint research and practice with universities and enterprises. With regular online exchanges and follow-up forums, its influence has extended beyond Columbia University to diverse regions worldwide, gradually shaping a sustainable ecosystem for youth collaboration and enhancing young people's role and voice in sustainability and digital governance.



▲ Signing Ceremony at the Summit: Hanyuan International Aviation Co., Ltd. and NS Flight Academy, USA

Innovation-Led, Talent-First: The High-End Innovative Talent Flow Data Center Empowers High-Quality Development



▲ Globalization drives the evolution of the competitive landscape, and talent competition becomes increasingly fierce. It is necessary to conduct multi-level, all-round, and three-dimensional analysis of the portraits of high-level talents worldwide and dig deep into the influencing factors of talent flow.

Applying Institutions

China Unicom Global Limited; Talent Flow Data Archive Hub, City University of Hong Kong; Academy of Innovation, City University of Hong Kong; Department of Media and Communication, City University of Hong Kong.

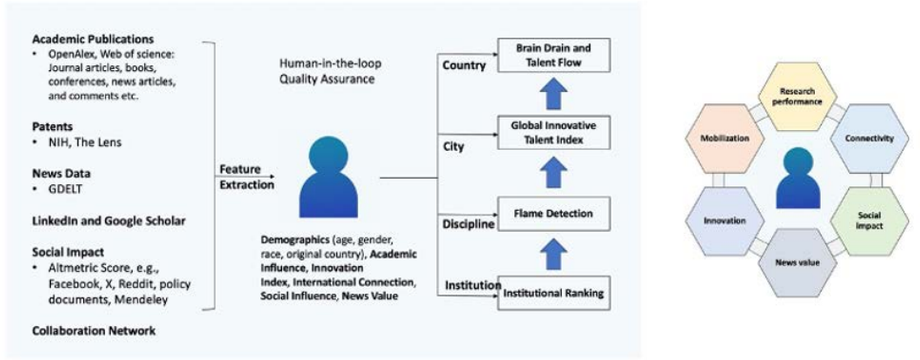
Countries and Regions Covered or Involved in the Implementation

Over 190 countries and regions such as China, the United States, the United Kingdom, and Singapore.

Against the backdrop of the accelerated integration of globalization and technological innovation, the cross-border flow of high-end innovative talents has become a key driving force for promoting global science and technology as well as economic development. Based on systematic research and real-time tracking, the High-End Innovative Talent Flow Data Center conducts quantitative evaluation of the talent attraction and sustainable development capacity of cities, providing a scientific basis for building an open, inclusive and collaborative global talent ecosystem.

Data Integration and Technical Support: Building the Cornerstone of a Global Talent Think Tank

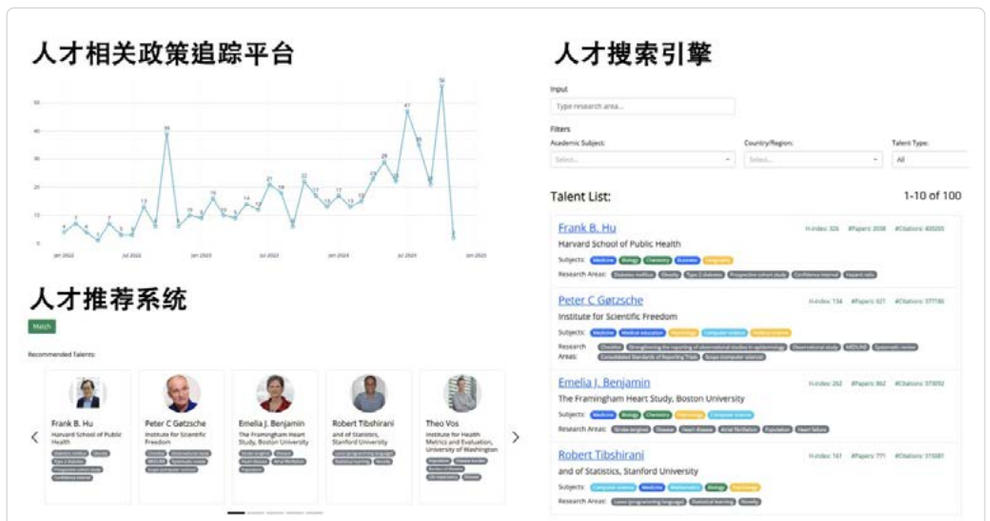
Relying on machine learning, large language models (LLM) and cutting-edge data mining technologies, the Data Center has built a cross-field and multi-dimensional global innovative talent database. By integrating multi-source heterogeneous data such as academic paper publications, patent applications, dynamics of innovative enterprises and professional social platforms, it breaks through geographical and industrial barriers and achieves accurate portraits of more than 200 million innovative talents around the world. At present, the database covers more than 190 countries and over 8,000 cities, involving 19 major fields and more than 240 disciplines. It fully records the demographic characteristics, institutional affiliation, academic achievements and career migration trajectories of groups such as scholars, entrepreneurs and high-tech experts, forming a leading global-scale and dynamically updated talent data resource pool. Building on this foundation, the Center has developed multiple patented technologies and analytical models, transforming massive data into visualized and interactive analytical outputs, and providing core technical support for global talent strategy research.



▲ Integrate multiple types of data such as academic paper publications, patent applications, innovative technology companies and social platform data to establish a more comprehensive, multi-dimensional and detailed innovative talent database.

Multi-Dimensional Research and Achievement Transformation: Driving the Upgrade of Global Talent Strategy

Relying on big data analysis and visualization technology, the High-End Innovative Talent Flow Data Center conducts in-depth analysis of the laws governing the global flow of innovative talents. It is found that traditional technology hubs such as Silicon Valley and Shenzhen still attract top talents, while emerging innovation centers such as Singapore and Dubai have become new hotspots for talent flow due to their advantages in policies and industrial ecology. By building a model of influencing factors of talent flow, it accurately identifies key elements such as scientific research infrastructure, industrial prospects, policy support and living environment, providing data support for countries to formulate differentiated talent policies. At the same time, the Center has established an evaluation system for urban innovation competitiveness, which deeply integrates talent flow data with innovation ecosystem indicators, and conducts quantitative analysis from the dimensions of scientific research investment, density of innovation platforms, policy attraction and matching degree between talents and industries, providing scientific diagnosis for cities around the world. For example, after optimizing the scientific research collaboration and talent housing policies for a European city, the talent attraction in the field of artificial intelligence has increased by 37%, promoting the leap of the city's innovation level. In addition, the research also systematically analyzes the driving mechanism of talent flow



▲ The establishment of a diversified talent system and platform facilitates the tracking, acquisition and retention of talents.

on economic growth and industrial upgrading, quantifies the technology spillover and industrial synergy effects, and pays attention to the problem of regional development imbalance, providing references for policy formulation. The innovative applications of the Data Center include an intelligent tracking platform for talent-related policies, which can monitor global policy dynamics in real time; an intelligent talent recommendation system to achieve accurate matching of "talents - positions - cities"; and a number of patents and international journal achievements that lead the frontier of global talent research, providing solid support for global talent strategic decision-making.

International Cooperation and Future Vision: Jointly Depicting the Blueprint for Global Talent Development

The Data Center actively builds an international talent cooperation network, carries out data sharing, joint research and achievement release with global scientific research institutions and talent organizations, and actively participates in global talent governance. Under the framework of the "Belt and Road" Initiative, it customizes talent development plans for countries along the routes, helps them build highlands for scientific and technological innovation talents, promotes the coordinated development of regional economies, establishes global talent information sharing standards, eliminates data barriers, and builds an open and interconnected global talent ecosystem. Through these efforts, the Center injects sustained momentum into global scientific and technological innovation and economic prosperity, contributing to the building of a community with a shared future in cyberspace.

HONOR Talents Global Design Awards: Building a Global Platform for Artistic and Technological Exchange

▲ HONOR Talents Global Design Awards official website page

Applying Institution

Honor Device Co., Ltd.

Other Participating Institutions

United Nations Industrial Development Organization Investment and Technology Promotion Office (China · Beijing), International Association of Universities and Colleges of Art, Design and Media, Central Academy of Fine Arts, China Academy of Art, L'École de design Nantes Atlantique, National Autonomous University of Mexico, The Monterrey Institute of Technology and Higher Education, Multimedia University, University of Technology MARA, University Tunku Abdul Rahman, Taylor's University, Luxun Academy of Fine Arts, Arts College of Sichuan University, Artron Art Group, Shenzhen Illustration Association, Xiao Hui Wang Art Museum.

Other Participating Institutions

United Nations Industrial Development Organization Investment and Technology Promotion Office (China · Beijing), International Association of Universities and Colleges of Art, Design and Media, Central Academy of Fine Arts, China Academy of Art, L'École de design Nantes Atlantique, National Autonomous University of Mexico, The Monterrey Institute of Technology and Higher Education, Multimedia University, University of Technology MARA, University Tunku Abdul Rahman, Taylor's University, Luxun Academy of Fine Arts, Arts College of Sichuan University, Artron Art Group, Shenzhen Illustration Association, Xiao Hui Wang Art Museum.

Countries and Regions Covered or Involved in the Implementation

Over 40 countries and regions such as China, France, Mexico, Malaysia, and South Africa

Driven by the tide of globalization, the integration of art and technology has become a vital force in promoting cultural exchange and innovation. Since its launch in 2020, the HONOR Talents Global Design Awards has been guided by the vision of empowering youth. With diverse tracks established across five major regions—China, Europe, the Asia-Pacific, Latin America, and the Middle East & Africa—the initiative discovers and supports pioneering young artists worldwide. More than a design competition, it serves as an international platform that nurtures young designers, fosters cultural diversity, and drives technological creativity.

A Global Creation from Five Continents: Building a Global Platform for Art and Technology to Foster Cross-Civilization Dialogue

HONOR Talents Global Design Awards has established a global presence and built a platform for the integration of art and technology. With five regional divisions—China, Europe, the Asia-Pacific, Latin America, and the Middle East & Africa—the competition collaborates with universities and art institutions worldwide to empower young design talent. To date, it has attracted participants from more than 40 countries and regions, receiving over 34,000 submissions.

Through both online and offline engagement, the initiative acts as a bridge for communication and cultural sharing, enabling the creative transformation of civilizations. In February 2024, HONOR, together with the Central Academy of Fine Arts and other partners, co-hosted the exhibition "Dragon on Tour: Global Celebration of the Lunar New Year" at the United Nations Headquarters in New York. The exhibition featured works by over 20 designers from 13 countries and regions—including China, the UAE, and Malaysia—merging the Chinese dragon motif with local landmarks and crafts, earning widespread acclaim from embassies and consulates.

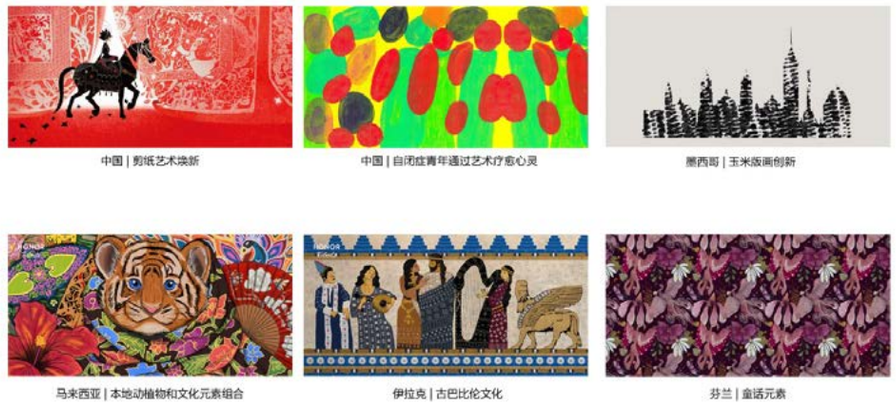
▲ The Exhibition "Dragon on Tour: Global Celebration of the Lunar New Year"

In the same year, the HONOR Talents Art Tour made stops at the Champs-Élysées in Paris, the Palace Museum in Beijing, the Museo Soumaya in Mexico City, and the Amos Rex Museum in Helsinki. Exhibitions showcased outstanding past works through graphic design, interactive installations, and digital art, with guests from academia, culture, and technology celebrating the creativity of young artists. The competition's media campaigns—through HONOR's own channels and collaborations with international outlets—have achieved over 1.3 billion global impressions, promoting cross-cultural exchange and digital art awareness worldwide.

Co-Creation and Collaboration: Integrating Technology, Art, and Business to Shape

Focusing on industry-academia collaboration, the HONOR Talents Global Design Awards identifies and empowers global digital art talent. By introducing diverse tracks such as AIGC, it has attracted active participation from over 240 universities, industry experts, and partners worldwide. This collaborative model not only strengthens the professionalism and technological relevance of the competition but also provides young designers with opportunities to align with industry frontiers, unleashing their creative potential.

The competition also emphasizes the practical application of outstanding works, forming a sustainable cycle that integrates technology, art, and commerce. Selected works have been showcased at HONOR product launches, international exhibitions, and art festivals, and adapted into designs for phone cases, wallpapers, themes, and retail gifts. Over 240 pieces have been successfully commercialized, with designers receiving 70% of the revenue share. HONOR products have thus become the first representative works for many young creators—enhancing personal value while delivering the beauty of innovation to consumers worldwide.



▲ Some outstanding visual works from the HONOR Talents Global Design Awards

Diverse Empowerment: Supporting the Holistic Growth of Young Designers to Build an Inclusive Business and Social Ecosystem

Leveraging industry resources, the HONOR Talents Global Design Awards supports the holistic growth of young designers—from creative inspiration to practical application. Beyond promoting works, the initiative provides career pathways and experiential workshops to bridge creativity with practice. In 2025, HONOR, together with the Central Academy of Fine Arts, the China Academy of Art, and several industry partners, launched the inaugural HONOR Alpha Art & Tech China Tour. The program invited 12 young representatives from nine countries for a ten-day journey of design training and cultural exchange. Participants attended industrial design and UX workshops in Shenzhen and experienced Chinese culture in Guangzhou, Hangzhou, and Beijing through dialogues and exchanges with experts. Guided by the dual engines of technology and humanity, HONOR has built a cross-border youth empowerment ecosystem that fosters creativity, skill-building, and innovation.

The Awards also champion social inclusion by promoting the works of designers with disabilities. In 2024, the Judges' Choice Award winner Untitled was created by a young artist with autism. The piece, an expression of emotional healing through art, was later adapted into canvas bags and other creative products. Designer Tang Min's work Exploration, which pays tribute to women with disabilities, portrays their courage and desire to explore the world. It won the 2023 Best New Talent Award and was exhibited during the United Nations International Day of Persons with Disabilities, receiving high praise from UNESCO representatives.

▲ Group photo of participants in the inaugural "HONOR Alpha Art & Tech China Tour"

IKCEST "Belt and Road" International Big Data Competition

▲ Coverage of the IKCEST "the Belt and Road" International Big Data Competition

Applying Institution

Xi'an Jiaotong University (XJTU)

Other Participating Institutions

Co-organized by the International Knowledge Centre for Engineering Sciences and Technology under the Auspices of UNESCO (IKCEST), Baidu Online Network Technology (Beijing) Co., Ltd.

Countries and Regions Covered or Involved in the Implementation

21 countries and regions such as China, Australia, France, Germany, and Japan

Under the framework of the Belt and Road Initiative, the International Big Data Competition—jointly launched by XJTU, IKCEST and Baidu—centers on identifying and nurturing AI talent. The competition builds a platform for showcasing national achievements, sharing knowledge across borders, and advancing cross-cultural exchange and international cooperation.

Tapping Global Talent in Big Data and AI, and Promoting International Cooperation and Integration among Government, Industry, Academia, Research and Application Sectors

▲ Launching Ceremony of the First IKCEST "Belt and Road" International Big Data Competition

▲ Overview of the IKCEST "Belt and Road" International Big Data Competition

Jointly organized by IKCEST, Baidu, and XJTU, the IKCEST "Belt and Road" International Big Data Competition is dedicated to advancing global technological exchange and talent cultivation in big data and AI.. Now in its tenth consecutive edition, the competition spans five continents and 21 countries, engaging nearly 600 universities and attracting a cumulative total of some 24,000 teams. By providing a collaborative platform for outstanding AI practitioners worldwide, the competition has fostered cross-border integration among government, industry, academia, research and application sectors, accelerating the coordinated development of the global big data and AI ecosystem.

Fruitful Achievements and Platform Upgrades: Multi-Dimensional Advancement

In 2015, XJTU and Baidu jointly launched the 1st Big Data Competition. In 2019, with the inclusion of IKCEST as co-organizers—facilitated through the Silk Road Training Base project at XJTU—the competition evolved into an international event in 2019 and quickly gained global attention.

The competition's challenge topics closely match international industry needs. For example, the 2019 challenge, "Urban Area Function

▲ Group Photo of International Experts on the Advisory Committee of the 5th IKCEST "Belt and Road" International Big Data Competition

▲ Group Photo of the Award Ceremony of the 6th IKCEST "Belt and Road" International Big Data Competition

▲ Group Photo of the Award Ceremony of the 7th IKCEST "the Belt and Road" International Big Data Competition

Classification Based on Satellite Remote Sensing Imagery and User Behavior," required teams to develop models that support smart city development. The 2022 challenge focused on translation between Chinese and low-resource languages such as French, Russian, Thai and Arabic, addressing the English-centric limitation of many machine-translation systems and encouraging technological solutions to bridge linguistic divides. With forward-looking problem design and a multi-stakeholder implementation model, the competition has grown into a world-class platform that convenes global talent in big data and AI.

Innovative Mechanisms Drive Groundbreaking Practices in Industry-Education Integration

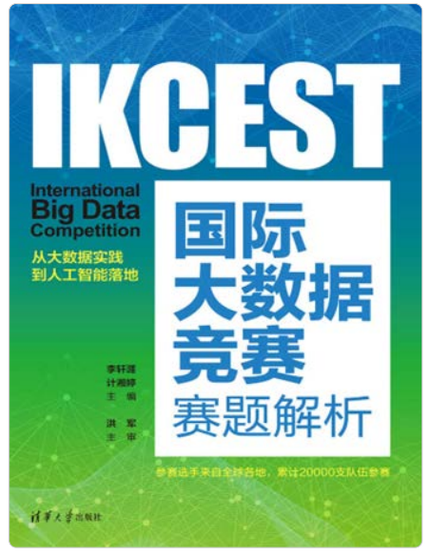
The competition has driven transformative progress in industry—education integration through a series of innovative mechanisms. Its challenge topics are closely aligned with global industrial needs—such as urban function classification and infectious disease forecasting—enabling participants to bridge the gap between academic research and practical application. Supported by Baidu's advanced AI technologies, the competition offers participants comprehensive, end-to-end assistance covering everything from algorithm development to cloud-based model training. The evaluation system emphasizes both technical precision and commercial potential, encouraging the translation of academic achievements into real-world solutions. Another key innovation lies in the close collaboration among government, industry, and academia: universities contribute theoretical and research expertise, industries provide data and application scenarios, while government departments offer policy guidance and resource support. Together, these efforts have fueled the competition's continuous growth and accelerated the global application of technological innovation across diverse industries.

Competition-Driven Learning and Technological Innovation: Significant Cross-sector Achievements

The competition remains at the forefront of technological trends. In 2025, it adopted the theme "Photo-based Problem Recognition and Solving with Large Models," encouraging participants to apply large AI models for practical problem solving and thereby deepening the integration of big data and AI. Its social impact is evident and inclusive: the 2023 "Multimodal Misinformation Detection in Social Media" challenge promoted multimodal models to detect image-and-text misinformation, contributing to a healthier online information environment; the 2020 task on forecasting the spread of highly infectious diseases applied big-data methods to support epidemic prediction and control, strengthening collective risk-response capacity. Economically, problem settings aligned with enterprise needs have driven industry innovation—for example, the 2021 challenge on "Real-Time Environmental Perception from Vehicle-Mounted Images" supported advances in autonomous driving technologies and related industrial upgrading. The competition has also published IKCEST International Big Data Competition: Analysis of Contest Topics, an in-depth volume that dissects each task—from objectives and fundamentals to winning models—combining theoretical exposition with code to serve researchers, practitioners, and educators.

▲ Review of the International Big Data Competition Over the Years

▲ Concepts and Themes of the Big Data Competition



▲ The published book: *IKCEST International Big Data Competition: Analysis of Contest Topics*

Tale of Harmony —— The Practice of Civilization Communication Across Land and Sea

▲ Semarang, Indonesia. Semarang, Indonesia, is the only city in the world named after Zheng He where the "Sanbao Parade", the grand commemorative event in honor of Zheng He, is held every year.

Applying Institution

Yunnan Media Group

Other Participating Institutions

Yunnan Federation of Returned Overseas Chinese; Radio and Television Administration of Yunnan Province; Office of the Cyberspace Affairs Commission, CPC Yunnan Provincial Committee; China Maritime Museum; Fujian Museum; Jinning District Museum; Cheng Ho Cultural Museum; Zheng He Research Association of Yunnan Province; International Zheng He Society; Cambodia-China Digital Youth Association.

Countries and Regions Covered or Involved in the Implementation

8 countries and regions such as China, Malaysia, Singapore, Sri Lanka, and Indonesia

Amid globalization, exchanges and mutual learning among civilizations have become vital bridges enhancing mutual understanding and advancing the building of a community with a shared future for mankind. In 2023, marking the 620th anniversary of Zheng He's remarkable voyages to the West, Yunnan Media Group launched the "Tale of Harmony: Voyaging with Zheng He Across Land and Sea" online live broadcast and short video series. Centered on Zheng He's cultural legacy, the project partnered with international influencers for cross-border collaboration, conducting field visits to relics of Zheng He's fleet in eight countries, decoding global cultural heritage, and fostering a platform for global civilizational dialogue.

International Celebrities Follow Zheng He's Footsteps, Reviving Memories of Peaceful Exchanges Across Centuries

620 years ago, Zheng He led a grand fleet on seven voyages to the Western seas, guided by the ideals of peaceful navigation, fair trade, technological exchange, and mutual learning among civilizations. His expeditions forged lasting friendships with many Asian and African nations, leaving behind a profound cultural legacy. Today, Zheng He's traces and legends remain vivid in places such as India, Sri Lanka, Malaysia, and Indonesia, serving as cultural bridges connecting the past and present, and linking China with the wider world.

▲ The Cheng Ho Cultural Museum in Malacca, Malaysia.

Building on this heritage, Yunnan Media Group invited international content creators from India, Thailand, Cambodia, and Indonesia to retrace Zheng He's routes. They visited historical sites and joined local festivals connected to Zheng He, including the Cheng Ho Cultural Museum in Malacca, Malaysia; the Sanbao Parade, one of the grandest festivals in Semarang, Indonesia; and the Porcelain Tower of the Great Bao'en Temple in Nanjing, China. Through dynamic livestreams and short videos, the program vividly conveyed Zheng He's philosophy of peace and intercultural exchange. The influencers experienced firsthand how Zheng He's legacy of peaceful diplomacy continues to resonate globally more than six centuries later.

▲ The scene of the "Sanbao Parade" in Semarang, Indonesia.

▲ The Porcelain Tower of the Great Bao'en Temple

Inheriting the 600-Year Maritime Spirit of Zheng He Through Generation Z Cultural Symbols

The "Tale of Harmony: Voyaging with Zheng He Across Land and Sea" series creatively engages Generation Z audiences by blending historical storytelling with modern digital expression. Using "exploration" and "mystery-solving" as youthful narrative frames, the program combines livestreaming and short video formats with interactive elements such as city walks, site check-ins, and expert interviews to create immersive experiences. For instance, an Indonesian Internet celebrity searched along the canal in Lasem and discovered the Ci'an Temple and Fishbone Temple by the canal, experiencing the locals' profound commemoration of Zheng He's fleet. By tracing historical clues and conducting on-site visits, the program enables audience to transcend time and space, virtually reliving the touching stories from 600 years ago.

▲ The canal in Lasem, Indonesia.

Spiritual Wealth from History Empowering Cross-Cultural Exchange and Cooperation

Zheng He's voyages represent not only a vital chapter in Chinese history but also a shared cultural memory of humanity. His peaceful maritime routes, non-colonial trade practices, and technological exchanges embodied the logic of peaceful development at the heart of the Ming Dynasty's Maritime Silk Road — revealing China's enduring commitment to peace and intercultural collaboration.

▲ Zheng He Park in Jinning, Kunming, Yunnan. Jinning, Kunming, is the hometown of Zheng He. The park features a pavilion designed in the shape of "Bao Chuan", and it is also the discovery site of the tombstone of Ma Hajji, Zheng He's father.

Through the "Tale of Harmony: Voyaging with Zheng He Across Land and Sea" series, more international influencers and scholars have visited Zheng He's heritage sites, exploring the valuable lessons his fleet offers for modern intercivilizational cooperation. During a visit to Jinning, Yunnan, a Malaysian expert on Zheng He described him as a "messenger of peace and love," emphasizing his relevance today — advocating equality, dialogue, and mutual learning among civilizations. Zheng He's story offers enduring wisdom for global governance and stands as a shared spiritual legacy for all humankind.

▲ Poh San Teng Temple in Malacca, Malaysia, is backed by Bukit China. Inside the pavilion, there is a well known as the San Bao Well, which, according to local legend, was dug by Zheng He. The clear and sweet water stands as a testament to the history of friendly exchanges.

From Intangible Heritage to Esports: The Global Reach of the Chinese Zhuang Folk Song Music Kit "Ay Hey"

▲ CS features the first music kit of Chinese ethnic minority languages.

Applying Institution

Perfect World Co., Ltd.

Other Participating Institution

Valve Corporation

Countries and Regions Covered or Involved in the Implementation

239 countries and regions such as China and the United States.

In response to emerging trends in digital-era cultural exchange, Perfect World Co., Ltd. (hereinafter referred to as "Perfect World") has partnered with Valve Corporation to bring the Chinese Zhuang folk song music kit "Ay Hey" to the global esports title Counter-Strike (CS). By creatively blending electronic music with traditional folk songs, the initiative fosters cross-cultural dialogue and international appreciation of intangible heritage, setting a new benchmark for the globalization of "esports + culture."

Highlighting China's Ethnic Heritage: A New Model for 'Esports + Culture' Communication

▲ "The Intangible Cultural Heritage Project" launched by CSCN team

Games have become one of the most dynamic media for cultural exchange in the digital age. As the exclusive operator of CS in mainland China, Perfect World launched its Intangible Cultural Heritage Project in 2022 to explore innovative ways of integrating Chinese culture into global gaming experiences. The inclusion of the Zhuang folk song "Ay Hey" in the CS music kit represents the latest achievement of this initiative—a successful experiment in creating a modern pathway for the living transmission of intangible heritage through esports.

Reaching Global Players through an International Esports Platform

As one of the world's most iconic esports titles, CS has users across more than 200 countries and regions, including China and the United States. It serves as a major arena for multicultural exchange and a strategic platform for China's cultural outreach. Leveraging this global network, the Zhuang-language music kit "Ay Hey" achieved instant worldwide visibility upon its release.

▲ The Chinese Zhuang folk song music kit "Ay Hey" has been launched on CS.

On November 28, 2024, "Ay Hey" officially went live in CS, becoming the first-ever Chinese Zhuang folk song music kit featured in the game. Play-

ers encounter its fusion of Zhuang melodies and electronic beats across immersive in-game settings—from the lobby to live matches. Leveraging the global reach of digital platforms, "Ay Hey" introduces more than 40 million players worldwide to the distinctive charm and powerful impact of Chinese folk music, sparking cultural resonance across borders. The initiative revitalizes the Zhuang tradition of "expressing emotions through song," giving it new life in the digital sphere and amplifying its voice on the global stage.

Cross-Sector Collaboration: Unlocking New Expressions of Heritage

Zhuang liao ge (mountain chanting) was inscribed on the second list of China's National Intangible Cultural Heritage in 2008. "Ay Hey" was co-created by Perfect World in collaboration with national liao ge inheritors and faculty and students from Guangxi Arts University. Its success stems from the innovative integration of esports as a cultural medium, youth-oriented aesthetics, and heritage transmission.

The piece fuses the sincerity of traditional Zhuang storytelling with the rhythmic vitality of electronic music popular among CS players—maintaining authenticity while embracing modernity. It also reflects the dual traits of Generation Z aesthetics and digital-era communication patterns, transcending cultural and linguistic boundaries to resonate with diverse global audiences.

The male vocals draw from liao ge (mountain chants), while the female vocals are rooted in the Zhuang three-part folk singing style—both recognized as national intangible heritage. The inclusion of the Zhuang instrument Bo Lie, with its soft and melodious tone, complements the electronic soundscape. This creative fusion breaks away from conventional stereotypes of heritage communication, reinterpreting ancient folk traditions through the logic of the digital age. "Ay Hey" thus stands as both a modern embodiment of intangible cultural heritage and a compelling example of cross-disciplinary cultural innovation.

▲ National-level and prefectural-level ICH inheritors of folk songs have joined the creative team.

Global Cultural Resonance: Inspiring Youth Creativity and Shared Value

Since its release, "Ay Hey" has sparked widespread discussion across the global CS community. Players have produced and shared a wave of derivative videos on social media, while international gaming influencers and professional musicians have joined discussions through commentary and analysis. The song has not only been performed on international esports stages and live-streamed to global audiences, but also showcased at cultural events such as China's native folk song festivals—bridging time, geography, and culture. With CS's player base predominantly composed of young people, the fusion of intangible heritage and esports serves both educational and entertainment purposes. As they enjoy competitive gameplay, young players are also inspired by traditional culture, discovering personal meaning and cultivating a sense of cultural confidence and pride.

▲ "Ay Hey" was showcased at the Perfect World Shanghai Major 2024.

“Junior Cultural Ambassadors”—A New Bridge for Global Youth Cultural Exchanges

▲ Themes of the previous China Soong Ching Ling Foundation “Junior Cultural Ambassadors” Events

Applying Institution

China Soong Ching Ling Foundation

Other Participating Institutions

China Soong Ching Ling Science & Culture Center for Young People, China Cultural Centers OverseasAbroad, China National Tourist Offices, Prince Kung’s Palace Museum under the Ministry of Culture and Tourism of the People’s Republic of China, and Guangming Online (GMW.cn)

Countries and Regions Covered or Involved in the Implementation

64 countries and regions such as China, the United States, the United Kingdom, France, and Australia

Themed “Bridge of Friendship & Ambassadors of Culture,” the China Soong Ching Ling Foundation “Junior Cultural Ambassadors” Event aims to collect video submissions from teenagers in 64 countries and regions worldwide via the internet. It builds a cross-cultural exchange platform for young people around the world to enhance friendship and experience the charm of diverse cultures through exchanges and interactions.

Innovative Themes and Extensive Dissemination Attract the Participation of Young People from Five Continents

Since 2021, the China Soong Ching Ling Foundation "Junior Cultural Ambassadors" Event has been successfully held for four sessions, with 1,367 young participants from 64 countries. It encourages youths to record their understanding and reflections on different cultures with cameras and serve as "Junior Cultural Ambassadors" spreading friendship and culture. Since 2023, exchange programs have been launched annually in China during the Event. So far, 49 "Junior Cultural Ambassadors" from 29 countries have been invited to visit landmarks in China, such as the Forbidden City and the Great Wall. During these visits, they took part in intangible cultural heritage activities such as woodblock printing, calligraphy, and traditional Chinese painting, while savoring local delicacies like Peking duck and pancakes. Through comprehensive and immersive experiences, these "Junior Cultural Ambassadors" have gained a deeper understanding of the profound Chinese culture. Each year, the Event has focused on distinct themes such as the Winter Olympics, Chinese arts, urban landscapes, and culinary culture. In collaboration with China Cultural Centers Overseas, China National Tourist Offices, and other international organizations, the organizer has invited teenagers from all over the world to participate in the selection of "Junior Cultural Ambassadors," gradually making the Event a vital platform for cross-cultural exchanges among young people worldwide and effectively promoting the global dissemination of fine traditional Chinese culture.

▲ 2024 China Soong Ching Ling Foundation "Junior Cultural Ambassadors" Event where "Junior Cultural Ambassadors" were singing *Auld Lang Syne* together

▲ 2025 China Soong Ching Ling Foundation "Junior Cultural Ambassadors" Event

Enhancing Mutual Learning among Civilizations through Culture

The event aims for "people-to-people friendship and mutual understanding". By virtue of art and culture, it facilitates profound exchanges and mutual understanding among global youths, offering robust support for enriching multicultural dialogues. The past four sessions of the "Junior Cultural Ambassadors" Event all have emphasized Chinese language application as a core component, encouraging participants to express themselves in Chinese through segments like Chinese greetings and calligraphy displays. This approach showcases foreign youths' understanding and passion for Chinese culture in such fields as calligraphy and painting, tea ceremony, musical instruments, poetry, and architecture.

So far, this event has become a significant channel for international youths to learn Chinese and perceive China, thereby effectively boosting the global dissemination and recognition of fine Chinese culture. And it has been proven to be an influential brand project that promotes cultural exchanges, mutual learning among civilizations, and the building of a community with a shared future for mankind.

▲ Retrospective videos for historical sessions of the Event

▲ "Junior Cultural Ambassadors" were sharing thoughts on the Chinese New Year and conveying new year blessings

Promoting Chinese Culture for Nurturing New Generations Who Know and Are Friendly to China

The past four sessions of the "Junior Cultural Ambassadors" Event all have emphasized Chinese language application as a core component, encouraging participants to express themselves in Chinese through segments like Chinese greetings and calligraphy displays. This approach showcases foreign youths' understanding and passion for Chinese culture in such fields as calligraphy and painting, tea ceremony, musical instruments, poetry, and architecture. This Event has become a significant channel for international youths to learn Chinese and perceive China, thereby effectively boosting the global dissemination and recognition of fine Chinese culture.

To promote "people-to-people friendship, livelihood cooperation, and mutual understanding," the Event pools resources to cultivate new generations who understand and befriend China. By virtue of art and culture, it facilitates profound exchanges and mutual understanding among global youths, offering robust support for enriching multicultural dialogues. So far, the Event has been proven to be an influential brand project that promotes cultural exchanges, mutual learning among civilizations, and the building of a community with a shared future for mankind.

▲ "Junior Cultural Ambassadors" were experiencing intangible cultural heritage kite-making at Prince Kung's Palace Museum

▲ "Junior Cultural Ambassadors" were practicing Chinese Kung Fu with Chinese youths

Digital "Acupuncture Master": Building a Global Health Community

▲ "Acupuncture Master" digital Chinese medicine acupuncture virtual simulation training system

Applying Institution

Xi'an Vesalius Digital Technology Co., Ltd.

Other Participating Institution

Shenzhen Dongxizhi Information Technology Co., Ltd.

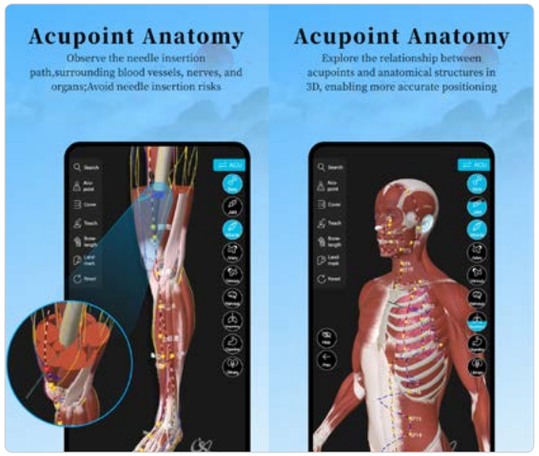
Countries and Regions Covered or Involved in the Implementation

Over 20 countries and regions such as China, the United States, Japan, Singapore, South Korea, and Malaysia

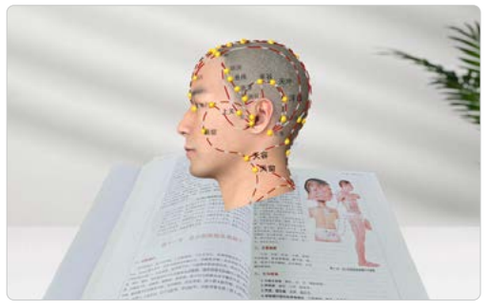
"Acupuncture Master" integrates cutting-edge technologies such as 5G, artificial intelligence, big data, cloud computing, 3D modeling, and VR/AR training, as well as multilingual knowledge graphs. The platform provides a digital learning environment for over one million students across more than 20 countries, making traditional medicine more accessible, interactive, and inclusive, and contributing to the global development of human health.

Building a Bridge for Mutual Learning among Civilizations and PromotingIn-clusive Education Worldwide

As the exclusive partner of AR digital illustrations of China Traditional Chinese Medicine Press, “Acupuncture Master” innovatively integrates modern anatomical science with classical TCM theory. Through virtual simulation and human-computer interaction technologies, it digitally reconstructs meridian circulation, acupoint positioning, and acupuncture techniques—realizing a seamless transformation from theoretical learning to practical application. The platform provides global users with an immersive and accessible experience in learning traditional Chinese medicine and acupuncture.



▲ "Acupuncture Master" creates an integrated smart platform for teaching, learning, practicing, testing, management, evaluation, research and competition



▲ Motion 3D model technology presents abstract meridian points in an intuitive three-dimensional form

▲ At the International Rehabilitation Forum, students from home and abroad observed the "Acupuncture Master"

Four Core Highlights: Interdisciplinary, Cross-disciplinary, and Integrated In-novation

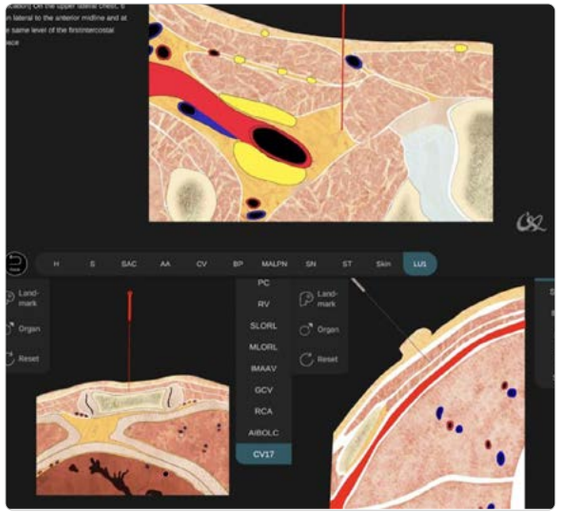
3D Virtual Simulation, Practice What You See: The platform builds a 3D digital acupuncture model, displaying the circulation of the twelve meridians, spatial positioning of acupoints, and skin layers. Users can observe and simulate acupuncture operations with 360-degree interactive visualization.

Integration of Chinese and Western Medicine, Safe Visualization: By digitally overlaying TCM meridians with modern anatomical structures, the system addresses major challenges in disseminating TCM knowledge. The one-click comparison between traditional and modern systems improves both operational accuracy and safety.

One System, Global Classroom: The platform enables anytime, anywhere, any-device learning experiences—on mobile phones, tablets, PCs, and VR/MR devices. Institutions in the United States and other countries have adopted the system for remote TCM education and clinical training. Through ongoing participation in international rehabilitation forums, Acupuncture Master has enhanced its global influence and greatly increased student engagement.

Multi-language translation breaks down communication barriers: The system supports real-time translation of technical terms in Chinese, English, Japanese, and other languages, allowing machine-readable expression of complex TCM concepts such as “time acupuncture.” This feature lays a solid linguistic and technological foundation for the international dissemination of Traditional Chinese Medicine.

▲ Chinese smart interface for domestic scenarios



▲ More than just a product, it's a partner who understands your language — supports real-time switching between Chinese and English

Advancing International Standards and Building a Shared Global Health Ecosystem

"Acupuncture Master" adopts an open technological architecture that is fully compatible with iOS, Android, and HarmonyOS systems, supporting seamless access across mobile, tablet, PC, and VR/MR platforms. In 2024, the company co-authored International Acupuncture with Liu Baoyan, Chief Researcher at the China Academy of Chinese Medical Sciences and President of the World Federation of Acupuncture-Moxibustion Societies, and Guan Ling of the PLA General Hospital. The initiative aims to foster a global learning and cooperation ecosystem for acupuncture, promoting international standardization and contributing to the construction of a healthy, inclusive global community.

"Acupuncture Master" not only provides professional acupuncture learning and training, but also relies on the globality and openness of the Internet to cultivate students' global vision and cross-cultural communication skills, and help build a human health community.

▲ Professional book collaboration

▲ "Acupuncture Master" relies on the digital internet to create a platform for international civilization exchange and mutual learning

"On the Path of the Great Journey, Building the Silk Road Dream" —A Multimedia News Campaign for the 10th Anniversary of the Belt and Road Initiative

▲ Promoting the Silk Road Spirit, Telling China's Stories Well

Applying Institution

Jiangsu Broadcasting Corporation Litchi News

Countries and Regions Covered or Involved in the Implementation

18 countries and regions such as China, Poland, Germany, Russia, and Uzbekistan

2023 marked the 10th anniversary of the Belt and Road Initiative (BRI). The multimedia news campaign "On the Path of the Great Journey, Building the Silk Road Dream" showcased the Initiative's remarkable transformation over the past decade—from visionary blueprint to tangible reality—highlighting its extraordinary achievements in fostering international cooperation and advancing shared prosperity from a global perspective.

Traversing Continents, Documenting a Flourishing Journey

The reporting team traversed eight time zones, covering tens of thousands of kilometers across nearly 20 countries and over 30 cities in Asia, Africa, and Europe. Centered on the BRI's five cooperation priorities—policy coordination, facilities connectivity, unimpeded trade, financial integration, and people-to-people bond—the campaign delivered a diverse array of immersive and interactive multimedia products, including:

"*Witnessing Mountains and Seas*" — an in-depth interview series

"*No Mountains or Seas Can Part Kindred Spirits*" — a character-driven micro-documentary

"*Steel Camel Caravan on the Belt and Road*" — thematic reports on the China-Europe Railway Express

"*On the Path of the Great Journey, Building the Silk Road Dream*" — a cross-regional live broadcast

Through audio, video, photo essays, and H5 interactive features, these productions vividly captured tangible progress in infrastructure development, cultural integration, and economic cooperation across participating countries. From the "first-hand moment" of Zimbabwe's president announcing the opening of a Chinese-renovated airport, to the "Silk Road stories" of Cambodian women advancing their careers in the Sihanoukville Special Economic Zone (SSEZ), to the "transformative change" brought by the Chinese-built Padma Bridge—turning Bangladesh's Padma River from a natural barrier into a thoroughfare—each narrative brought the Belt and Road vision to life.

▲ Poster of the cross-regional live broadcast "*On the Path of the Great Journey, Building the Silk Road Dream*"

The series garnered over 520 million total views online and received multiple prestigious industry awards, demonstrating its profound impact both domestically and internationally.

▲ Poster of the character-driven micro-documentary "*No Mountains or Seas Can Part Kindred Spirits*"

Innovating Narrative Perspectives, Gathering Diverse Voices

In its storytelling approach, the campaign embraced lightweight, diverse formats while spotlighting authentic details and compelling moments. By blending documentary realism with journalistic depth, it adopted an innovative narrative lens to chronicle stories of shared commitment and progress along the Silk Road.

The micro-documentary "No Mountains or Seas Can Part Kindred Spirits" portrayed individuals of different nationalities, languages, and backgrounds growing, learning, and working side by

▲ August 22, 2023: Interviewing Shudan, a maintenance worker at the Barapukuria Coal Mine, in a village in Dinajpur, Bangladesh

▲ August 14, 2023: Interviewing the Deputy Director of the local Water Supply Authority in Siem Reap, Cambodia

▲ August 17, 2023: Interviewing Songphan, Director of the Lao Education Department, in Vientiane, Laos, and group photo with department staff

▲ August 19, 2023: Interviewing Chinese and Bangladeshi workers involved in the construction of the Dhaka Airport Elevated Expressway, a China-Bangladesh joint project, in Dhaka, Bangladesh

side along this path of peace, prosperity, opening-up, innovation, and connecting different civilizations.

Featured stories included:

A Chinese mentor who has trained 24 international apprentices over more than a decade

Lao siblings who, after studying in China, became pioneers among the first generation of railway workers on the China-Laos Railway

A Polish man who rose from warehouse porter to general manager of a cross-border logistics facility

These ordinary yet extraordinary builders and strivers resonated deeply with online audiences, inspiring reflections such as: "The bridges built through infrastructure are also bridges that connect hearts and minds."

The project also leveraged cutting-edge XR (Extended Reality) technology, enabling real-time interaction between hosts and virtual environments to deliver a multi-dimensional, immersive experience of the BRI's global achievements.

▲ Short video published by Discover Nanjing

Coordinating Multi-Platform Communication, Amplifying Voices in Chorus

The campaign generated extensive international reach and impact, achieving particularly notable results in cross-cultural exchange. Multimedia content was distributed through Chinese Radio Seattle (USA), bilingual channels in Australia, and global platforms including YouTube and Twitter, reaching audiences across multiple countries and regions.

During the 2023 Shanghai Cooperation Organization TV Festival, the campaign's short videos, vlogs, and flash content were featured in special screenings, further elevating the global influence of BRI collaboration stories.

The cross-regional live broadcast "*On the Path of the Great Journey, Building the Silk Road Dream*" was co-produced by over 20 media organizations and promoted by 315 online media outlets. The livestream drew more than 22 million views, with related topics generating over 520 million reads and 279,000 interactions across platforms, creating a powerful "chorus effect" that resonated worldwide.

Innovative Pathways for Civilizational Exchange and Mutual Learning from the Perspective of Constructing Cyberspace Community with a Shared Future

文明互鉴
图形印创新实验科研项目

Applying Institutions

Xiling Seal Engravers' Society; Office of Cyberspace Affairs Commission, CPC Ningbo Municipal Committee

Other Participating Institutions

Publicity Department (Office of Cyberspace Affairs Commission) of the CPC Jiangbei District Committee, Ningbo Municipality; Ningbo Chen Zhenlian Master Studio of Arts

Countries and Regions Covered or Involved in the Implementation

193 countries and regions such as China, the United States, Brazil, Switzerland, and France

The "Graphic Seals" innovative project represents China's unique contribution to fostering global dialogue among civilizations. By harmoniously blending traditional seal engraving—an art form spanning thousands of years—with diverse cultural symbols from around the world, this initiative has forged a transcendent symbolic language that unites peoples across ethnic and geographical boundaries, exemplifying the beauty of civilizational exchange.

Contemporary Response of Eastern Art: Making Chinese Seals Speak to the World

▲ Selected Works from The 3rd Exhibition of Innovative Works in Graphic Seals: Mutual Learning between Civilizations along Belt and Road

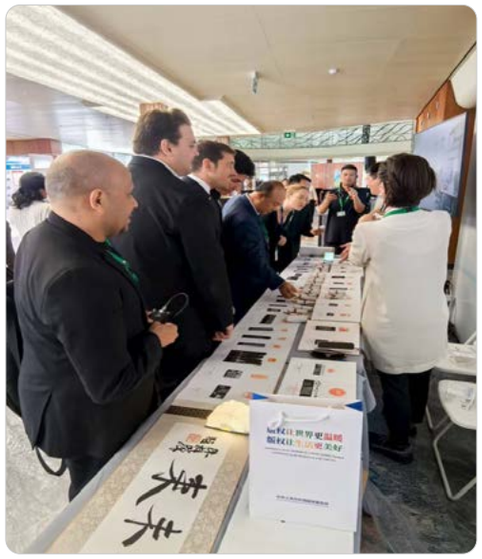
Chinese seal engraving stands as one of humanity's most refined art forms, earning recognition as a UNESCO Intangible Cultural Heritage for its deep connection to Chinese aesthetic traditions and writing systems. However, the very cultural specificity that makes this art so precious can also create barriers to international understanding and appreciation. Recognizing this challenge, the renowned Xiling Seal Engravers' Society joined forces with municipal authorities of Ningbo to initiate a visionary art experiment on "Graphic Seals". This cultural innovation revolutionizes traditional practice by channeling ancient Chinese engraving toward depicting global cultural treasures—from iconic landmarks and architectural marvels to sacred totems and beloved folk symbols representing civilizations worldwide. Each graphic seal becomes a miniature masterpiece, distilling complex cultural imagery into perfectly balanced compositions that speak directly to the heart. By making the sophisticated beauty of seal engraving immediately recognizable and emotionally powerful for viewers everywhere, this project opens new pathways for artistic diplomacy and cross-cultural understanding.

Scaling Beyond Borders: Cloud-Based Collaboration Across 193 Nations

The “Graphic Seals” initiative has evolved far beyond its origins as an artistic experiment, transforming into a remarkable global artistic collaboration that successfully integrates digital outreach with traditional craftsmanship. Since its launch, the project has orchestrated three international open calls, generating an impressive response of over 2,000 seal-carving submissions from participants spanning all 193 countries and regions during its five-year journey.

The reach of the “Graphic Seals” extends far beyond traditional exhibition walls through a thoughtful combination of global touring and digital innovation. Each artwork is transformed into high-definition visual content that travels instantly across online platforms and social media. Whether audiences encounter these seals in exhibition halls across Kazakhstan or Brazil, or discover them through digital channels in Japan or Switzerland, the project’s dual presence—physical and virtual—has generated unprecedented opportunities for global cultural exchange.

▲ Mutual Learning Among Civilizations with a Shared World Vision” Themed Exhibition of Graphic Seals (Far right: Miguel Ángel Moratinos, UN Under-Secretary-General)



▲ "Protecting Innovation, Building a Shared Future" Graphic Seals Exhibition (Geneva, Switzerland)

Stepping onto the World Stage: Artistic Interpretation at the UN Headquarters

The “Graphic Seals” project reached its pinnacle on June 9, 2025 (EST), with a prestigious debut at the United Nations Headquarters in New York. Marking the inaugural “International Day for Dialogue among Civilizations”, the exhibition “Mutual Learning Among Civilizations with a Shared World Vision” showcased 193 meticulously crafted graphic seals, each symbolizing one of the UN’s member states. This momentous cultural event drew senior international officials, including Miguel Ángel Moratinos, UN Under-Secretary-General and High Representative for the United Nations Alliance of Civilizations, who observed this unique artistic bridge between ancient tradition and modern diplomacy.

This exhibition makes the important idea of mutual learning among civilizations come alive through beautiful art that everyone can understand. Each graphic seal tells a story—acting as a cultural symbol that represents its nation’s unique heritage while embracing shared human values of peace, development, and fairness. The entire collection proves the wisdom of “harmony in diversity” and “mutual appreciation”, showing how different cultures can maintain their special qualities while building a better world together.

The “Mutual Learning Among Civilizations” Graphic Seals project has masterfully navigated the modern world—using art as its compass and the internet as its vessel—to carry China’s rich cultural heritage onto the global stage. Despite their miniature scale, these seals reveal profound truths about human civilization: our remarkable diversity and our fundamental unity. This innovative approach has transformed traditional Chinese seal carving from a regional art form into a powerful medium for international cultural dialogue and understanding. Moving forward, these graphic seals will continue their vital mission as cultural ambassadors, crossing every border, building lasting friendships, and helping to create a community with a shared future for mankind.

▲ "Ningbo in Graphic Seals" Exhibition at Expo 2025 Osaka (Osaka, Japan)

▲ “Mutual Learning Among Civilizations, Seal World” Special Exhibition of CEEC-Themed Graphic Seals (Ningbo, China)

Sperm Whale Rescue in Xiangshan, Ningbo: Sharing China's Story of Ecological Protection with the World

▲ Multiple city departments unite for critical sperm whale rescue on the shore

Applying Institution

Ningbo Evening News

Other Participating Institutions

Cyberspace Affairs Office of the CPC Ningbo Municipal Committee, Xinhua News Agency, People's Daily, CCTV News, etc.

Countries and Regions Covered or Involved in the Implementation

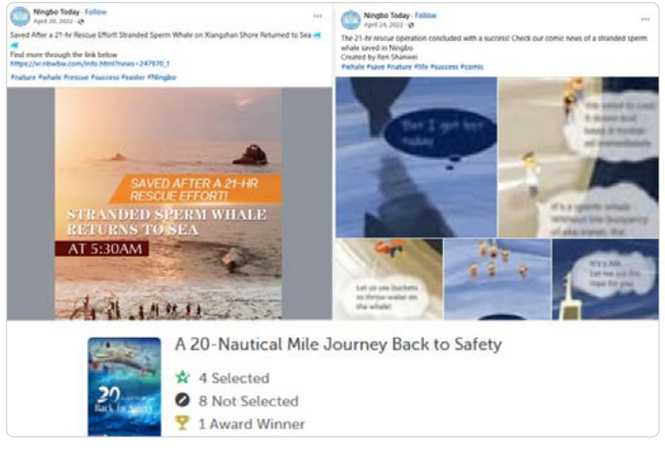
12 countries and regions such as China, Australia, France, Indonesia, and Japan

On the morning of April 19, 2022, a 19-meter-long sperm whale became stranded off the coast of Shipu, Xiangshan, Ningbo, its life hanging by a thread. The incident gripped the Chinese public and drew global attention. Ningbo's authorities quickly launched an interdepartmental emergency response. After 21 hours of nonstop work by hundreds of responders, the sperm whale was safely returned to the sea. The rescue was covered jointly by Ningbo Evening News, Xinhua News Agency, People's Daily, and CGTN across multiple platforms. The rescue showcased both humanity's respect for life and China's growing commitment to ecological conservation on the global stage.

Multi-Lingual Coverage Broadcasts Environmental Pledge Globally

On April 19, 2022, Ningbo Evening News published an English-language article and an illustrated feature about the whale rescue, sharing them on international social media platforms. What began as a local news story quickly gained global attention. Following Ningbo Evening News's lead, the People's Daily app, People's Daily Overseas Edition, Xinhua News Agency, and CGTN News also began posting updates on the rescue operation.

On April 24, the People's Daily English app directly featured the Ningbo Evening News article, extending global reach. Xinhua News Agency translated and released the story in nine languages—including English, Japanese, French, Spanish, Portuguese, Russian, Thai, Turkish, and Indonesian—bringing it to audiences worldwide. International outlets such as AFP also picked up the piece, generating more than 100 related reports and a total media reach of over 4.6 billion. In December 2024, the bilingual documentary A 20-Nautical-Mile Journey Back to Safety, produced by Ningbo Evening News, was screened at international film festivals, bringing the whale rescue story to a global audience once again. Through its emotional storytelling, the film conveyed China's ecological philosophy of harmonious coexistence between humans and nature, deepening the international impact of the story.

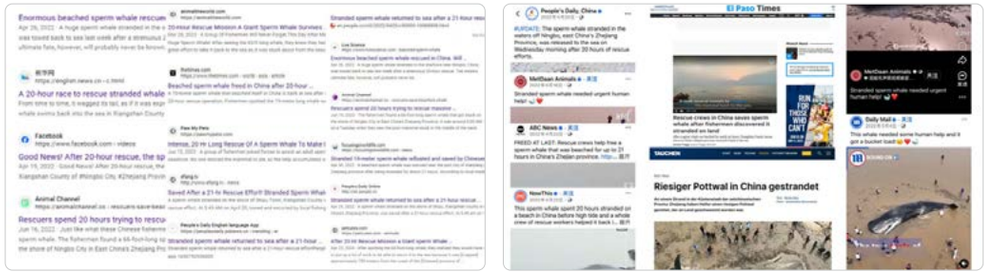


▲ Content created by *Ningbo Evening News* based on the whale rescue

Multi-Format Reporting: A New Model for Globalizing Local Chinese News

The coverage of the Xiangshan sperm whale rescue adopted a multi-dimensional format—integrating text, photography, video, illustration, and documentary—to create an immersive storytelling experience. Written articles emphasized the urgency of the rescuers' continuous efforts, while video clips showcased the team's compassionate commitment to saving the whale. Emotional engagement was enhanced through illustrations told from the whale's point of view. The bilingual documentary, A 20-Nautical-Mile Journey Back to Safety, brought this story of empathy and courage to audiences worldwide.

This innovative model broke the limitations of one-way information dissemination, fostering"-global interaction.". Social media comments such as "Excellent job!" and "Thank you everyone for showing so much kindness to the whale it needs" and "Bravo, another life saved!" show how people around the world responded positively to China's efforts in rescuing the stranded sperm whale. Through its multi-platform, multi-angle, multimedia approach, the operation allowed global audiences to feel China's care for marine life firsthand, setting a valuable precedent for the internationalization of local Chinese news.



▲ The whale rescue effort being reposted and covered by global media outlets

Spreading Ecological Values: Creating Multi-Dimensional Social Impact

The successful international coverage of the Xiangshan sperm whale rescue enhanced China's international image in ecological protection and generated universal value in both cross-cultural communication and environmental conservation, benefiting the global green agenda and international understanding.

From a cross-cultural communication perspective, the coverage of this compelling animal rescue turned a local event into a moving story that transcended language, culture, and national borders. Without lengthy explanations, it allowed audiences from diverse countries and cultural backgrounds to grasp China's ecological values, tapping into shared human emotions and reverence for nature, and serving as a bridge between different civilizations.

From an ecological perspective, the coverage carefully documented the 21-hour rescue, offering best practices for marine wildlife conservation and showing that humans and nature can coexist in harmony. It highlighted the importance of ecological responsibility while providing a reference for how similar events can be reported internationally. Ultimately, the rescue reaffirmed a simple yet powerful belief shared across humanity: every life deserves respect and protection, and harmony between humans and nature is our shared vision for a better world.

▲ At 5:00 AM, April 20, the stranded sperm whale returns to the sea

Study in Beijing: A Bridge for Educational Exchange and Cross-Cultural Understanding

▲ The Forbidden City is a landmark of Beijing. Welcome to start your study abroad journey in China in Beijing.

Applying Institution

Beijing Daily

Countries and Regions Covered or Involved in the Implementation

23 countries and regions such as China, Armenia, Brazil, Cambodia, and Finland

As a popular destination for international students, Beijing carries the vital mission of promoting global talent exchange and cultural mutual learning. Relying on its media influence, Beijing Daily has developed the "Study in Beijing" brand to help international students better understand the city's educational resources, advance the internationalization of Chinese higher education, and inject educational vitality into the building of a community with a shared future in cyberspace.

Connecting students around the world and creating a cross-border exchange platform

The “Study in Beijing” brand builds an information platform with a global perspective, covering 23 countries and regions, including China, Armenia, Brazil, and Cambodia. It promotes international students’ understanding of study abroad at Beijing’s universities and raises their international profile. Through its overseas social media matrix @StudyinBeijing (Facebook, X, and YouTube), the brand provides a one-stop service for prospective international students worldwide. These accounts regularly share promotional videos about Beijing’s universities, information about studying abroad, interviews with admissions officers, student surveys, and stories about the study and life experiences of international students in Beijing. They also offer consultation services for prospective applicants. By leveraging multi-platform online communication, “Study in Beijing” not only provides information and interactive channels for global learners but also effectively fosters mutual understanding and engagement between Beijing’s universities and international students worldwide, demonstrating the growing international influence of Chinese higher education.

▲ Study in Beijing (@StudyinBeijing) Facebook page

Presenting a Diverse China from the Perspective of International Students

The “Study in Beijing” brand breaks through traditional media communication models by creating innovative content centered on the perspective of international students. The brand collaborated with Peking University’s Global Communication Studio to produce the bilingual video “International Students Cycling Through Old Beijing”, and co-produced the bilingual series “International Students on China” with Beijing International Studies University, making international students the protagonists of cultural communication.

▲ "Study in Beijing" partnered with Peking University's Global Communication Studio to create the bilingual video "International Students Cycling Through Old Beijing."

▲ “Study in Beijing” collaborated with Beijing International Studies University to create the bilingual video series “International Students on China”

Meanwhile, the brand actively nurtures international student influencers by selecting those who have studied and lived in Beijing for many years and are familiar with local culture. With the support of Beijing Daily’s local media resources, they are guided and encouraged to create their own content. Russian student Melissa documented her life in Beijing, and her short video about savoring Beijing’s traditional stewed offal snack “Lu Zhu” recently won the “Beijing Good” award in the “Beijing Style” short video competition. American student Kevin, a Peking University graduate, chose to stay in Beijing to start his own video business. His humorous before-and-after short clips about life in China have helped more young people abroad see a real China. This down-to-earth content not only enriches international communication perspectives but also allows the world to see a true, multifaceted, and diverse China, breaking down cultural barriers and building bridges of cross-cultural understanding.

Precise service helps international students study in Beijing

The “Study in Beijing” brand consistently upholds the principle of inclusiveness, focusing on the practical needs of international students and building a comprehensive service system. The brand has established an expert advisory think tank comprised of leaders from international student management departments at major universities in Beijing. By implementing a “one-school-one-policy” service model, it provides customized solutions for information sharing, partnership development, and promotional initiatives tailored to each institution. In addition, the brand regularly hosts expert seminars to conduct in-depth discussions on key issues such as student recruitment, management, and employment. These efforts not only expand the global influence of the “Study in Beijing” brand but also help make Beijing a top destination for international students pursuing higher education in China.

▲ The "Study in Beijing" brand invites international students in Beijing to participate in the short video "International Students Walking on Beijing Central Axis".

Migu “AI + Sign Language Digital Human”: Real-Time Speech and Text Translation Service Promoting Inclusive Cultural Exchang

▲ Migu Sign Language Digital Human Displayed on the Migu Video APP

Applying Institution

Migu Video CO., Ltd.

Other Participating Institutions

Migu Culture Technology Co.,Ltd.; Migu Xinkong Culture Technology (Xiamen) Co., Ltd.; China Mobile International;

Countries and Regions Covered or Involved in the Implementation

China, Malaysia, Singapore, and Thailand

Faced with the dual barriers of language and cultural communication faced by nearly 500 million people with hearing impairments worldwide, China Mobile Migu Co., Ltd. (hereinafter referred to as "Migu"), driven by technological innovation, has launched the "AI Sign Language Digital Human" service. This service enables real-time sign language translation of speech and text, aiming to break down communication barriers, provide efficient digital content services for the hearing-impaired group, and thereby promote the integration of people with and without hearing impairments as well as cultural mutual learning.

AI Digital Human Sign Language System: Building a Global Barrier-Free Cultural Exchange Platform for the Hearing-Impaired

According to statistics from the World Health Organization (WHO), there are approximately 70 million people who are deaf or hard of hearing, and 430 million people with hearing impairments worldwide, accounting for 5% of the global total population. Moreover, there are more than 300 significantly different sign language systems, leaving people with hearing impairments trapped in the long-term dilemma of dual barriers in language and culture. Against this backdrop, Migu, in collaboration with a Hong Kong-based radio station and China Mobile International Limited, has built an innovative barrier-free communication ecosystem in the Hong Kong Special Administrative Region of China, and realized global cross-regional services through cloud capabilities and platform deployment.

China Mobile International Limited and Hong Kong Mobile have leveraged their profound regional resources and professional service capabilities to facilitate the implementation of the project in the Hong Kong Special Administrative Region of China and Southeast Asia Region. At the technical level, Migu has cooperated with a certain university in Hong Kong to develop a Cantonese sign language lexicon, promoting in-depth integration between the "National General Sign Language" and the Cantonese sign language system. Through the operation of the platform system, the digital human is enabled to conduct sign language applications in real time, forming a replicable standardized technical path for global cross-border cultural exchange services. This breakthrough has greatly eliminated the language barriers for people with hearing impairments in international communication, and promoted their wider participation in international affairs, cultural exchanges, academic cooperation and other activities.

The "Dual-Track Model of Technological Standardization + Cultural Localization" for AI Sign Language Services

The project has pioneered a three-level technical framework of "Semantic Distillation - Sign Language Segmentation - Action Generation": it understands content through multilingual speech recognition technology, splits sign language vocabulary via intelligent algorithms, then generates coherent gesture actions. When combined with high-precision 3D rendering technology, the system enables the digital human's gestures, facial expressions, and lip movements to appear more natural and lifelike.The project has built a collaborative closed loop of "Technological R&D - Global Localization Adaptation - Cloud-based Cross-regional Deployment". It con-

ducts grammatical mapping between the National General Sign Language standards and Cantonese sign language habits, realizes hardware implementation through regional resources, and forms a full-process standardized delivery system covering “Speech Recognition - Semantic Processing - 3D Digital Human Rendering - Hardware Terminal Deployment”. This “dual-track model of technological standardization + cultural localization” provides a replicable technical solution for global barrier-free communication under the framework of the United Nations Convention on the Rights of Persons with Disabilities.

▲ The Second Venue for the Chengdu Deaf Football Team to Watch the Match

During the 2022 FIFA World Cup Qatar, the audio content of the match commentary was first converted into text through unified speech recognition technology, then split into general sign language vocabulary units via semantic processing, and finally coherent and standardized sign language actions were generated by 3D digital human rendering technology. This ensured accurate and fluent sign language interpretation, and the entire process followed unified technical standards.

In terms of cultural localization, for hearing-impaired audiences in the Hong Kong Special Administrative Region of China, the system conducts grammatical mapping between the National General Sign Language standards and Cantonese sign language habits. For example, when expressing local characteristic vocabulary or idiomatic expressions, the digital human adopts gestures and syntax that conform to the expression logic of Cantonese sign language, enabling the hearing-impaired group in Hong Kong to understand the content more naturally. This model not only ensures the stable output of technology in different scenarios, but also respects regional cultural differences, providing a practical and referenceable example for other countries and regions to carry out similar barrier-free services.

Technological Inclusiveness Empowers Social Equity and Inclusive Development

Through of its AI sign language digital human technology, Migu has provided nearly 500 million people with hearing impairments worldwide with channels for information access and communication, significantly alleviating the inequality in information acquisition. During the 2022 FIFA World Cup Qatar, Migu launched a live broadcast entrance titled “For You Who Cannot Hear”. The digital sign language anchor “Yitang” delivered real-time sign language commentary for 12 key matches, covering over 20 million people with hearing impairments in China. This marked the first time these individuals could synchronously enjoy the grand feast of World Cup matches. The anchor accurately translated professional content such as players’ names and tactical terms, with both the fluency of sign language movements and the semantic matching reaching industry-leading levels.

Prior to this, during the Beijing Winter Olympics, the same type of sign language digital human had also completed the translation of 8,214 general sign language entries from the National General Sign Language Dictionary and over 2,000 Winter Olympics-related vocabulary terms, ensuring that people with hearing impairments could obtain real-time information about the Winter Olympics.

The cross-border sign language translation system has opened up channels for people with hearing impairments to access social information, enhanced social equity and inclusiveness, and enabled people with hearing impairments to participate more fully in cultural, educational and social affairs. The technology has been applied to offline viewing scenarios: the Chengdu Deaf Football Team and hearing-impaired users from all walks of life have synchronized their experience of the passion of World Cup matches at the “Second Venue” through digital sign language commentary, realizing the equal sharing of sports and cultural experiences.

Relying on market-oriented operations, the project has achieved sustainable commercial value, fostered cross-sector innovation at the intersection of culture and technology, injected impetus into the development of related industrial chains, and promoted employment and economic growth. In addition, the technological achievements of the project can be extended to international scenarios, such as public services, education and training, medical and health care, cultural, sports and entertainment sectors. It builds a platform for inclusive cultural exchange between people with and without hearing impairments. fosters an inclusive and barrier-free online ecology, and serves as a typical model for technological inclusiveness and social integration.

▲ The Second Venue for the Chengdu Deaf Football Team to Watch the Match

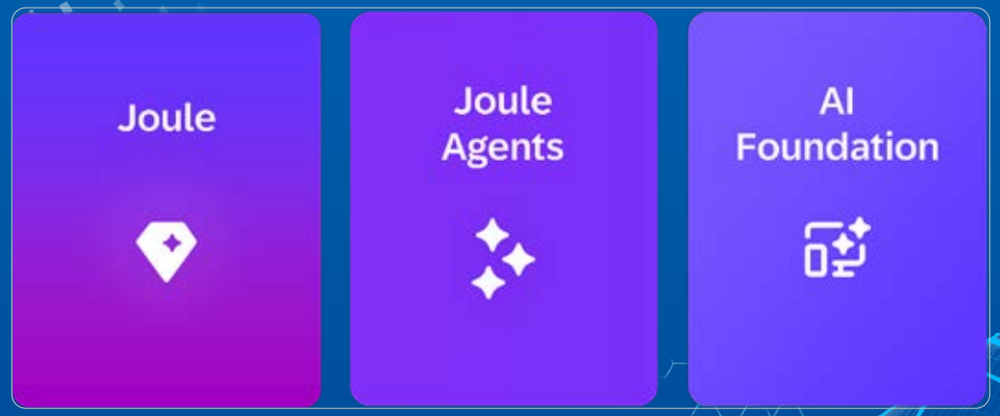
03

Innovative Development of the Digital Economy

Promoting Innovative Development of the Digital Economy for Common Prosperity

Outstanding Case

SAP Business AI: Reinventing Enterprise Management to Enable "Predictable" Growth



▲ SAP Business AI

Applying Institution

SAP (China) Co., Ltd.

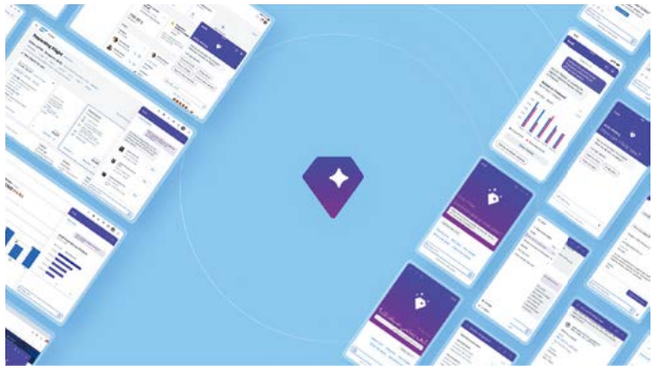
Countries and Regions Covered or Involved in the Implementation

Over 80 countries and regions such as China, Germany, France, the United Kingdom, and the United States

As a global leader in enterprise applications and business AI, SAP remains at the forefront of industrial intelligence. In 2018, SAP pioneered the launch of the "Intelligent Enterprise" solution, integrating AI technologies such as machine learning into business processes on top of business digitalization. Later in 2023, SAP further advanced this vision by introducing the "SAP Business AI" solution, driving businesses into a new era of intelligence. Now, this solution has been widely adopted by over 34,000 companies across 25 industries worldwide. Supported by SAP's "flywheel" effect of applications, data, and AI", it brings powerful momentum into intelligent transformation and sustainable upgrading of enterprises.

Incorporating Industry-specific Features for Cross-sector Empowerment

Deeply grounded in industry-specific features, SAP Business AI has been widely adopted across 25 major industries worldwide, enabling intelligent transformation for manufacturing, services, traditional industries and emerging sectors. Now, SAP customers across industries account for over 70% of Forbes Global 2000 companies. Built upon decades of best practices in business processes and industry data models, SAP Business AI embodies our philosophy of "Data as the Nexus, Scenarios as the Core, and Sustainability as the Goal", delivering proven AI implementations of core business scenarios across industries. By integrating deep industry knowledge with intelligent algorithms, it not only ensures broad coverage but also strong alignment between AI outputs and business needs. For example, in automotive industry, SAP partners with Schaeffler to develop an intelligent recyclable container solution, leveraging AI to predict packaging demand and automate inventory management. In the equipment manufacturing sector, SAP worked with Bosch Power Tools to build customer service AI agents, which help drive annual savings of over 2,500 hours for each after-sales service center, significantly improving response times and customer satisfaction. In professional services industry, SAP collaborated with Accenture to develop an intelligent cash management system, accelerating cash processing by 80% to optimize efficiency of financial operations.



▲ SAP provides AI applications for 25 major global industries

▲ SAP integrates applications, data, and AI into a unified whole

End-to-end Value Chain Integration to Drive AI Adoption of Industry Scenarios

Featuring end-to-end value chain integration and embedded comprehensive business scenarios, SAP Business AI has innovatively created a new paradigm of intelligent empowerment for enterprise-grade customers through its "flywheel" effect of "applications, data, and AI". Seamlessly embedded across core business processes including lead-to-cash, design-to-operate, hire-to-retire, and finance management, SAP Business AI minimizes the complexity of AI implementations in industry application scenarios. Now SAP has released more than 230 GenAI enterprise use cases, which are expected to exceed 400 by the end of 2025.

Guided by the principles of "relevant, reliable, and responsible", SAP Business AI is built on the SAP Business Technology Platform and SAP Business Data Cloud. Using the intelligent copilot Joule as a single-entry point, it delivers a "conversation as application" experience through natural language interaction. This helps companies create a "process - data - AI - value" closed loop of intelligent upgrading, driving the leap from experience-based to data-driven, real-time decision-making. In real world scenarios, the global chemical powerhouse BASF is utilizing SAP Business AI to optimize complex production scheduling, minimizing energy consumption and downtime. Leading semiconductor manufacturer AMD leverages SAP Business AI to troubleshoot supply chain issues, lowering the average case processing time to 1 minute (down from more than 20 minutes) to optimize response time and operational efficiency.

Enabling Predictable Growth and Driving Global Sustainability

SAP is helping organizations worldwide—across industries, scales, and regions—achieve predictable growth with Business AI, continuously strengthening efficient, resilient, and sustainable global supply chains. McKinsey research estimates that AI could add US$2.6-4.4 trillion new value to the global economy annually, mostly from enterprise applications. SAP customers across 130+ countries and regions, over 0.4 million companies in total with 80% SMEs, contribute to 87% of global commercial transactions. With SAP Business AI, companies of various sizes benefit from over 30% average productivity boost. This not only unlocks trillion-dollar market potential for the global economy, but opens an affordable and efficient AI transformation path for SMEs.

Anchored in both financial benefits and social responsibility, SAP ties business success closely with human well-being, driving new global sustainability paradigm to help build a shared future for mankind. For example, after implementing SAP's carbon footprint and Business AI solutions, Martur Fompak, one of world's leading supplier of automotive seats, reduced its carbon emissions in production and transportation by 34% and 52% respectively, with 50x increase in carbon accounting efficiency. And SAP continues to invest in AI innovation, partnering with research institutions and companies worldwide to jointly explore how to accelerate AI empowerment of future industries. In 2025, SAP introduced SALT, the first AI training dataset based on real enterprise data, providing enterprise-grade data resources to institutions and partners to enhance industry-specific AI models.

SAP Business AI has successfully bridged the gap between tech concept and at-scale implementation, paving a solid path toward successful intelligent transformation for global organizations. In the future, SAP will continue to lead the global industrial ecosystem into a new era of intelligent business - one that is more efficient, resilient, and responsible.

▲ SAP embeds business AI into the core business processes of enterprises

▲ By the end of 2025, more than 400 generative AI scenarios will be launched

Outstanding Case

RCS Messaging Global Multi-Operator Cloud-Based Service

▲ RCS Messaging Accelerates the Evolution of Global SMS

Applying Institutions

China Mobile Internet Co., Ltd., China Mobile International Limited

Other Participating Institution

GSMA

Countries and Regions Covered or Involved in the Implementation

Over 50 countries and regions such as the UK and the Netherlands

With the rapid development of digital lifestyles, to break through the limitations of traditional SMS text-based experiences, China Mobile has implemented the GSMA RCS standard and launched a global collaboration initiative for RCS messaging. This effort aims to upgrade traditional SMS into rich media interactive messaging, driving the digital evolution of global communication services.

Implementing GSMA RCS Standard to Build Global RCS Interconnectivity

RCS (Rich Communication Services), established by GSMA, is a new-generation standard for rich media communication. It supports interactive features such as images, videos, location sharing, and menu buttons. As mobile internet and digital lifestyles evolve, users demand better communication experiences. To address the limitations of traditional SMS, China Mobile actively adopts the RCS standard, achieving coverage of 500 million devices and messaging volume exceeding 100 billion in the China market.

In response to global promotion initiatives, China Mobile has introduced an international collaboration solution to popularize RCS messaging worldwide. By establishing ecosystem partnerships with telecommunications enterprises in countries and regions such as the UK and the Netherlands, China Mobile leverages its mature experience in the China market to create globalized solutions. These solutions not only meet the needs of multinational enterprises for rapid rich media messaging development, but also help emerging market MNOs quickly upgrade to RCS messaging, effectively advancing the digital transformation of global communication services.

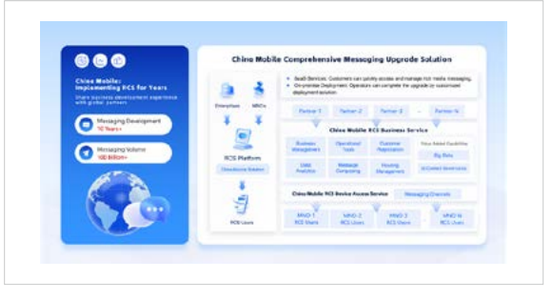
▲ Collaborating to Build a Global RCS Ecosystem

▲ China Mobile Showcases RCS Messaging at International Exhibition

Innovative Dual-Mode Solutions Enabling Rapid Upgrades for Global Partners

Upholding the principles of openness and shared growth, China Mobile actively supports GSMA's global promotion initiatives by upgrading its mature RCS messaging system in the China market into a global solution featuring "SaaS services + on-premise deployment".

Enterprise SaaS Services: An elastically scalable SaaS-based platform enables enterprise customers to quickly access and manage rich media messaging globally. By collaborating with international partners, China Mobile builds a worldwide RCS messaging network, achieving efficient routing of messages.



▲ China Mobile Promotes Global Collaboration in RCS Messaging

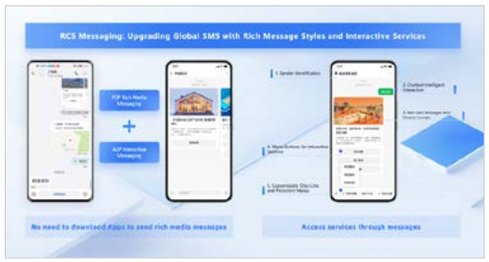
Operator On-Premise Deployment: Customized deployment solution based on GSMA RCS standard support rapid implementation and scaling without relying on specific hardware environments. This helps global operators complete the upgrade from traditional SMS to RCS messaging.

Opening a New Era of Interactive RCS Messaging to Drive Digital Transformation Across Various Industries

Leveraging the rich media interactivity of RCS messaging, China Mobile collaborates with partners to create innovative messaging services covering finance, e-commerce, government affairs, media, and other sectors. This transforms business messaging from one-way notifications into interactive intelligent service, significantly enhancing user engagement and increasing conversion rates. China Mobile explores the integration of AI and messaging, aggregating multi-scenario intelligent agent services to upgrade RCS messaging into an essential interface of AI services.

China Mobile will continue to advance the global development of RCS messaging, fostering collaboration with partners worldwide. China Mobile is committed to jointly building a community with a shared future in cyberspace.

▲ Experience Upgrade and Business Innovation with RCS Messaging



▲ RCS Messaging Application Service

Outstanding Case

ARTES 4.0: A Global Benchmark for International Robotics Collaboration

▲ ARTES4.0 is headquartered in ——Pisa, Italy

Applying Institution

Advanced Robotics and Enabling Digital Technologies & Systems 4.0

Other Participating Institution

Beijing International Technology Trading Alliance

Countries and Regions Covered or Involved in the Implementation

12 countries and regions such as China, Brazil, Germany, and Italy

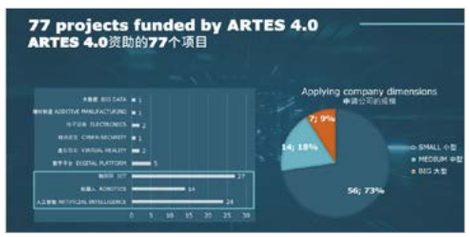
ARTES 4.0 is a national robotics technology hub supported by Italys Ministry of Economic Development, established under the EUs "Digital Europe" initiative, with its headquarters located in the Pienza Advanced Manufacturing District. As the core platform for robotics technology in Southern Europe, it connects 114 top institutions across Italys 14 regions, including Fiat Group, the Sant' Anna School of Advanced Studies in Pisa, and the Politecnico di Milano, forming a complete innovation chain from basic research to industrial application. With its strong technical integration capabilities, ARTES 4.0 has expanded its innovation ecosystem to 12 countries including China, Germany, and Brazil, becoming a key engine for promoting cross-border transformation of global robotics technology.

Global Collaborative Networks and Industrial Practices

▲ Hands-on platform that displays collaborative tasks between robots for use in using FBG photonics to press indented sensing skin

ARTES 4.0 has achieved global implementation of technological innovation through multilateral cooperation mechanisms. In China, the Sino-Italian Robotics Innovation Center co-established with Zhongguancun Dongsheng Science Park has built ten specialized laboratories focusing on cutting-edge fields such as spatial perception and human-machine interaction. Among these, the orthopedic surgical robot jointly developed with Beijing Jishuitan Hospital has completed 182 clinical surgeries with a precision rate of 99.2%, obtaining China NMPA certification and achieving large-scale installation. Within the EU, ARTES 4.0 collaborated with Germany's Fraunhofer IPA Institute to develop lightweight collaborative robots, which were successfully applied in Mercedes-Benz's flexible assembly production lines, improving production efficiency by 35%. Meanwhile, the electronic skin tactile sensor co-developed with France's CEA-LETI revolutionized precision processing technology in luxury goods manufacturing with a detection accuracy of 0.1 mm². For emerging markets, ARTES 4.0 adapted orchard harvesting robots for tropical fruit cultivation in São Paulo State, Brazil, reducing fruit damage rates to 3%; its underground autonomous inspection system successfully replaced high-risk manual operations at Anglo American Group in South Africa. These practices not only validate the universality of the technology but also establish an industrial collaboration network spanning Europe, the Americas, Asia, and Africa.

Technology innovation and industrial empowerment



▲ 77 projects funded by ARTES4.0

ARTES 4.0 has redefined robotics R&D paradigms through a global network of experts, bringing together 560 robotics scientists from 32 countries (including eight Nobel laureates), reducing medical robot development cycles from 8 to 4 years. Its industrial inspection system ARGO, validated by Italy's National Railway Company, achieves 10 times the efficiency of manual inspection. More crucially, ARTES 4.0 has established an open patent commercialization system that precisely matches 460,000 patents across EU member states through the BRICS technology transfer platform. This "global R&D + local adaptation" model has boosted production efficiency by an average of 50% for partner companies, with manufacturing data from Fiat, Ferrari, and other enterprises confirming these results. By 2025, the platform is projected to facilitate cumulative technology licensing transactions totaling €780 million, fully demonstrating its industrial empowerment value.

Future vision and global governance

▲ The implementation process of ARTES4.0s Beijing entity, China Robotics (Beijing) Research and Innovation Center, has officially commenced.

By 2030, ARTES 4.0 will invest 20 million euros to develop brain-computer integration technology, achieving breakthroughs in mind-controlled collaborative robotic arms; replicate the successful model of Brazilian agricultural robots in Vietnam's manufacturing sector, expanding emerging markets through technical decoupling and localization adaptation; while actively participating in global governance to promote the formulation of the "Robotics Human Rights Charter" under the G7 framework, and establish a mutually recognized robotics ethics testing system between China and Europe. As ARTES 4.0 Chairman Antonio Frisoli stated: "True technological innovation knows no borders — Italy contributes algorithmic precision, China provides scenario-scale capabilities, Brazil injects application creativity — this is the essence of global collaboration." This vision not only defines the future direction of technological development but also outlines a blueprint for building a transnational innovation community.

Bridging Digital Divides: ILIA's Contribution to Inclusive Internet Development and the UN 2030 Sustainable Development Agenda

▲ Latin American Artificial Intelligence Index, 2024

Applying Institution

Chilean Center for Artificial Intelligence (CENIA)

Other Participating Institutions

United Nations Economic Commission for Latin America and the Caribbean (ECLAC); CAF - Development Bank of Latin America and the Caribbean; Inter-American Development Bank (IADB); Organization of American States (OAS); United Nations Educational, Scientific, and Cultural Organization (UNESCO).

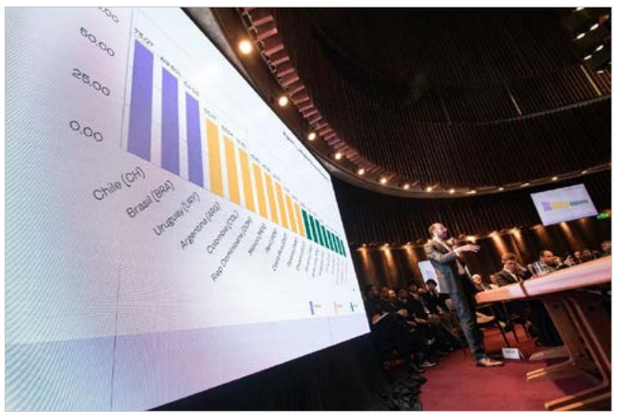
Countries and Regions Covered or Involved in the Implementation

19 countries and regions such as Argentina, Bolivia, Brazil, Chile, and Colombia

Latin American AI Index: World's first regional AI index uniting 19 LAC countries in pioneering digital cooperation framework.

Advancing Inclusive Technology Through Internet-Enabled Cooperation.

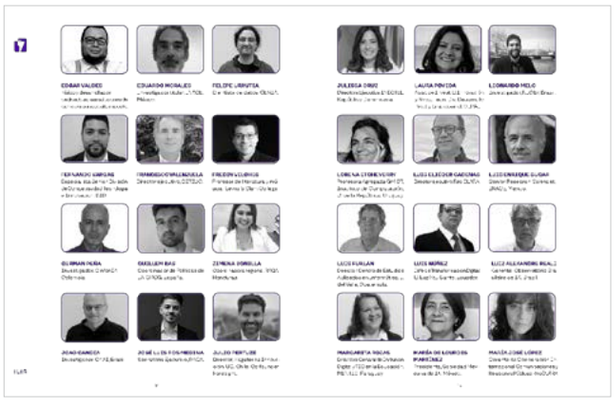
As a transformative public good supported by leading international organizations, ILIA highlights the power of internet-enabled cooperation to bridge digital divides, foster inclusive tech progress, and reshape AI governance through real-time knowledge sharing, cross-border coordination, and equitable access to advanced insights.



▲ Presentation of the Index Results, 2024 Edition

Establishing a Unique Framework for Sovereign Digital Cooperation

ILIA's uniqueness lies in its transparency, local relevance, and sovereign tech focus. With an international advisory committee, it grounds cooperation in national priorities while fostering collective progress, offering a replicable model for inclusive, ethical, and sustainable AI development centered on human well-being.



▲ Some members of the Technical Advisor Committee

Catalyzing Global Impact Through Cyberspace-Driven Innovation.

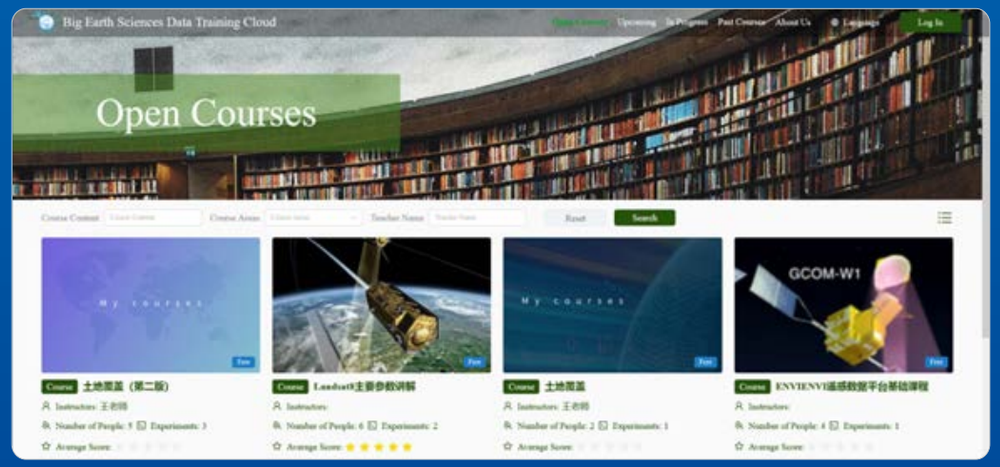
Description of the social and economic value of the case, reflecting inclusiveness (approx. 300 characters)*: Since its 2023 launch, ILIA has driven global impact with its cyberspace-based methodology. Its three-dimensional framework, encompassing enabling factors, research, development and adoption, and governance, guides investments, spurs AI ethics groups, and fosters training, setting new benchmarks for cooperation and inspiring worldwide initiatives in inclusive AI progress.

▲ Release of the Latin American IA Index, 2024 edition

Demonstrating Global Reach in Democratizing AI Knowledge

445 media pieces in 18 countries, 6,300+ social posts with 240,000 reactions, forums across the Americas, 45,891 website visits, and 4,256 downloads, showing how digital tech democratizes AI knowledge and global participation.

Big Earth Sciences Data Training Cloud Platform (BESTCloud): Technological Innovation for Democratizing Data



▲ The Courses offered by Big Earth Sciences Data Training Cloud Platform (BESTCloud)

Applying Institutions

Aerospace Information Research Institute, Chinese Academy of Sciences; National Earth Observation Data Center

Other Participating Institutions

Shandong Computer Science Center (National Supercomputing Center in Jinan), PIESAT Information Technology Co., Ltd. (PIESAT)

Countries and Regions Covered or Involved in the Implementation

23 countries and regions such as China, Laos, Bangladesh, Nepal, Sri Lanka and Thailand

The Aerospace Information Research Institute (AIR) of the Chinese Academy of Sciences(CAS), in collaboration with Chinese civilian and commercial partners, is committed to breaking down barriers to big data sharing and providing continuous data-driven solutions for monitoring and assessing the United Nations Sustainable Development Goals (SDGs).

Sharing Data to Pioneer Inclusive Global Access

Big Earth Sciences Data, with its multidimensional, high-precision monitoring and analytical capabilities, has become a key technological driver accelerating progress toward the United Nations SDGs. However, in the context of uneven global digital development, researchers and public users in many developing countries face technical challenges, including limited computing resources, outdated storage infrastructure, and constrained network bandwidth. These obstacles hinder the full realization of the inclusive value of Earth science big data and limit the development of localized high-caliber big data talent.

Data Empowerment as a Service: Democratizing Knowledge Production

▲ The Services offered by Big Earth Sciences Data Training Cloud Platform (BESTCloud)

To meet the global demand—particularly from developing countries—for equitable access to Earth science big data, AIR, together with Shandong Computer Science Center (National Supercomputing Center in Jinan) and PIESAT Information Technology Co., Ltd. (PIESAT), established the Big Earth Sciences Data Training Cloud Platform (BESTCloud) in 2017. By coordinating and integrating high-quality scientific and technological resources including satellite data, information products, analytical models, and processing tools. This platform can operate under moderate network conditions, and enable users worldwide to directly access, process, and analyze data through advanced information technologies such as cloud computing and AI. As of June 2025, BESTCloud offers: 100 trillion floating-point operations per second (TFLOPS) of computing power, 1 PB of storage capacity, training and experimental capabilities for over 100 product generation workflows, and system testing support for nine industrial sectors including natural resources, meteorology, water resources, emergency management, and power utilities.

A New Paradigm for Knowledge Production to Implement the UN 'Data Democracy' Vision

BESTCloud has established a 'data accessible yet nontransferable' sharing mechanism. By leveraging core technologies such as intelligent computing engines, microservice architecture, and edge computing nodes, it transforms data into cloud-based intelligent analysis services. This creates a "crowdsourcing-sharing" closed loop for knowledge production, enabling researchers in globally less developed regions to generate new knowledge without repeatedly acquiring raw data. By bridging gaps in data policy and technical capability, BESTCloud effectively mitigates data scarcity challenges and promotes inclusive, democratized access to Earth science information. It stands as a benchmark example of the United Nations' "Data Democracy" vision.

▲ The International Trainings offered by Big Earth Sciences Data Training Cloud Platform (BESTCloud)

Promoting Cross-Border Sharing of Premium Resources to Facilitate Talent Capabilities in Developing Countries

As of June 2025, the BESTCloud has integrated 160 datasets, 900,000 high-quality remote sensing images, 15 types of training sample libraries, and 70 data processing tools. It offers 15 courses, including urban environmental remote sensing, agricultural remote sensing principles and methods, marine environmental remote sensing, and disaster remote sensing monitoring. Researchers from over 60 countries use the BESTCloud to conduct research work. The platform has also provided on-site training for over 2,000 participants from 11 partner institutions, such as the National University of Laos, Jagannath University in Bangladesh, the International Centre for Integrated Mountain Development in Nepal, and the Arthur C. Clarke Institute for Modern Technologies in Sri Lanka. BESTCloud has supported the Asia-Oceania Group on Earth Observations (AOGEO) training workshops for 10 consecutive years, strengthening the application capabilities of Earth science data in areas such as climate adaptation, disaster resilience, and environmental sustainability for talents in developing countries.

Oxentia-A Knowledge-driven Technology Transfer Global Bridge

▲ Oxford Global Innovation Consulting, OXENTIA

Applying Institution

Oxentia

Countries and Regions Covered or Involved in the Implementation

8 countries and regions such as China, United Kingdom, Kenya, Brazil, and Malaysia

As Oxford Universitys flagship technology transfer institution, Oxentia employs its proprietary "Four-Stage Knowledge Transfer Model" (Potential Assessment → Business Modeling → Cross-Border Adaptation → Large-Scale Deployment) to systematically reduce transaction costs for high-barrier technologies in Global South countries. By leveraging Oxford's 28,000 patents and 350 disciplines of research potential, the institution transforms laboratory achievements into market-ready solutions for emerging economies, bridging academic insights with inclusive productivity. This mechanism not only addresses gaps in technological maturity and market path ambiguity, but also serves as a strategic nexus connecting cutting-edge academic breakthroughs with the development needs of emerging economies.

Deep institutional collaboration network established with multilateral institutions

Oxentias global capabilities are rooted in its deep institutional collaboration networks with multilateral agencies. Acting as an institutional representative of the University of Oxford, it manages major international cooperation programs such as the UK Global Challenges Research Fund (GCRF), leading the integration and targeted transformation of transnational research assets. In African agricultural technology, Oxentia partnered with Kenya's Agricultural Research Institute (KALRO) and local seed company Dryland Seeds to implement a phenotyping station. Training 52 grassroots breeders extended the drought tolerance period of a corn variety developed by Oxfords Department of Plant Science, benefiting 110,000 smallholder farmers across Kenya's Rift Valley region in 2023. In Latin American public health, Oxentia facilitated the deployment of portable malaria AI diagnostic devices from Oxfords Nuffield Laboratory in the Amazon Basin. Collaborating with Brazil's Oswaldo Cruz Foundation, they enhanced equipment's heat and humidity resistance through community medical networks, reducing diagnosis time in remote communities from 14 days to 2 hours. Its flagship project the "Southern Hemisphere Inclusive Innovation Accelerator" has incubated 89 startups, including Pakistan-based BioLoom, which utilizes patents from Oxfords Textile Engineering College to transform rice straw into low-cost medical dressings certified by WHO for emergency procurement.

▲ Oxentias Innovation Technology Acceleration Conference

Three-layer restructuring of technology transfer paradigms

Oxentias innovation stems from three paradigm reconstructions in technology transfer. At its core is the FUTURE™ Value Assessment Matrix, integrating 47 indicators including technical feasibility, market gaps, and contributions to UN Sustainable Development Goals (SDGs) (e.g., India project calculation: $1 in technology investment reduces 12kg of carbon emissions), ensuring project selection balances commercial viability with ethical considerations. In collaboration tools, the company developed the Virtuoso® cross-border collaboration platform enabling

real-time technical adjustments across time zones. For instance, in Colombias coffee dregs recycling project, British chemists and Colombian producers remotely optimized bio-extraction parameters, reducing process energy consumption by 40%. The most fundamental innovation lies in funding mechanisms: Oxentia established the worlds first SDG Conversion Bond, using social benefit indicators (e.g., clean water coverage rate) as return benchmarks to attract investments from European Impact Funds. This mechanism was adopted by the United Nations Development Programme (UNDP) as a financing template for public research commercialization, showcasing institutional design capabilities that leverage academic capital to drive social transformation.

▲ Oxentia conducts global innovative technology advisory cooperation

How technology transfer is reshaping the development trajectory of marginalized communities

The companys technology transfer initiatives have reshaped development trajectories for marginalized communities. Kenyan farmer Ngajele Kimanzi achieved a record 4.2 tons per hectare yield through planting Oxford-NK63 drought-resistant corn, channeling surplus income into constructing a village rainwater collection well, benefiting 80 households with improved water access. In Brazil's Amapá state, indigenous nurse Maria Sosa implemented a handheld AI malaria diagnostic device that eliminated tribal malaria deaths within a year, with her case report being included in the Oxford Tropical Disease Atlas database. A more systematic example is Oxentia's "Digital Indigenous Skills Program" in Malaysia's Borneo: Using low-code programming tools from the university's computer science department, 412 indigenous youths developed a forest fire risk monitoring app. Trainee Azlan Sanis solution was adopted by local authorities to monitor 37,000 hectares of rainforest, earning him a technical director position at Yapi Technologies—— This transformation from "Forest Guardian" to "Digital Protector" vividly illustrates how knowledge flow unlocks human potential.

▲ Oxentia online consultation and training services

Keep in Touch Safety Assistant: Application of Personnel Safety Management and Control Technology Based on AI-Driven Multi-Source Data Fusion and Risk Prediction

▲ The security risks faced by Chinese citizens and enterprises overseas have become increasingly severe. A protection system should be built through multi-source data fusion and AI technology.

Applying Institutions

China Unicom Global Limited, China Unicom (Hong Kong) Innovation Research Institute Limited

Countries and Regions Covered or Involved in the Implementation

55 countries and regions such as China, the Philippines, Thailand, Cambodia, and Singapore

Against the backdrop of globalized operations and the expansion of overseas businesses, the security risks faced by expatriate employees of multinational enterprises have become increasingly complex. In this context, the Keep in Touch intelligent safety management platform, leveraging multi-source data fusion and AI technologies, establishes a full-process protection framework covering "pre-event early warning, in-event intervention, and post-event rescue." It has emerged as a core solution for multinational enterprises to safeguard their overseas personnel.

Technical Architecture and Core Modules: Building the Cornerstone of Intelligent Security Protection

The intelligent security management and control platform integrates GPS, Beidou satellite positioning, and cellular network MDT fingerprint databases through the combination of multi-source data fusion positioning technology, achieving meter-level precision positioning. It can effectively track personnel positions even in signal blind areas such as high-rise dense areas or remote regions.

The platform innovatively features an intelligent risk prediction engine that incorporates over 70 dynamic risk factors (e.g., political stability, natural disaster probability, and public security incident frequency). Supported by a million-level geographic grid database and machine learning models, it generates global risk heatmaps updated every minute at a 100m × 100m resolution, enabling enterprises to visually assess environmental risk levels.

For risk intervention, the system employs a dual-engine mechanism of “trajectory prediction + geofencing” to pre-assess personnel movement paths. Once an individual approaches a high-risk area, the system automatically triggers an alert up to 30 minutes in advance, achieving proactive prevention.

Additionally, a global emergency response network has been established, creating a three-tier linkage mechanism among enterprise management, security firms, and consulates. By integrating positioning data with rescue resources, the platform has formed a “golden 15-minute” emergency response framework that ensures rapid incident handling.

▲ Through multi-source data fusion and AI technology, a full-process protection system covering "pre-event early warning, in-event intervention, and post-event rescue" is built.

Pain Point Resolution and Application Innovation: Reshaping the Paradigm of Overseas Security Management

Guided by the actual needs of expatriate employees in multinational enterprises, the intelligent security management and control platform proposes innovative solutions to three major pain points in overseas security management.

Firstly, regarding the opacity of global environmental security information, the platform addresses the issue of delayed awareness of global regional security situations through real-time risk heatmaps and dynamic early warnings. It optimizes personnel dispatch route planning and fills gaps in traditional management. On the employee side, visualized destination risk queries allow users to avoid entering high-risk areas due to information shortages.

Secondly, in terms of insufficient efficiency in personnel management, platform adopts real-time trajectory tracking to resolve information asymmetry and supervision delays, enabling minute-level detection of abnormal stays or loss of contact. By replacing traditional manual patrol models, it uses algorithm-based automatic alerts, improving emergency response efficiency by over 80% and overcoming the time limitations of conventional methods.

Finally, in terms of emergency assistance and rescue mechanisms, the platform introduces a “one-click SOS” function, creating a direct communication channel between employees, enterprises, and embassies/consulates, thus resolving the inefficiency of traditional help-seeking methods. With accurate positioning and a three-level response network, rescue information transmission time has been reduced from hours to minutes, significantly improving survival rates in extreme situations.

Value Radiation and Industry Impact: Driving the Digital Upgrade of Security Management

The implementation and application of the intelligent security management and control platform have significantly reduced the security risks faced by expatriate employees of multinational enterprises. Across multiple countries, the incidence of security incidents involving overseas workers has markedly declined, effectively protecting lives and health. Meanwhile, the Guidelines for Overseas Security Management of Multinational Enterprises promoted by the platform has gradually become an important reference for the industry to respond to non-traditional security threats, fostering the standardization and institutionalization of global corporate safety governance.

In terms of cost optimization and risk control, the intelligent early warning system has reduced insurance claim rates by 29%, saving substantial operational costs for multinational enterprises each year. Through proactive risk mitigation, it also reduces project delays and evacuation-related losses. On the technological innovation front, the platform's multi-source positioning technology has been granted patents, achieving internationally leading accuracy in complex terrain environments. By establishing data-sharing mechanisms with International SOS and local security agencies, it promotes a collaborative global safety governance ecosystem among enterprises, institutions, and governments, supporting the secure operation of projects along the Belt and Road Initiative.

Ocean Tomo Reconstructs the "Smart Capital Bank" of the Global Patent Market

▲ OT system builds equity value of knowledge capital

Applying Institution

Ocean Tomo

Countries and Regions Covered or Involved in the Implementation

China, United States, Germany, Japan, South Korea, and Singapore

Ocean Tomo was founded in Chicago, USA in 2003. It pioneered the "Intellectual Capital Merchant Bank®" concept, addressing value gaps in the global intellectual property market by facilitating cross-border circulation of patent assets, thereby revolutionizing traditional IP service models. With patent value discovery as its core mission, the institution established the worlds first multi-auction patent auction system and OTBA (Ocean Tomo Bid-Ask™) online bidding platform. This transformed complex intangible assets into tradable standardized trading instruments, creating an integrated service framework combining market bidding, financial instruments, and legal risk control. This mechanism not only resolved the industry's long-standing ambiguity in patent valuation but also opened channels for high-value patents from Europe and America to flow into Asian innovation markets. It enabled cross-border revitalization of Silicon Valley algorithm patents and German industrial IoT technologies through Shenzhen's hardware factories or Seoul's display laboratories.

The international collaboration network demonstrates the hub value driving cross-border technology circulation

The platform uses the OTBA online bidding system as its engine to enable 24/7 seamless transactions of cross-border patent assets. A typical case is the 2017 global auction of HP's thousand patents: 1,070 patents covering 12 technical fields were divided into 45 standardized items. Through collaborative operations between Chinese and American teams (partnering with China's Xinzhengxin Group), buyers from 17 countries participated in bidding. This ultimately led to the acquisition of a printing technology package by South Korea's Samsung, microfluidic patents by Japans Toshiba, while Chinese buyers secured mobile communication patent packages, achieving the first closed-loop of "U.S. R&D-Asian industrialization". To cater to the preferences of East Asian enterprises, Ocean Tomo developed a "Patent Portfolio Diagnostic Tool" to generate compatibility reports for technology acquisition needs of companies like Huawei and Panasonic, reducing risks in cross-border patent package integration. Simultaneously, in collaboration with the Singapore Intellectual Property Office, they developed the "Asian Patent Liquidity Index", which for the first time incorporated Southeast Asia's technology conversion rate into global valuation models. This collaborative approach based on bidirectional rule adaptation has enabled the platform to facilitate over $10 billion in cross-border transactions across 142 sub-sectors including semiconductors and biomedicine.

▲ Selected activities

Three-level restructuring of the intellectual property financialization paradigm

▲ Randy Radar, former chief judge of the U.S. Federal Court of Appeals, spoke at the International Intellectual Property Market Innovation Forum

Ocean Tomo has demonstrated innovative capabilities in value discovery and risk management. Its pioneering "Dynamic Bidding Funnel" model predicts patent liquidity by analyzing 47 parameters including citation rates, litigation risks, and market coverage (for example, predicting that Nortel Networks patent auction would reach 22 times its book value). In transaction infrastructure, the OTBA platform utilizes blockchain evidence technology to enable cross-border transfer of patent ownership within 10 minutes—over 90% faster than traditional processes—with enhanced data transparency leading to the worlds first stock index based on patent valuation——Ocean Tomo 300®, which was included in NASDAQ's tech sector benchmark. The most revolutionary innovation is its risk hedging tool: the "Patent Infringement Insurance Trust Plan," allowing companies to secure financing with patent portfolios as collateral while covering potential litigation costs. This product has helped Southeast Asian chip foundries avoid over $320 million in infringement claims. This design of converting legal risks into financial products was hailed by The Economist as a "milestone in the capitalization of intangible assets."

Let the patent resources once monopolized by giants benefit the innovation ecology periphery

▲ Ocean Tomo President and CEO James E. Malackowski was interviewed by China Intellectual Property News and Oriental Net

Seoul-based startup Vuno secured a US$180,000 patent for an AI diagnostic algorithm through OTBA. After localization modifications, it developed lung cancer screening software that now serves 42 primary clinics in South Korea, reducing early diagnosis costs by 67% for patients in remote areas. In China, Dongguan-based headphone OEM Aosi Electronics previously paid 12% of annual revenue in patent licensing fees to Europe and the US. Later, through a "reverse licensing" model on the platform, it acquired an acoustic noise reduction patent package, not only saving tens of millions in licensing costs but also transitioning into a private-label exporter. The most enlightening example lies in empowering individual inventors: American retired engineer Ronald Hartman listed his energy storage battery patent on OTBA. Through professional division and global bidding by the platform, it was ultimately jointly purchased by six Chinese companies including CALB and CATL. The elderly inventor's share became sufficient to fund his grandchildren's Stanford education.

EHang Pilotless Passenger-Carrying eVTOL

▲ EHang Leading the Global AAM Revolution

Applying Institution

Ehang Intelligent Equipment Co.,Ltd.

Countries and Regions Covered or Involved in the Implementation

21 countries and regions such as China, Austria, Brazil, Belgium, and Canada

EHang takes the EH216-S and other pilotless aircrafts as its "Sky Key", pioneering a new era for eVTOLs as the first in the world to obtain three airworthiness certificates from the Civil Aviation Administration of China (CAAC). Relying on three core technologies—autonomous flight, full-redundancy safety, and intelligent clustering—it builds an aerial network covering transportation, sightseeing, logistics, and medical services. In 2025, the world's first Operational Certificate for pilotless human-carrying aircraft was issued, marking the official arrival of the era of commercial advanced air mobility (AAM).

The world's leading pilotless human-carrying aircraft

As a pioneer in the global Advanced Air Mobility (AAM) sector, EHang has provided pilotless aircraft products and integrated low-altitude economy solutions to partners in multiple countries and regions. Its application scenarios cover areas such as passenger transportation, logistics and transportation, smart city management, and aerial media.

The company is not only the world's first listed urban air mobility enterprise, but also the first manufacturer to achieve commercial delivery of pilotless passenger-carrying aircraft. Its core product, the EH216-S, has become the world's first passenger-grade eVTOL to obtain the "Three Airworthiness Certificates" from the Civil Aviation Administration of China (CAAC), establishing a benchmark for the industry's development.

▲ pilotless human-carrying aircraft

Relying on its independently developed command and dispatch platform and advanced pilotless flight technology, EHang has achieved global development. Up to now, its aircraft have accumulated flight operations in 21 countries, including those in Europe, the Middle East, and Southeast Asia, forming replicable commercial operation experience. This achievement not only demonstrates the technological strength of "Chinese Intelligent Manufacturing" in the emerging aviation field, but also promotes the internationalization of relevant standards and norms.

▲ Global Flight Footprints

EH216-S – The Future Urban "Air Taxi"

Against the backdrop of traditional ground transportation facing congestion and environmental pressures, EHang extends urban transportation from the one-dimensional ground to the three-dimensional air via its EH216-S pilotless passenger-carrying aircraft. Its implementation path follows a complete system of "hardware + software + take-off and landing platforms + operation services":At the hardware level, the EH216-S is equipped with a fully redundant flight control and power system, enhancing safety redundancy.At the software level, it relies on intelligent cluster dispatching and automatic route planning to achieve true autonomous flight. At the infrastructure level, it has developed supporting multi-functional take-off and landing platforms with partners that are compatible with urban transportation hubs.In terms of service model, it explores the operation of "Air Taxis" to provide the public with instant and shared air travel experiences.

The world's first commercially operable pilotless human-carrying aircraft

In 2025, the airline companies operating EHang's EH216-S officially obtained the first batch of national Operational Certificates (OC) for civil autonomous passenger aircraft issued by the Civil Aviation Administration of China (CAAC). This milestone marks that low-altitude passenger services and future advanced air mobility (AAM) can officially launch their commercialization process and gradually enter the stage of popularization among mass consumers.

EHang has joined hands with a number of overseas partners to deploy scenario implementation

▲ UAM Operation Centers

and build UAM operation centers in countries such as Spain, Japan, etc. It continues to advance the construction of commercial operation systems and model commercial application scenarios, accelerating the global commercial operation process of autonomous passenger-carrying aircraft.

Jovia Program——Empowering Young Women to Enhance Their Self-worth through Digitalization

▲ Happy young women at Apps and girls

▲ Girls and young women in the Jovia program, attending advanced IT training in Web development, graphics design, digital marketing, online safety

Applying Institution

Apps and Girls

Other Participating Institution

YAS Tanzania

Countries and Regions Covered or Involved in the Implementation

Tanzania, Kenya, and DRC

Jovia Program empowers young women with digital & entrepreneurial skills to thrive in the digital economy.

Advanced IT and Entrepreneurship Training

The Jovia Program by Apps and Girls empowers underprivileged girls with advanced IT, entrepreneurship, and mentorship. Through international mentors, global platforms, and a digital incubation model, it connects local talent to global opportunities while ensuring inclusiveness and sustainability.

▲ Trainers supporting girls and young women during the training.

▲ Out of school school girls and young women in Mvomero-Morogoro region taking training in the Jovia program

An Integrated Model of Entrepreneurship for Young Women

Jovia applies a hybrid innovation model that combins digital and in-person learning, mentorship, and incubation. Participants gain advanced IT, entrepreneurship, and leadership skills, supported by the Codegalaxy platform for learning, mentorship matching, and startup incubation, enabling formal employment, startup creation, and socio-economic empowerment.

▲ Young women at Jovia program learning

▲ Girls participating in Mentorship sessions at Jovia program

Driving Social and Economic Transformation through Inclusive Digital Training

Jovia has equipped 700 underprivileged young women with digital and entrepreneurial skills, enabling them to secure formal employment, create startups, and re-enroll in education, thus fostering economic growth and social transformation.

▲ Trainee attending trainings with her child in mvomero-Morogro region (rural)

▲ Our CEO after receiving the WSIS PRIZE under category E0employment with fellow winners of the WSIS Prizes in Geneva

▲ WSIS PRIZE and certificate for the overall winner - Apps and girls also known as Computer applications for girls Foundation.

Jovia has been awarded the 2023 WSIS Prize for E-Employment, the 2021 ICT Award for Best ICT Incubator, and the 2019 Social Inclusion Award by Women in Tech, France.

SWAPPITO: Building the Middle Easts first “Patent NFT” cross-border collaboration ecosystem

▲ Patent NFT

Applying Institution

SWAPPITO LLC, UAE

Countries and Regions Covered or Involved in the Implementation

China, UAE, Saudi Arabia, Singapore, Germany, India

The Middle East has long faced challenges such as a domestic patent conversion rate below 12% and difficulties in accessing high-value international technologies. SWAPPITO pioneered the "Patent NFT Sharing Platform", which integrates blockchain smart contracts with patent assets, enabling fragmented patents in energy storage, seawater desalination, and other fields accumulated in European and American laboratories to be opened to Middle Eastern enterprises. The platform, with the Dubai International Financial Centre as its hub, connects the China Greater Bay Area with Saudi NEOM New City, establishing a direct bridge for technology supply and demand in emerging markets.

Multilateral Collaborative Network Restructuring Technology Trade Rules

SWAPPITO has established a three-dimensional international collaboration system. First, it integrated Eastern and Western patent pools, attracting 5,200 patents such as Siemen's Industry 4.0 patent package from Germany and CATL's energy storage technology to the blockchain, and through strategic investment of $230 million by Saudi Arabia's sovereign wealth fund PIF, established a "Green Technology Special Pool". Second, the cross-border sandbox mechanism collaborated with Singapore's Monetary Authority to set up a "Patent NFT Sandbox Pilot Zone", allowing Abu Dhabi Petroleum Company to obtain China's photovoltaic hydrogen production patent through a time-sharing rental model, reducing the single-use cost by 87%. Third, the judicial guarantee closed loop relied on the Dubai International Financial Court's blockchain evidence storage system to achieve cross-border evidence collection and rights protection. For example, when Sany Heavy Industry's intelligent welding algorithm patent was infringed by an Indian company, cross-border evidence collection was completed within 7 days and compensation of $4.6 million was obtained. The platform has facilitated 142 cross-border licenses in its first 18 months of operation, with a transaction volume exceeding $480 million, demonstrating the key role of institutional innovation in technology circulation.

▲ Jointly building a blockchain IP certification system

Dual-layer technical architecture catalyzes the sharing economy paradigm

The two-tier technical architecture of the platform gives birth to the sharing economy paradigm:

Dynamic rights confirmation of smart contracts: Patents are divided into standardized NFT units (each unit =1% ownership), and real-time floating price is generated through AI valuation model. Saudi desalination company only needs to pay $170,000 (original license fee of 1%) to obtain the two-year Middle East usage right of German IDE technology;

▲ Dynamic rights confirmation of smart contracts

Dual-layer token incentives: Issuing Patent Usage Tokens (PUT) and Governance Tokens (SGT), after China Wanhua Chemical contributed the “Biodegradable Plastic Patent” to the platform, it received 380,000 PUTs, which can directly offset costs when leasing catalyst technology from Saudi Basic Industries Corporation (SABIC). This mechanism was awarded the WIPO “2025 Global Technology Transfer Innovation Award”.

The democratization of technology reshapes the regional industrial ecology

In Dubais Jebel Ali Free Trade Zone, Hassan Al-Maktoum, a small-scale aquaculture farmer, adopted an NFT-based leasing model to access IDEs high-efficiency membrane technology. This tripled his freshwater production capacity while reducing costs to $0.26 per cubic meter. By employing 12 local youths to operate smart aquaculture tanks, his monthly income soared from 2,400 to 9,500 dirhams. “Where patents once belonged to multinational giants, we now share technological dividends,” he remarked standing before the newly completed aquaculture workshop. The model has benefited 1,200 SMEs across the Middle East, nurturing 27 local “patent-sharing innovators” in renewable energy and water-saving agriculture sectors.

▲ Online platform model display

Global Internet of Things (IoT) Planting Data Model for Fruits and Vegetables - Illuminating Green Urban Life Worldwide

▲ New Zealand national brand enterprises visited, inspected and exchanged at the Cheerbio Biological R & D center.

Applying Institution

Cheerbio biotechnology(Nantong)Co.,Ltd.

Other Participating Institution

The UNESCO Life Ethics Education Promotion Institution

Countries and Regions Covered or Involved in the Implementation

Australia, Singapore, Japan, Canada, Qatar, and South Korea

In today's era of accelerated urbanization, urban agriculture serves as a new bridge connecting cities and nature, gradually reshaping people's dietary structures and lifestyles.Cheerbiotechnology (Nantong) Co.,Ltd (hereinafter referred to as "Cheerbio Biotechnology") pioneers the "Big Backend–Small Frontend" IoT planting model, which simplifies complex planting procedures into "one-click operations." This model makes healthy and fresh fruits and vegetables easily accessible, provides digital planting solutions for traditional plant factories, and effectively addresses the industry challenges of "who plants" and "how to plant well."

Cross-border Green Cooperation Through Distributed Plant Factories

Cheerbio Biotechnology's internationalization is both steady and impactful. Its IoT-based planting technology spans the entire cultivation chain and has successfully expanded across six continents, taking root in countries such as Australia and Japan. By exporting advanced planting equipment and technology, Aipei works closely with local partners to jointly promote the development of global urban agriculture. In Sydney, Australia, its vertical farming project—located inside an urban exhibition and office complex—uses IoT technology to efficiently grow leafy greens and hydroponic strawberries, providing urban professionals with fresh, pollution-free produce. In Tokyo, Japan, the company's products are entering major electronics retail chains, integrating plant factories into everyday home life and opening a new chapter in household cultivation.

▲ Product testing and planting scenarios of AEON Group in Japan

▲ The 25th China International Flower and Horticultural Exhibition Aipei Biotech booth attracted international partners from all over the world to visit

A New IoT Planting Model Leading a Green Farming Revolution

The core innovation of Cheerbio Biotechnology lies in its "big backend small frontend" IoT planting model. Supported by a global data model for artificial-light cultivation of fruits and vegetables, the company's backend laboratory provides precise, data-driven planting solutions for small, distributed urban plant factories. This approach effectively solves the problem of "who plants" and "how to plant well." In addition, PlantBlock, as a terminal carrier, has constructed a global fruit and vegetable IoT planting data model. Through modular design, layered independent liquid supply, and multi-level planting pipelines, complex agricultural processes are simplified into "one-click" operations. The PlantMaster App enables users to remotely customize vegetable and flower production, offering intelligent guidance throughout the entire cycle—from seed selection to harvest—without requiring any professional expertise. Meanwhile, the headquarters' global planting database enables real-time synchronization and optimization of local planting schemes, continuously driving innovation in the global agricultural ecosystem.

▲ Schematic diagram of IoT planting concept

Reshaping Global Agricultural Ecology Through Technology: Green Planting for All

Cheerbio Biotechnology has developed a lightweight offline version of the PlantMaster APP tailored for developing markets, compatible with over 85% of entry-level Android devices in regions such as Southeast Asia and Africa. This enables more low-income groups to enjoy the convenience of technology-driven planting. In schools located in impoverished districts of Manila, Philippines, Cheerbio's AR-based planting education system allows students to scan seed packages to trigger 3D holographic growth simulations—tripling planting success rates during

pilot programs. Even more remarkable, Cheerbio's collaboration with the United Nations High Commissioner for Refugees (UNHCR) delivers containerized planting modules to war-torn regions, producing up to 50 kilograms of vegetables per container per day, effectively alleviating food shortages and achieving both emergency supply and self-sufficiency. Looking ahead, Cheerbio will continue to deepen technological innovation and global market expansion—developing cross-generational adaptive systems, integrating with IndoorFarmX to create a "zero-distance farming" ecosystem, and promoting planting from family kitchens to community hubs, from supermarket supply chains to research institutions. Through these efforts, Cheerbio is reshaping urban living and leading humanity toward a new era of self-sufficient, sustainable life.

▲ A future farm

▲ A real-life urban family scene

▲ Urban agriculture enthusiasts from all over the country gather at the cheerbio Biological Big Data R&D Laboratory for training

H2I activates the "Nordic Precision Medicine Algorithm" in China's clinical engine

▲ H2I builds the future of healthcare

Applying Institution

Health Innovation Hub

Countries and Regions Covered or Involved in the Implementation

China, Denmark, Singapore, Japan

The H2I Medical AI Cross-border Collaboration Platform, positioned as a "Clinical Translation Accelerator", addresses the triple adaptation challenges of ethical compliance, clinical application scenarios, and healthcare payment systems for Nordic medical AI entering East Asian markets. A notable example is CerebTech, a Danish AI company specializing in stroke diagnosis. By leveraging the H2I platform, CerebTech retrained its algorithms using 10,000 CT imaging data sets from East Asian populations and established a China-Europe joint ethics review process. This breakthrough increased algorithm sensitivity from 82% to 95%, securing approval through the National Medical Products Administration's Innovative Medical Device pathway. This case not only demonstrates the transformative power of digital technology in healthcare but also highlights the pivotal role of cross-border digital collaboration in advancing the global medical industry's digital transformation.

Establishing an open, mutually beneficial market ecosystem for venture capital cooperation

The H2I platform promotes the orderly flow and efficient allocation of medical innovation elements through a well-established venture capital cooperation mechanism and a "three-tier clinical collaboration system". The Precision Medicine Database collaborated with the National University Hospital of Singapore to establish the "Pan-Asian Multimodal Database", integrating 220,000 metabolic data points, which helped Danish early-screening company Novige optimize pancreatic cancer models and increase detection rates by 31% at the Sun Yat-sen Cancer Center. The Smart Hospital Workshop established the China-Denmark Clinical Compatibility Center in Wuhan Optics Valley, matching Aarhus Universitys intelligent infusion system with Chinas medical insurance regulations, resulting in a 76% reduction in infusion-related accidents at grassroots hospitals. The Payment Penetration Initiative developed a DRG disease mapping model for global dressing giant Coloplast, enabling wound management products to be included in Shanghai Tenth Peoples Hospitals medical insurance catalog with an annual procurement volume increase of 200%. These innovative cooperation mechanisms have effectively facilitated cross-border flows of production factors such as technology, capital, and talent, driving deeper integration of the medical markets in China, Europe, and Japan.

▲ Promoting the interactive flow of elements of medical innovation

The concept of "technology for good" leads to inclusive digital development

The H2I platform adheres to the technology-for-good philosophy, enhances the inclusiveness of the digital economy, and ensures that the outcomes of digital transformation benefit a broader population. The "Medical Localization Intelligent Toolkit" developed by the platform includes: an ethics-aligned engine that automatically compares EU Article 9 with Chinas "Medical AI Ethics Review Guidelines", improving compliance efficiency tenfold; a clinical context

translator that breaks down Ruijin Hospitals "Diabetes Management" requirements into 17 quantifiable nodes, directly connecting to the University of Copenhagens dynamic prediction algorithm; and a value-based medical evaluation instrument co-developed with Ping An Medical Insurance Technology to establish a QALY cost model, facilitating the approval of Denmarks orthopedic robot ExoWalk through Beijings medical insurance negotiations. These tools enhance the efficiency of cross-border medical cooperation while ensuring ethical compliance in technology applications.

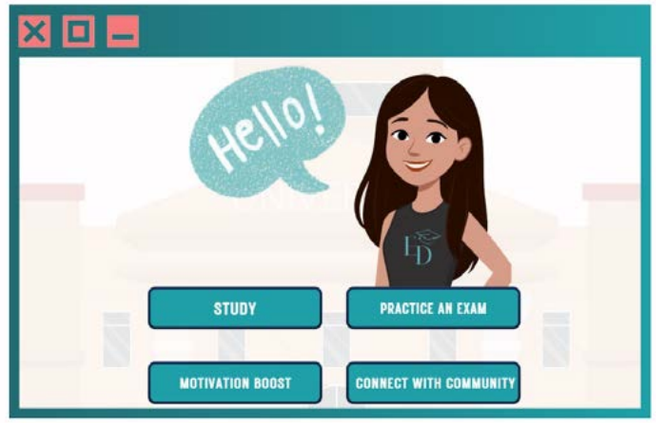
▲ Typical cases of promoting health public welfare projects in Africa

Deep market integration to achieve efficient allocation of factors of production

This case highlights the social and economic value of H2I platform through its inclusive nature (approximately 300 words): By implementing deep market integration mechanisms, H2I enables efficient allocation of global medical resources, creating significant inclusive benefits in grassroots healthcare. At Hong'an County Hospital in Hubei Province, the Danish TelePath cloud pathology platform connected with Wuhan Union Hospital experts via 5G slicing technology, boosting the accuracy of initial breast cancer diagnoses from 63% to 92%. At Shanghai Elderly Care Center, the Danish anti-fall system upgraded by H2I reduced costs to 1,580 yuan per square meter, decreased elderly fall injuries by 89%. At the Japan Collaborative Node, Osaka University adopted H2Is Wuhan Tongji Liver Cancer Early Screening Model to develop ultrasound AI-assisted tools tailored for East Asian populations. These success stories demonstrate that establishing open and mutually beneficial cooperation mechanisms can optimize the integration of medical technologies, clinical expertise, and market resources, driving global healthcare toward greater inclusivity, efficiency, and sustainability.

▲ Innovation International Report 2024-2205

Aurora Method: AI-Powered Learning and Emotional Support for Inclusive Education



▲ Aurora Method avatar welcoming students and offering interactive options such as studying, exam practice, motivation, and community support.

Applying Institution

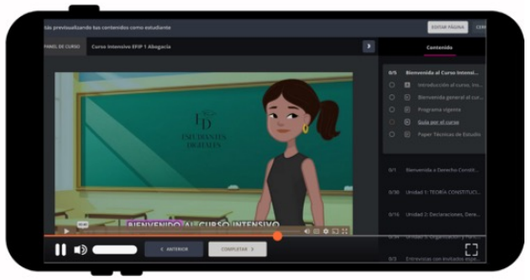
Estudiantes Digitales

Countries and Regions Covered or Involved in the Implementation

19 countries and regions such as Argentina, Chile, and Peru

Inclusive AI-powered learning method reducing educational inequality in Latin America.

Aurora Method: AI-Powered Learning and Emotional Support for Inclusive Education



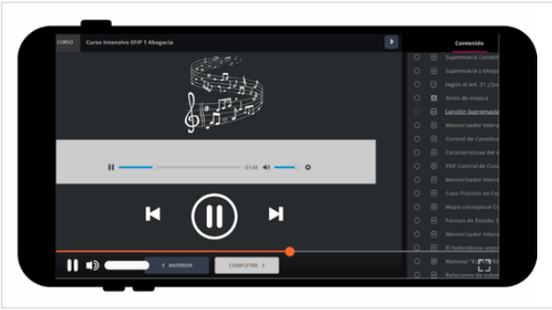
▲ AI-powered avatar introducing students to the Aurora Method.

Estudiantes Digitales is a Latin American edtech company and the first university subscription platform across all of Latin America. We democratize access to high-quality professional education through technology, emotional support, and community, making studying less isolating and more sustainable. Currently, we have a presence across 19 Spanish-speaking countries, with Argentina as the primary market, and significant activity in Chile and Peru. We serve university students and early-career professionals who face economic, geographic, or emotional barriers to learning. The proprietary Aurora Method provides synchronous and asynchronous courses enhanced by AI tools, music-based learning, visual organizers, and tutor-led evaluations, improving engagement, efficiency, and retention. Pilots began in March 2023, and by October 2023 thousands of students were already successfully testing the method. By 2025, Aurora became popularized and consolidated, integrating multiple advanced AI tools. The practice is designed for cross-border inclusion and long-term scalability.

Bridging the Digital Education Gap

The Aurora Method addresses the persistent digital education gap in Latin America by offering inclusive, AI-powered solutions. With a strong foundation in Argentina and a growing presence in Chile, Peru, and 16 additional Spanish-speaking countries, it already benefits thousands of students. Its broad regional reach positions Aurora as a replicable and scalable practice for inclusive education globally, reducing isolation and expanding opportunity.

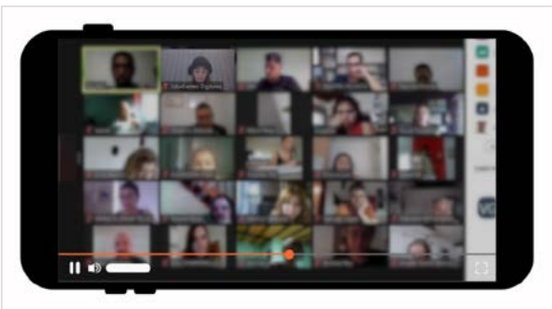
Implementation and Innovation



▲ AI-generated music capsule from the Aurora Method designed to help students memorize complex academic concepts.

Aurora integrates AI-generated avatars, adaptive micro-videos, visual maps, quizzes, and music-based learning capsules to simplify complex professional content (e.g., law, business, and medicine). A distinctive feature is Aurora's AI-powered oral practice: students can simulate exam or workplace scenarios, receive instant feedback on clarity, fluency, and accuracy, and build confidence independently. Content is delivered primarily on-demand, allowing learners to progress at their own pace, complemented by a limited number of live sessions. The model combines technological innovation with pedagogical empathy: students follow structured learning paths, receive reflective prompts, and have access to emotional support tools designed to reduce academic anxiety. This combination of self-paced learning, interactive AI, and community engagement makes Aurora both effective and accessible for diverse learners.

Social and Economic Value



▲ Live Aurora session with students from across Latin America, fostering a sense of community and inclusion.

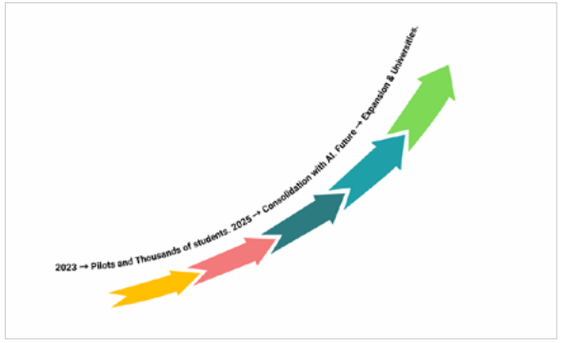
Aurora has demonstrated measurable academic and emotional benefits. Students report higher retention, reduced dropout anxiety, and greater confidence in professional exams. Economically, the platform enables learners, including many who work full-time or have limited resources, to access high-quality education at a low cost. Socially, Estudiantes Digitales builds a strong sense of belonging: more than 37,000 people have already been impacted by the Estudiantes Digitales community. The emotional well-being component is especially relevant in underserved regions where mental health support in education is scarce. The

model aligns with SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), and SDG 10 (Reduced Inequalities).

Between 2023 and 2025, Aurora was tested online with 2,983 students from Mendoza, Córdoba, and Buenos Aires (Argentina) through surveys, interviews, and expert analysis. Results were consistent: 98% passed their exam on the first attempt, 95% showed measurable improvements in confidence and performance, 89% reported they had not failed the exam they prepared for with Aurora, and 75% found the method more didactic and less tedious than traditional study. These outcomes, validated by psychologists and psychopedagogues, confirm Aurora's transformative impact on both academic success and emotional well-being.

Future Scaling and Achievements

Aurora aims to become a comprehensive university service across Latin America, strengthening its presence in all 19 Spanish-speaking countries. Future growth includes both vertical expansion into new professional disciplines and horizontal expansion into complementary student services. Long-term, Aurora seeks to reduce university dropout rates by providing scalable, supportive, and adaptive digital learning solutions. Partnerships with universities and educational institutions are also envisioned to integrate Aurora directly into formal higher education systems. Alongside these goals, Aurora will continue to enhance analytics for early detection of dropout risk and mental health needs, reinforcing shared digital prosperity and inclusive education globally.



▲ Symbolic illustration of Aurora's future growth and expansion across Latin America.

Branchly Innovation
— The "Transoceanic Catheter" for Tech Assets and Catalyst for Innovation Communities

▲ Branchly Innovation (Branches Flourishing)

Applying Institution

Branchly Innovation

Countries and Regions Covered or Involved in the Implementation

China, the United States, Singapore, Germany

In the context of accelerating global innovation collaboration, an increasing number of small and medium-sized innovative teams face practical challenges such as information asymmetry, resource dispersion, and high cooperation barriers in cross-border technology alignment. Branchly Innovation is committed to building a bridge for Sino-US technological cooperation by positioning itself as a "technology trust infrastructure provider". Through its "patent segmented sandbox" mechanism, Branchly enables US companies to retain core patents while opening partial improvement rights to Chinese enterprises, thereby ensuring technological security and promoting innovation implementation.

Global collaboration network, technology without borders

Branchly's innovative model extends beyond China-US collaborations, establishing a global ecosystem for technology transfer. For instance, in Stuttgart, Germany, Wooshin Automotive Moulds thermal deformation compensation algorithm was safely licensed to a Ningbo-based mold manufacturer in China after undergoing Branchly's "Risk Entropy" assessment, reducing production costs by 38%. Furthermore, through its partnership with Seattle's Fred Hutchinson Cancer Research Institute, Branchly launched the "China-US Clinical Sandbox," dramatically shortening the development cycle for targeted cancer drugs and accelerating the transition from lab achievements to clinical trials. This cross-border collaboration not only speeds up technology implementation but also creates a self-sustaining "technology feedback loop" — Clemson University in the US leveraged Branchly's database to access the Chinese Academy of Sciences' perovskite technology model, significantly enhancing precision in its photovoltaic research. Through these initiatives, Branchly has truly enabled global technology flow, optimization, and symbiotic development.

▲ Branchly Innovation technology capital acceleration service vision

From mechanism to technology, redefine technology transfer

Branchly's innovations are reflected in multiple dimensions: In mechanism design, the "patent segmented sandbox" breaks the traditional deadlock of "full authorization or complete blockade", making technology transfer more flexible and secure; in technology matching, the "demand folding engine" acts like a "technical translator", converting industrial demands into language scientists can understand with an accuracy rate as high as 92.3%; in risk control, its

"smart contract platform" dynamically assesses technology leakage risks to ensure every transaction is secure and controllable. Additionally, Branchly has established a global technology radar network that tracks real-time research developments from top North American universities and delivers updates to Chinese enterprises within 72 hours, enabling seamless alignment between technology supply and demand. These innovations not only resolve trust issues but also reshape the rules of international technology cooperation.

▲ Diversified cooperation to open up the chain of technological innovation

Let technology truly benefit industry and society

The model of Branchly brings multiple benefits: On the economic level, it facilitated US-China technology transactions worth $120 million in 2024, helping Chinese enterprises reduce R&D costs and accelerate product launches; on the social level, its clinical acceleration channel shortened the development cycle of cancer drugs by 40%, benefiting patients worldwide; in terms of industrial ecosystem, Branchly connects 300 Silicon Valley technology brokers, global university laboratories, and manufacturing enterprises, forming a virtuous cycle innovation network. More importantly, it enables small and medium-sized enterprises to access cutting-edge technologies, promoting "technological democratization" — For instance, a Chinese battery manufacturer obtained improved authorization from an American laboratory through Branchly, achieving technological upgrades within six months—a process that would traditionally take years. Branchly is not only a technology intermediary but also a builder of a global innovation community, enabling technology to truly flow and create greater value.

▲ Building a virtuous cycle innovation network

China Mobile's Smart Energy-Saving Solution: Unlocking the Green and Low-Carbon Future of Global Smart Homes through Digital Technology

▲ China Mobile's Smart Energy-Saving Solution

Applying Institution

China Mobile (Hangzhou) Information Technology Co., Ltd.

Other Participating Institutions

Hangzhou BroadLink Technology Co., Ltd., China Mobile Communications Group Guangdong Co., Ltd., China Mobile Communications Group Jiangsu Co., Ltd., China Mobile Communications Group Tianjin Co., Ltd., China Mobile Communications Group Beijing Co., Ltd., China Mobile Communications Group Hunan Co., Ltd., China Mobile Communications Group Gansu Co., Ltd.

Countries and Regions Covered or Involved in the Implementation

127 countries and regions such as China, the United Arab Emirates, Thailand, and the Philippines

With the continuous rise in global electricity demand, smart electricity consumption has become an indispensable path to improving efficiency. China Mobile Communications Corporation (CMCC) has developed an integrated solution featuring "interconnection of device data + AI strategy collaboration + cloud computing power support," providing "seamless, automated, and optimized" smart energy-saving services for households, hotels, commercial complexes, and public institutions. This solution has been implemented in China and across multiple countries worldwide, serving as a practical model for green transformation driven by the digital economy.

Developing Smart Energy-Saving Solutions to Promote Global Green and Low-Carbon Lifestyles

In recent years, CMCC has actively implemented national strategies and proactively fulfilled its social responsibilities. It has launched the "C^2 Three Energy Initiative" and proposed the new "Three Energy and Six Green" development model, striving to enhance its capacity to empower green development across all sectors of society. In the field of smart energy conservation, based on the "Cloud-Edge-Device" collaborative architecture, CMCC has built a whole-house smart platform. By integrating three core technologies: energy consumption monitoring, intelligent lighting adjustment, and AI-based temperature control algorithms, it has formed a "perception-analysis-regulation" closed loop. This project has gradually expanded from household scenarios to hotels, commercial entities, and public institutions.

In households, it has provided smart sockets, switches, and thermostats to more than six million homes across over fifty Chinese cities. In the hotel industry, the use of human detection and adaptive lighting systems has reduced daily energy consumption per room by 35 percent. In commercial sectors, CMCC has established multiple low-carbon demonstration zones in major cities such as Hangzhou, Beijing, Shenzhen, and Nanjing. Meanwhile, for public institutions, it has implemented energy-saving retrofits for air-conditioning and lighting systems in cultural centers, parking lots, schools, and airports. At present, the project has been deployed in 127 countries, including Dubai (UAE), Thailand, the Philippines, and Vietnam, serving more than twenty million households worldwide. It fully demonstrates the vast potential of smart energy-saving technologies in promoting sustainable, low-carbon living on a global scale.

▲ Intelligent lighting solutions exhibited in Dubai

Refined Energy Control Networks and AI Algorithms Optimizing Energy Efficiency

In terms of technological innovation, this project leverages technologies such as edge computing architecture and AI self-learning systems to build a refined energy-saving control network. Smart sockets enable millisecond-level monitoring, conducting real-time energy consumption analysis and providing intelligent recommendations for high-power devices like air conditioners and water heaters. This helps users achieve proactive energy conservation and issues alerts when high energy consumption or anomalies are detected,
resulting in an average annual electricity saving of 38.6 kilowatt-hours (kWh) per household. The lighting control system, integrated with 60GHz millimeter-wave radar, enables automatic adjustment of multiple scene modes based on illumination intensity and human presence—achieving the effect of lights turning on when someone enters and off when they leave—with an average energy-saving rate of 72%. For the temperature control system application, through

▲ Household Lighting Retrofit Solution

▲ Hotel Lighting Retrofit Solution

deep reinforcement learning algorithms and training on data from over 500,000 households, personalized temperature control models have been developed, achieving a temperature adjustment accuracy of ±0.5°C and a 25% reduction in energy consumption per household.

Together with its global partners, CMCC continuously enhances its technologies, products, and service systems. It has implemented over 100 smart real estate and hotel projects across the Middle East and Southeast Asia, while annual shipments of its energy-saving products exceed 5 million units in North America and Europe—promoting a global shift toward intelligent, energy-efficient living.

Large-Scale Implementation Delivers Remarkable Results, Accelerating the Global Adoption of Smart Energy Solutions

With large-scale deployment underway, CMCC has harnessed its “Connectivity + Computing Power + Capability” service ecosystem to effectively address the challenges of traditional energy management—such as lack of awareness, dispersed devices, and delayed response. To date, the project has provided professional services including precision monitoring, proactive adjustment, scenario linkage, and millisecond-level command execution for users across multiple sectors. It has achieved annual electricity savings of 3.12 billion kWh, equivalent to reducing 2.449 million metric tons of CO_2emissions. By 2026, the model is projected to help 10 million households worldwide achieve carbon reductions, saving more than 6 billion kWh annually. Through its global application and promotion, the project has not only lowered users’ energy costs but also fostered the integration of green living and digital transformation, offering a replicable model for advancing global sustainable development.

▲ Airport Green Lighting Retrofit Project

▲ Public Parking Lot Lighting Retrofit Demonstration Project

WPS AI Goes Global

Applying Institution

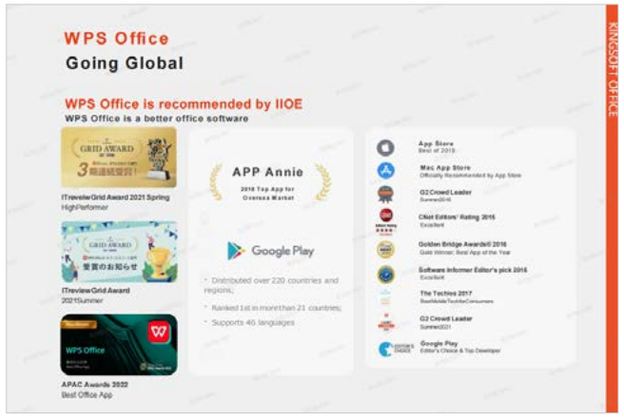
Kingsoft Office Software Corporation Limited

Countries and Regions Covered or Involved in the Implementation

Over 220 countries and regions such as China, Japan, Indonesia, Thailand, and Malaysia

Amid the sweeping tide of global digitalization, office software – a core driver of digital productivity – has long been dominated by international giants. Developing countries have faced a dual dual challenge: limited access to technology and high usage costs. Since 2005, WPS, a flagship brand under Kingsoft Office,has taken its first step toward internationalization by entering the Japanese market.. It has since expanded into Southeast Asia, the Middle East, Africa, and beyond, now serving users in over 220 countries and regions.

WPS Empowers the Global Office Ecosystem, Creating a New Model for Chinese Tech's Global Expansion



▲ International Awards of WPS Office

WPS's globalization journey has extended from Japan to Southeast Asia, and from the Middle East to Africa, reaching users around the world.. It now boasts over 600 million monthly active devices, with more than 200 million coming from overseas markets. In the ASEAN region, WPS has become a major force in the local office software market, with over 50 million monthly active devices. It not only serves individual users but also deeply integrates into local government and corporate operations: building an efficient document processing system for Thailand's Ministry of Justice, helping Malaysia's Ministry of Health optimize medical data management, and serving more than 200,000 enterprise clients. WPS has become a true catalyst for regional digital transformation.

In 2019, WPS collaborated with UNESCO to launch smart classroom projects in over 40 universities across 13 countries, integrating Chinese language learning with office software to form a multidimensional empowerment model that bridges technology, education, and culture. In 2021, WPS provided 10 million sets of office software to Indonesia's education system, combining digital tools with educational scenarios to advance digital education adoption across the country.

Today, WPS Office Mobile supports 46 languages, while the PC version supports 13 languages, adapting to the cultural and practical needs of users in different regions — truly realizing its vision of "empowering global users with efficient office experiences."

WPS AI: Combining Technological Innovation with Localization to Overcome Globaliazation Challenges

Kingsoft Office has seized the opportunity of AI-driven technological transformation, positioning WPS AI at the heart of its global strategy. By building a comprehensive product matrix that reaches over 220 countries and regions, the company provides efficient and inclusive office solutions, bringing Chinese technology to the global stage.

▲ A Brand-New Upgrade of WPS Office

With "AI + Cloud" as its technological core, WPS introduces smart features such as spell check and automatic presentation generation, turning complex office workflows into simple "one-click operations." Priced far lower than international competitors, WPS offers users a cost-effective and accessible alternative, significantly lowering barriers to AI-powered office tools—especially for users in developing countries—so that more people can benefit from technological progress.

Following a mobile-first strategy with gradual expansion to large-screen platforms, WPS first meets the needs of emerging market users through optimized mobile experiences before expanding to PC platforms. Within just a few years, this approach has driven rapid growth in PC monthly active users, offering a replicable model for global expansion.

In 2024, WPS launched its AI-powered international version, integrating leading global models such as ChatGPT and serving over 200 million overseas users. Through localized R&D, optimized operations, and AI-rights deployment, WPS has reduced customer acquisition costs, improved user growth efficiency, and strengthened its global foundation.

As a technology brand from China, WPS remains committed to the vision of "Technology for All." It will continue to deliver smarter, more efficient office solutions worldwide and help build a more connected, inclusive, and intelligent digital ecosystem.

▲ WPS Office: All-New Upgrade

CHN Energy Group E-commerce Intelligent Supply Chain Collaboration Platform: Digital Empowerment to Build a Global Win-Win Energy Ecosystem

▲ Homepage of CHN Energy Group E-commerce

Applying Institution

CHN Energy Group E-commerce Co., LTD.

国家能源集团 CHN ENERGY 电子商务有限公司 E-COMMERCE COMPANY

Countries and Regions Covered or Involved in the Implementation

33 countries and regions such as Australia, Indonesia, South Korea, and Japan

Leveraging the advantages of China Energy Investment Corporation's fully integrated industrial chain — encompassing mining, railway, power, grid, port, shipping, and chemical operations — CHN Energy Group E-commerce adheres to the concept of "platform-based development and digital operation." The company has developed the CHN Energy E-commerce Intelligent Supply Chain Collaboration Platform, focusing on coal, chemicals, and transportation. The platform builds a comprehensive digital trading system that enables efficient global allocation of energy resources, serving as a demonstration model for how the digital economy can empower the transformation of traditional industries.

All-Dimensional Construction and Scale Breakthrough of the International Energy Trading Ecosystem

In response to the needs of international energy trade, the CHN Energy Group E-commerce Platform has specially launched full-scenario services covering coal production, transportation, sales, storage, and utilization. By the end of 2024,more than 29,000 enterprises had registered on the platform, with over 4,500 active users and an average of 46,500 daily visits, spanning 33 countries and regions, including Australia, Indonesia, South Korea, and Japan.

The platform has facilitated cumulative spot transactions of 3.23 billion tons and a total transaction value exceeding RMB 1.1 trillion, achieving full digitalization of all coal and chemical trading within China Energy Investment Corporation — including 100% of coal sales and purchases, 100% of chemical exports, and over 100 million tons of shipping procurement.

Internationally, dedicated zones such as the Imported Coal Zone and Mongolian Coking Coal Zone involve partners from Indonesia, Australia, Russia, South Korea, and Mongolia, with cumulative transactions reaching 38.41 million tons. The platform's chemical exports now cover 28 countries, including Vietnam and Uzbekistan, with a total export volume of 1.69 million tons. Together, these initiatives form a globalized operational framework integrating a digital trading ecosystem, an intelligent data hub, and a cross-border collaboration network.

▲ Coal trading sector

Dual-Driven by Technological Innovation and Business Model

The platform has established a business data lake and business intelligence (BI) analytics system, integrating multi-source data from trading, logistics, and financial operations. With a daily data processing capacity of 2 terabytes, it achieves millisecond-level response to logistics dynamics and resolves anomalies within five minutes. Built on the unified cloud platform of China Energy Investment Corporation, it employs elastic computing resources, a microservice architecture, and containerized deployment to enable dynamic service scheduling and rapid DevOps-driven iteration.

In terms of its business model, the platform pioneers a “Big Data + Supply Chain Finance” architecture. Smart contracts ensure trusted data traceability throughout the transaction lifecycle, while big data algorithms dynamically match global supply and demand. Its “e-Factoring” and “e-Credit” services have provided over RMB 2 billion in financial support, easing liquidity pressure for SMEs. In logistics, the platform’s Multimodal Transport Digital Scheduling System integrates 597 vessels from 204 shipowners, and, through the BeiDou Navigation Satellite System, enables intelligent matching and tracking across road, rail, and maritime transport — establishing a modern, smart logistics ecosystem driven by digital collaboration.

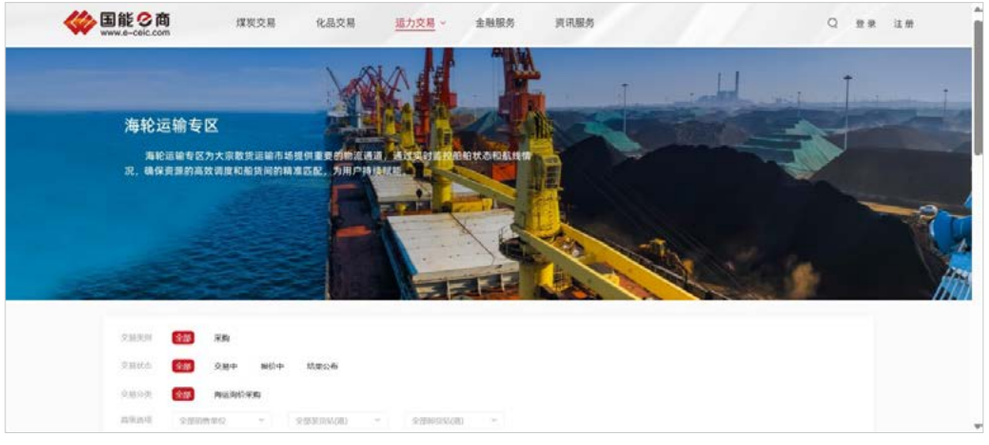
▲ Chemical trading sector

Win-Win Global Energy Ecosystem Led by Inclusive Value

Guided by the principle of inclusive growth, the CHN Energy Group E-commerce Platform provides standardized and intelligent cross-border trading services for global SMEs, breaking down geographical barriers and resource monopolies in traditional energy trade. It has enabled nearly 30,000 upstream and downstream enterprises in coal, chemical, and transportation industries to participate in global supply chains.

As of 2024, competitive bidding through the platform has generated an average coal sales premium of RMB 30.9 per ton, creating a total value increase of RMB 1.8 billion for platform merchants. End-to-end online settlement and payment have reduced document exchange by 60%, lowered cargo loss rates from 1.2% to 0.3%, and ensured 100% online execution of long-term coal contracts — improving coordination efficiency by 50%.

In logistics, the platform’s “Shipowner Database” and “e-Jiangtong” systems have standardized transportation practices and established a new coal logistics ecosystem along the Yangtze and Xijiang Rivers, helping small and medium-sized logistics enterprises reduce costs by 10%. From connecting western China’s coal producers with global buyers to supporting chemical companies in Southeast Asia sourcing raw materials from China, the CHN Energy E-commerce Platform drives a paradigm of digital empowerment, open collaboration, and mutual benefit, contributing to a fair, sustainable, and interconnected global energy community.



▲ Multi-logistic trading sector

04

Cybersecurity Maintenance

Maintaining Cybersecurity to Promote Orderly Development

Outstanding Case

International Cyber Capacity Building Program

▲ Participants of the ICCBP include senior leaders and newly appointed officials from national cybersecurity institutions. This enables a more secure digital ecosystem for local people, which in turn promotes economic growth and innovation.

Applying Institution

Kaspersky

Other Participating Institutions

Indonesia National Cyber and Crypto Agency, Bogazici University Turkey, Nigeria National Information Technology Development Agency (NITDA), National Cyber Security Agency (NCSA) of Thailand, Vietnam's National Cyber Security Center (has since been re-organized), Communications Regulatory Authority of Namibia (CRAN)

Countries and Regions Covered or Involved in the Implementation

Indonesia, Turkey, Nigeria, Thailand, Vietnam, Namibia, and Russia

Digitalization requires governments to integrate multiple software and hardware components from different sources into an effective system. However, not all agencies have the capability to assess the trustworthiness of technological products. Kaspersky's International Cyber Capacity Building Program (ICCBP) aims to develop this assessment capability in public organizations, particularly in developing countries.

Supporting to Jointly Build a Community with a Shared Future in Cyberspace

Kaspersky firmly believes in empowering countries and organizations with the independent capability to assess if any software or hardware components can be trusted. Current international standards may not adequately take into account local conditions or reflect the will and interests of most countries. When more countries develop such capabilities, they will be able to participate in future joint formulation of international governance standards. This is in the spirit of building a community with a shared future in cyberspace.

The ICCBP was designed with this goal in mind. The ICCBP provides dedicated training to government bodies, academic institutions, and enterprises to identify and assess risks associated with the integration of various software and hardware components. This enables them to test and better understand the functionality of digital products and services.

Since the ICCBP was launched in May 2020, officials and academics from countries across the Asia-Pacific, the Middle East, and Africa have received our training both online and offline. Countries that have made their participation public include Nigeria, Namibia, Turkey, Indonesia, Vietnam and Thailand. The involvement of developing countries is especially meaningful for us.

▲ Officials and academics from countries across the Asia-Pacific, the Middle East, and Africa have received the ICCBP's comprehensive training, both online and offline.

Innovation Targeted at Building Countries' Assessment Autonomy

The ICCBP originated from Kaspersky's Global Transparency Initiative, which allows customers and government agencies to inspect the source code of our signature products. This source code inspection ensures that the software contains no potential vulnerabilities or backdoors. However, we realized that many organizations lack the capability to perform such inspections. Kaspersky thus expanded this source code inspection into a core component of the ICCBP, evolving it into a comprehensive capacity-building program.

Besides Source Code Review, the ICCBP's modules encompass the full lifecycle of building computer systems, including product security evaluation; threat modelling; code fuzzing; and vulnerability management and disclosure. Each module combines theoretical knowledge with hands-on exercises, thereby enabling participants to apply concepts in real-world scenarios. For example, the Secure Code Review module teaches methods for detecting and exploiting potential security vulnerabilities in code.

ICCBP requires participants to have only basic knowledge of software development, programming, and information security. The online learning mode provides particular flexibility for busy participants, as they have six months to complete all ICCBP courses. Importantly, participants acquire practical, actionable skills to safeguard their organizations' digital infrastructure.

№	Track	Content	Lesson	Practice
1	Evaluating product security	An introduction to applications and systems security, and explain how you can build reliable and resilient ICT infrastructure	Introduction	Exercise: common threats
			Product security evaluation	
			Existing approaches	Knowledge check: true or false?
			Kaspersky's approach to product security evaluation	
			Track conclusion	
2	Threat modelling	An introduction to the process of identifying and mitigating potential threats, such as structural vulnerabilities or the absence of appropriate safeguards	Identifying and mitigating potential threats	Building diagrams
			Outlining key threats	Exercise: matching diagram visuals
			More key threats	Matching a diagram
			Mitigations	Prioritizing threats
			Track conclusion	Threat modelling homework (optional)

№	Track	Content	Lesson	Practice
3	Secure code review	The basic techniques for identifying vulnerabilities in software code	Security risks	Static analysis
			Dynamic analysis	Memory management vulnerability Task 1: type of overflow
			Integer security	Task 2: type of vulnerability, Part 3
			Type confusion, format strings, command injection	Type of vulnerability: Part 2
			Track conclusion	
4	Code fuzzing	The process of defining, developing and testing Windows-based applications to identify bugs and vulnerabilities	Track introduction	
			The theory of fuzzing	Virtual lab: fuzzing JSON with Radamsa
			Fuzzing tools: AFL	Virtual lab: fuzzing bsutils with AFL
			Sanitizers and in-memory fuzzing	Virtual lab: fuzzing CJSON with LibFuzzer
5	Vulnerability management and disclosure	Approaches for the building process of managing vulnerabilities within an organization's ICT infrastructure	Building reliable and resilient ICT infrastructure	Regulatory compliance Exercise: Key risks
			Definition and concepts in vulnerability management and disclosure	The process of Coordinated Vulnerability Disclosure
			Establishing a vulnerability management and disclosure program	Building trust for minimizing risk

▲ The ICCBP's modules encompass the full life cycle of building computer systems, including product security evaluation; threat modelling; code fuzzing; and vulnerability management and disclosure.

Advancing Global Cyber Resilience and Inclusive Digital Development

Participants of the ICCBP include senior leaders and newly appointed officials from national cybersecurity institutions. Among countries that have publicly announced their participation, the total population exceeds 700 million. This enables a more secure digital ecosystem for local people, which in turn promotes economic growth and innovation.

To ensure inclusiveness, the ICCBP also extends from government to academia. In Turkey, content from the ICCBP has been delivered to cybersecurity students, as building national capabilities for autonomous technological assessment must begin with them. As the ICCBP extends to more countries, it will help bridge the global digital divide.

Key leaders from participating countries have provided strong support for the ICCBP. Air Vice Marshal Amorn Chomchoey, Secretary-General of Thailand's National Cyber Security Agency said, "This activity was not just a training, but it was a team-building effort aimed at uniting all nations to jointly address cyber threats". Similarly, MrHinsaSiburian, then-Head of Indonesia's National Cyber and Crypto Agency said that the ICCBP "established a structured Cybersecurity Human Resources posture that will cultivate professionals capable of adapting to technological developments and possessing cybersecurity technical competencies.".

▲ The ICCBP received support from top leaders of participating organizations. Photographs depict Kaspersky CEO and Founder Eugene Kaspersky signing the memoranda of understanding with Thailand's National Cyber Security Agency and Indonesia's National Cyber and Crypto Agency.

Outstanding Case

Siemens Security Defense Framework - Building a New Cybersecurity Line of Defense for Global Automotive Manufacturing Industry

Applying Institution

Siemens (China) Co., Ltd.

SIEMENS

Countries and Regions Covered or Involved in the Implementation

China, Germany, Portugal, the United Kingdom, Australia, and India

When a smart car contains over a hundred ECUs, ,a single remote intrusion can bring production lines to a halt and trigger large-scale vehicle recalls, resulting in losses of hundreds of millions of yuan per hour. Relying on its experience in international cooperation and technological accumulation, Siemens Ltd., China (hereinafter referred to as "Siemens") has launched a cybersecurity solution tailored for the automotive manufacturing industry. This solution builds an "endogenous immunity"-level security foundation for automakers, ensuring that the acceleration of digitalization is no longer accompanied by uncontrolled risks. It helps global automakers strengthen the protection of critical information infrastructure, uphold information technology neutrality and industrial globalization, curb the abuse of information technology, and inject impetus into the safe development of the industry.

Building an Industrial Digital Security Framework to Safeguard the Automotive Industry

Since 2021, Siemens has successfully built a comprehensive security defense framework by conducting risk assessments on critical workshop assets, providing monthly threat intelligence services, and implementing whitelist reinforcement on over 1,000 hosts across dozens of workshops. Since its implementation, this framework has been rapidly put into practice in multiple countries and regions around the world. Through close collaboration with leading global automakers, security institutions, and government departments, it has not only enhanced enterprises' cybersecurity protection capabilities but also laid a solid foundation for the subsequent development of industrial digital security frameworks in the industry.12.

Building Security Solutions Based on International Standards

▲ Siemens' Defense-in-Depth System adopts a multi-layered security architecture featuring "layered protection and collaborative response," upgrading industrial systems from "single-point protection" to "full-domain immunity."

Siemens' industrial cybersecurity solution is built upon internationally recognized standards, including the NIST Cybersecurity Framework, ISO/IEC 27001 Information Security Management System, and IEC 62443 Industrial Automation and Control Systems Standard. Leveraging its deep expertise in industrial cybersecurity, Siemens has developed a defense-in-depth architecture and industry best practices. Throughout this process, Siemens has not only delivered cutting-edge technologies and management experience but also facilitated global exchanges and alignment across the automotive sector in cybersecurity standards, policies, and regulations—advancing the overall security maturity of the industry.

Innovative Asset and Operational Dual Engines Drive and Reshape Industrial Security for Automakers

In dynamic risk management, Siemens has developed the Industrial Cybersecurity Situation Awareness Platform (SSM), which enhances both asset management efficiency and threat detection and response capabilities. Through real-time monitoring and management of workshop assets, SSM enables the timely identification and mitigation of potential threats, ensuring the security and stability of production environments. By adopting this system, enterprises can better manage complex industrial operations, improve operational efficiency, and reduce security risks.

SSM was featured as a benchmark case in the Cloud Security Practice Guide for the Industrial Sector, jointly released by Siemens and the China Communications Standards Association (CCSA). This recognition highlights SSM's innovation and practicality while demonstrating Siemens' leadership in industrial cybersecurity and its role in advancing industry-wide security development.

To address the rising threat of ransomware, Siemens has also introduced a new Anti-Ransomware Security Capability Framework. Evaluated and validated by expert committees, the framework provides enterprises with a clear roadmap for improvement, helping them build a robust protection system for critical assets and operations.

▲ *Cloud Security Practice Guide for the Industrial Sector* jointly released by Siemens and the China Communications Standards Association (CCSA)

▲ Siemens, together with internal and external experts, conducts star-level assessment of enterprises' security capabilities against ransomware attacks

Safety Empowers the Inclusive Development of the Global Automotive Manufacturing Industry

With the support of Siemens, automotive manufacturing enterprises have introduced industrial security solutions, successfully addressed cybersecurity challenges, and achieved the establishment of a security defense framework as well as the improvement of operational efficiency. Through innovative solutions for dynamic risk management and asset operation and protection, Siemens has not only made remarkable achievements in the field of cybersecurity but also provided valuable insights and exemplary practices for the entire automotive industry.

▲ Cybersecurity and Information Security Safeguard Digital Industrial Enterprises

Looking ahead, Siemens will continue deepening cooperation across broader industrial sectors—including petroleum, chemicals, steel, shipbuilding, pharmaceuticals, food and beverages, glass, cement, and healthcare—to enhance safety performance, ensure the intelligent transformation of industrial security, and contribute to the sustainable development of the global economy and society.

Open Source Supply Chain Security Detection and Governance—International Collaboration Program

▲ Background of Open Source Supply Chain Security Risks

Applying Institution

The Third Research Institute of the Ministry of Public Security

Other Participating Institutions

HKU School of Computing and Data Science; Institute of Cyberspace Security, Harbin Institute of Technology, Shenzhen; Sino-Hong Kong Emerging Engineering Education Alliance Company Limited; Macau University of Science and Technology; Macao Cyber and Data Security Society; Hong Kong Cyber and Information Security Evaluation Center Co., Ltd. (Hong Kong, China).

Countries and Regions Covered or Involved in the Implementation

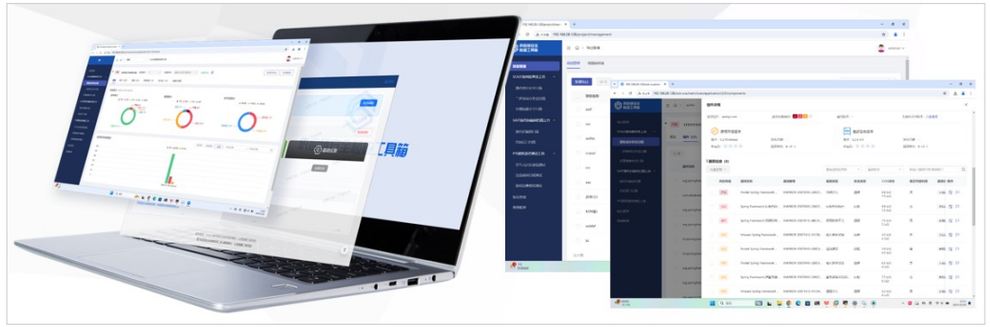
China, Singapore

As global digitalization accelerates, open-source software vulnerabilities and supply chain risks continue to emerge, with incidents such as the Log4j2 vulnerability and the XZ-Utils backdoor drawing worldwide attention. To address cross-border risks and compliance challenges, the Third Research Institute of the Ministry of Public Security has partnered with leading universities, including the University of Hong Kong, the Hong Kong University of Science and Technology, and Harbin Institute of Technology, together with cross-regional innovation platforms such as the Industry-Education Integration Alliance and the Cyber Data Security Association. The collaboration focuses on exploring AI-driven methodologies for open-source risk detection and coordinated governance, with the goal of establishing a supply chain security practice model oriented toward international cooperation.

Cross-regional collaboration to set a new benchmark for open-source security detection and governance

To address challenges like the difficulties in detecting, governing and collaborating on supply chain security risks, the institute has partnered with universities in Shenzhen, Hong Kong, and Macao, as well as regional innovation platforms, to launch the Greater Bay Area Supply Chain Security Detection and Governance International Collaboration Program (GBA-SCS). Building upon the "Greater Bay Area Software Supply Chain Security Safeguard Initiative" launched in 2021, this program provides over 200 free security testing and reinforcement consultations each year for academic research projects and small- to medium-sized enterprises in regions such as Hong Kong (China), Macao (China), and Singapore. To date, it has scanned more than 1,000 open-source code repositories, accurately identified over 5,000 high-risk vulnerabilities, and delivered standardized outcomes including risk disposal reports, remediation guides, and public training courses. These efforts have helped partner organizations quickly resolve vulnerabilities and prevent more than 230 potential security incidents, such as data leaks in financial institutions and source code contamination in research projects.

At present, the GBA-SCS initiative has been applied in Singapore and in cybersecurity assurance operations for major national competitions in the Hong Kong region, gradually shaping a replicable internationalized rapid-response model for open-source security.

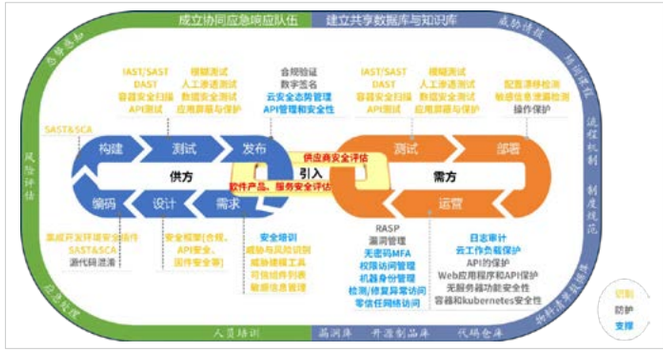


▲ Supply Chain Security Risk Detection and Governance Tools

Advancing technological frontiers to develop an AI-driven, full-stack platform for proactive security and risk management

The project has developed the GBA-SCS Detection Platform, a comprehensive system that covers the full software lifecycle, including development, testing and operations. The platform integrates three core capabilities: automated SBOM generation with risk traceability, integrated vulnerability and malicious code scanning, and intelligent license compliance assessment. It is fully compatible with international standards such as CycloneDX, SPDX, and VEX, enabling precise risk identification and effective compliance management.

Through the integration of multiple detection technologies, the platform has achieved a 200 percent improvement in vulnerability remediation efficiency while maintaining a false positive rate below three percent. It also introduces AI-driven risk intelligence scoring, applying semantic analysis and casual inference based on large language models to identify critical scenarios such as supply chain poisoning dependencies, inherited vulnerabilities, and license conflicts. The system automatically produces component-level risk ratings and prioritized remediation recommendations, increasing security team efficiency by more than 60 percent. This approach provides a replicable and globally adaptable technical framework for advancing open-source supply chain security governance.



▲ The Technology System for Governance of Supply Chain Security Risks Driven by AI

The program fosters close collaboration among industry, academia, and research institutions, promoting the cross-border transfer and practical application of scientific and technological innovations

The project has established a comprehensive collaboration framework that integrates academic research, technological innovation, and industrial application. Working jointly with leading universities, it validates algorithmic models within real-world research projects and has deployed over 50 pilot implementations across academic environments. Mature solutions have subsequently been migrated to production environments in more than 30 organizations, including financial institutions and government cloud infrastructures.

Through continuous operational feedback, the underlying technical models have undergone iterative optimization, fostering cross-jurisdictional compliance sharing and risk intelligence interoperability. By linking AI-driven risk scoring mechanisms with targeted governance processes in open-source communities, the project has markedly enhanced transparency and risk response capabilities. This initiative serves as a practical reference and collaborative model for advancing cross-border software supply chain security governance and building the global open-source ecosystem.

▲ Cross-Regional Innovation Platform Technology Seminar

▲ Open-Source Risk Governance Technology Exchange Seminar

Large-scale AI Model-based Global Shipping Cybersecurity Intelligence Hub

▲ China COSCO Shipping Corporation Limited.Group Building

Applying Institution

COSCO Shipping Technology Co., Ltd.

Other Participating Institution

China COSCO Shipping Corporation Limited

Countries and Regions Covered or Involved in the Implementation

31 countries and regions such as China, Peru, and South Korea

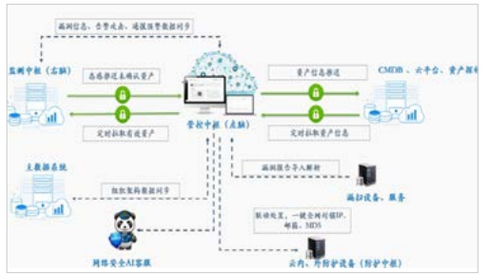
As the Belt and Road Initiative advances, the global shipping industry is accelerating its digital transformation and upgrade. The cybersecurity threats faced by multinational shipping enterprises are also becoming increasingly severe. Against this backdrop, COSCO Shipping Technology Co., Ltd. (hereafter referred to as “COSCO Shipping Tech”) has independently developed a global shipping cybersecurity intelligence hub based on large-scale AI models, which fortifies security defenses for cross-border and cross-enterprise shipping businesses, achieving both cybersecurity protection and digital empowerment of the global shipping sector.

Establishment of a Collaborative System that “Transcends the Boundaries of Nations and Enterprises”

Focusing on the cybersecurity challenges arising during the digital transformation of the global shipping industry, COSCO Shipping Tech is dedicated to establishing an internationally leading intelligent protection system.

Firstly, in response to the frequent cybersecurity attacks in the shipping industry, COSCO Shipping Tech has created a collaborative protection mechanism—the “Security Left Brain” and “Security Right Brain”—by integrating advanced technologies such as AI through the central hub. This approach effectively improves the efficiency of collaborative handling of security incidents, achieving performance at internationally advanced levels.

Secondly, this central hub now provides services to over 350 entities across multiple countries and regions worldwide. Its technical achievements have earned it multiple professional certifications and authoritative endorsements, thereby rendering it one of the benchmark cases in the field. Furthermore, the central hub has established an industry-level threat intelligence sharing mechanism, providing robust and reliable security safeguards for the digital transformation of global shipping. This fully demonstrates China’s capabilities in technology export and its commitment to international responsibility.



▲ Overall architecture of the central hub

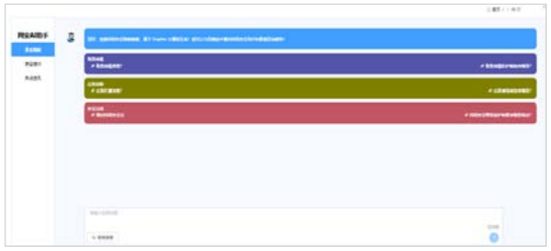
▲ Industrial chain empowerment

Reconstruction of the Technical Architecture: “Data-Driven + AI-Empowered”

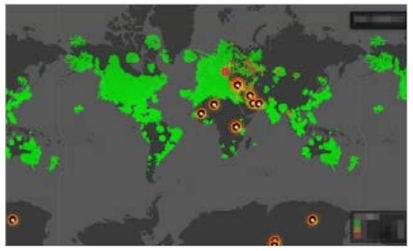
Through architectural innovation, the intelligence hub develops internationally leading shipping cybersecurity solutions, driving industrial transformation and upgrade.

The “Data-driven + AI-empowered” approach demonstrates remarkable innovation and exemplary impact. On one hand, it establishes the “Left and Right Brain” collaborative architecture: the management hub effectively resolves the inefficiencies of traditional manual coordination; the technology hub successfully overcomes the bottleneck of multi-source heterogeneous data integration; and the proactive protection hub achieves granular control over cloud environment traffic.

On the other hand, the establishment of a tripartite intelligent hub architecture improves alert aggregation efficiency through deep integration of artificial intelligence and big data. Concurrently, the intelligence hub leverages automated response innovations to reduce alert resolution time while improving cross-team and cross-enterprise collaboration efficiency through visualization and collaborative innovation.



▲ AI empowerment improving resolution efficiency



▲ Granular control

Establishing a Development Framework Characterized by “Pioneering Leadership and Full-Chain Synergy”

The intelligence hub adopts a “technology for all” approach, formulating a development framework characterized by “pioneering leadership and full-chain synergy,” thereby combining com-

mercial value with social welfare attributes.

For small and medium-sized shipping enterprises, they need not invest heavily in establishing proprietary security systems; instead, they may gain access to world-class security protection services simply by connecting to the hub, effectively overcoming technical barriers.

▲ Participation in the World Artificial Intelligence Conference

In terms of cost reduction and efficiency improvement, the hub minimizes manual intervention through AI-automated operations, enabling enterprises to achieve a virtuous cycle of security investment and business growth. Furthermore, COSCO Shipping Tech conducts global shipping safety knowledge-sharing activities; through online training and case studies, it transforms technical achievements into industry-wide best practices, empowering global shipping enterprises to collectively enhance their security capabilities and contribute to building a global community with a shared future in cyberspace.

Cyber Security Summit (Tianjin)

▲ The Second Cyber Security Summit (Tianjin)

Applying Institution

National Computer Virus Emergency Response Center

Other Participating Institutions

Tianjin Municipal People's Government, Tianjin Municipal Public Security Bureau, People's Government of Tianjin Binhai New Area, National Cyber and Information Security Notification Center.

Countries and Regions Covered or Involved in the Implementation

12 countries and regions such as China, Chile, New Zealand, Finland, and the United States

As China's only international official forum dedicated to the theme of "cyberspace security," Cyber Security Summit (Tianjin) has become a key platform for global cybersecurity dialogue. Guided by the principle of "wide consultation, joint contribution and shared benefits," the forum pools global wisdom to explore ways of building a more secure, open, and inclusive digital space. It promotes global collaboration in governance, contributing China's wisdom and solutions.

Focusing on co-construction and co-governance, bringing together international resources

CSST is hosted by Tianjin Municipal People's Government, organized by the National Computer Virus Emergency Response Center and other institutions, and co-organized by the National Cyber and Information Security Notification Center. Under the theme "Jointly Building Cyber Security and Governing Cyberspace," the Summit has been successfully held twice since 2023. Each year, it has attracted in-depth participation from over 700 international experts, scholars, and industry representatives from more than 10 countries, including the United States, Russia, the United Kingdom, New Zealand, South Korea, Singapore, Chile, Finland, Turkey, and Serbia, engaging in international dialogue on cyberspace. Simultaneously, the Summit has invited broad participation from nearly 300 representatives from government departments, central state-owned enterprises, financial institutions, research institutes, universities, and global information security companies, jointly promoting international cybersecurity exchanges and cooperation. The third edition of the Summit will be held in September 2025, continuing to serve as a platform for global cybersecurity dialogue and collaboration.

▲ Distinguished guests from around the world

▲ Distinguished Guests

▲ The then Vice Minister of the Ministry of Public Security and Member of the Party Committee, Chen Siyuan,delivered a speech at the opening ceremony.

▲ The forum brought together over 700 distinguished guests from around the world and across various sectors.

Innovating in Format and Content, Establishing an Industry Benchmark

The Summit places a strong emphasis on dual innovation in both format and content. During the event, the "Tianwang Cup" Cybersecurity Competition, focusing on three key areas—vulnerability discovery in critical products, security of large-scale artificial intelligence models, and intelligent connected vehicle security—attracted widespread global attention. Meanwhile, the Summit also featured segments such as the Outstanding Contribution Awards ceremony, the appointment and signing ceremony for the Cybersecurity Law Special Committee, continuously expanding the breadth and depth of international exchanges. In terms of outcomes, several technical reports were released during the forum, including the "Cybersecurity Evaluation Index System," the "Analysis Report on the Security Situation in Cyberspace," and the "Report on the Security Status of Mobile Internet Applications." Additionally, the National Computer Virus Collaborative Analysis Platform and the latest cybersecurity-specific products were launched, establishing a coordinated response mechanism for cyberattacks and forming replicable, scalable governance experience. These series of practices have not only set an industry benchmark domestically but have also exerted a positive influence on the cybersecurity regulation and governance of over 10 countries, including the United States, Russia, the United Kingdom, South Korea, Singapore, and Serbia.

▲ The launch ceremony of "Analysis Report on the Security Situation in Cyberspace", and the "Report on the Security Status of Mobile Internet Applications"

▲ The awarding ceremony of the Outstanding Contribution Award

Fruitful Outcomes: Contributing to Global

The Summit has fostered international consensus and put into practice the vision of "community with a shared future in cyberspace." Focusing on cutting-edge topics such as AI security, data security, advanced threat defense, cybersecurity rule of law, low-altitude security, and mobile internet application security, the forum facilitated in-depth discussions on pressing and challenging issues in global cybersecurity, contributing Chinese wisdom and strength to international governance. In terms of cooperation and exchange, the forum balanced development and security, spurring a range of new ideas and strategic collaborations, and serving as a new engine for industrial development. The International Anti-Virus Conference held during the forum attracted experts and scholars from over ten countries and regions, including the United States, Russia, and Serbia, to discuss the cybersecurity landscape, expanding the circle of collaborative partnerships and gradually forging a new dynamic of win-win cooperation and shared benefits. On the practical front, the concurrently held "Tianwang Cup" Cybersecurity Competition drew nearly 400 Chinese participants, who cumulatively uncovered over 200 vulnerabilities in total, achieving a 67% recognition rate for AI "deep fake" content. They also found 120 security vulnerabilities in intelligent connected vehicles, providing reference examples and technical support for global regulatory authorities to carry out cybersecurity governance.

▲ Scene from the 2nd "Tianwang Cup" Cybersecurity Competition

▲ Eugene Kaspersky, CEO of Kaspersky Lab, delivers a speech at the Main Forum

Shield Cube -- An Comprehensive Cybersecurity Defense System for Global Sporting Events

▲ Shield Cube safeguards global sporting event systems against malicious intrusions

Applying Institution

Guangzhou University

Other Participating Institutions

Pengcheng Laboratory, Harbin Institute of Technology (Shenzhen), Range Soft Ltd., Yilan Situation Ltd., Geedge Networks Ltd., Beijing University of Posts and Telecommunications, Xiong'an Shield Cube Ltd., DBAPPSecurity Ltd.

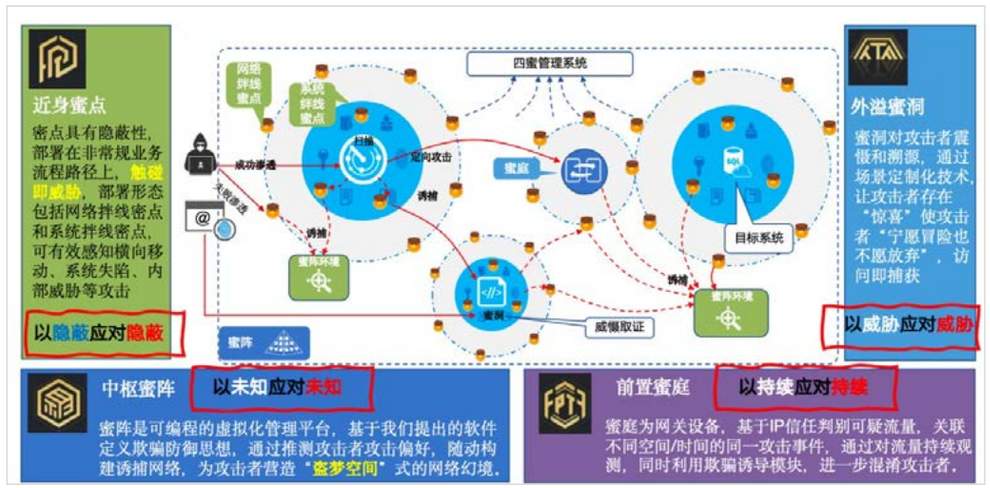
Countries and Regions Covered or Involved in the Implementation

28 countries and regions such as China, Japan, South Korea, North Korea, and Mongolia

Cybersecurity is a crucial safeguard for large-scale international events, ensuring the integrity of competition results and the stable operation of event support systems. The high visibility of such events often attracts sophisticated cyberattacks, while system developers tend to prioritize functionality over defense capability. To address this challenge, a research team led by Academician Binxing Fang developed the Shield Cube, a comprehensive cybersecurity defense system based on a proactive "safeguard mode."

Safeguarding the Asian Winter Games: Where Cyber Confrontation Rivals the Excitement of the Games Themselves

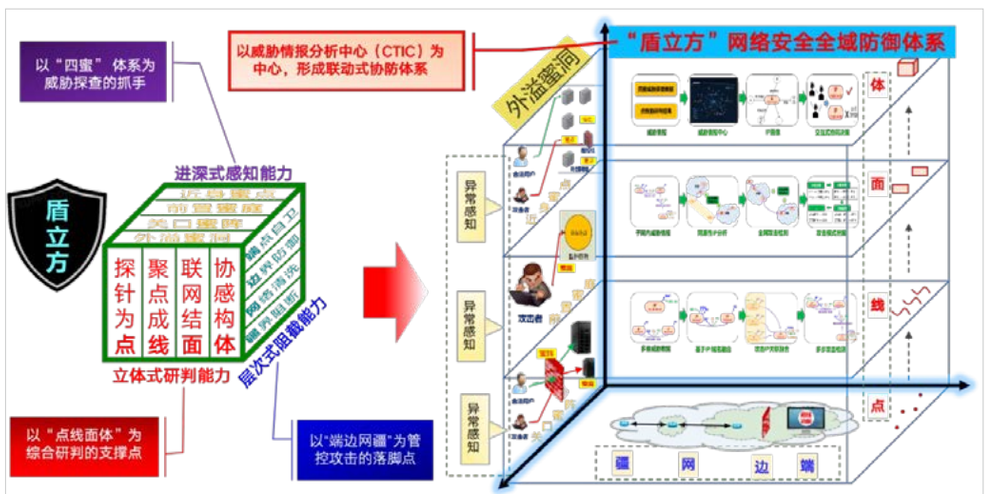
The day before the opening of the Asian Winter Games, global network traffic surged to record levels, driven by social media, news outlets, and live-streaming platforms. Pre-event activities such as the emblem solicitation and torch relay generated "explosive dissemination," with short-video topics amassing over ten million views. Meanwhile, the event systems were targeted by an unprecedented wave of cyberattacks—more than 270,000 worldwide, many aimed directly at the core infrastructure. Relying on independently developed defense technologies,, the Shield Cube executed real-time traffic cleansing and threat tracing, blocking 12,602 high-risk malicious IP addresses and successfully thwarting penetration and data-theft attempts against ticketing, logistics, and accreditation systems. Its rapid response ensured zero security incidents throughout the Games and enabled effective attribution of multiple cybercrime cases. By providing a plug-and-play solution adaptable to various major international events, Shield Cube has established a new paradigm for global event cybersecurity—merging innovative design, practical defense, and international application.



▲ The innovative defense concept of Shield Cube

Innovative Defense Concept: Shield Cube -- A New Type of Active Defense System integrating Trap-based Perception, Correlation Analysis and Judgment, and Threat Blocking

To overcome the limitations of traditional cybersecurity systems—namely, insufficient active defense and poor adaptability to emerging threats—the Shield Cube adopts a proactive model of "Perception–Analysis–Interception." It builds a deceptive defense environment tightly coupled with event operations, featuring diverse and dynamic decoys designed to lure and capture attacker behavior under the principle of "hidden defense, exposed attacker." Through collaborative correlation analysis across multiple defense agents, the system identifies attacker organizations and uncovers latent relationships among massive volumes of malicious entities. By employing techniques such as reverse proxy tracing and code-based attribution, it effectively deters hacker groups. The Shield Cube supports flexible deployment, operating either in virtualized event cloud environments or as on-site hardware appliances within venues to detect localized attacks. During the Asian Winter Games, the system demonstrated a fivefold increase in threat detection efficiency compared to traditional defense models—proving the effectiveness of its active deception-based architecture.



▲ Overview of the Shield Cube framework

tThe concept of the Shield Cube was first proposed by Academician Binxing Fang during the 2022 Beijing Winter Olympics. Through core technological breakthroughs, the Shield Cube was first-time officially deployed and applied at the 133rd China Import and Export Fair (Canton Fair) in 2023. Since then, Shield Cube has successively supported multiple tasks of important worldwide and nationwide events such as the Asian Games, the Canton Fair (for five consecutive sessions from 133rd to 137th), National University Games, and "Yuedun" (currently providing comprehensive cybersecurity support for the 15th National Games). To date, the system has detected and neutralized over 20,000 malicious IPs, identified APT group activities, external intrusions, and internal reconnaissance attempts—eliminating potential risks and maintaining a "zero-incident" record across all events. The system's outstanding performance has earned formal commendations and letters of appreciation from multiple organizing committees, including the National University Games, which praised Shield Cube for "significantly enhancing the cybersecurity protection capabilities of the 31st Games." Through these real-world applications, Shield Cube has evolved into a mature, stable, and replicable cybersecurity defense paradigm, setting a benchmark for safeguarding major global events in the digital era.

▲ Shield Cube team is conducinting the cybersecurity guarantee task for the Asian Winter Games

Facilitating Cross-border Data Flows: Reform Measures and Practical Experience

▲ Advancing Cross-border Data Reforms to Build a Trusted, Efficient, and Inclusive Global Data Flow System

Applying Institution

Harbin Institute of Technology

Other Participating Institutions

Beijing Shufeng Technology Co., Ltd.; China Mobile Group Design Institute Co., Ltd.

Countries and Regions Covered or Involved in the Implementation

11 countries and regions such as China, Argentina, Brazil, Belarus, and Chile

As cross-border data flows expand globally, nations face a shared challenge: ensuring data security while enabling efficient and convenient transfers. To strike a balance between free data movement and national oversight, the Harbin Institute of Technology has supported the development of Beijing's Cross-Border Data Service Center. This initiative has built a practical, one-stop service system offering policy guidance, technical evaluation, risk assessment, and compliance support—contributing to a more open, secure, and trustworthy global digital governance environment.

The Cross-border Data Service Center Promotes Global Free Flow of Data

The Beijing Cross-Border Data Service Center assists enterprises throughout the entire process of data export—from application support and sensitive data identification to contract review and compliance filing. By adopting standardized procedures and intelligent tools, it has significantly improved the efficiency of data transfer approvals. This support is particularly crucial for data-intensive industries such as the internet, artificial intelligence, healthcare, and finance, enabling smoother international operations.

Meanwhile, the Center actively aligns with international standards and explores trusted mechanisms for cross-border data exchange. It aims to build a reliable global data network and provides a practical model for cross-border data governance, contributing to digital trade and strengthening Beijing's role as a global digital hub.

For example, through collaboration with Catena-X—an international automotive data ecosystem led by Germany's auto industry—the Center has enhanced supply chain efficiency, setting a benchmark for global data cooperation.

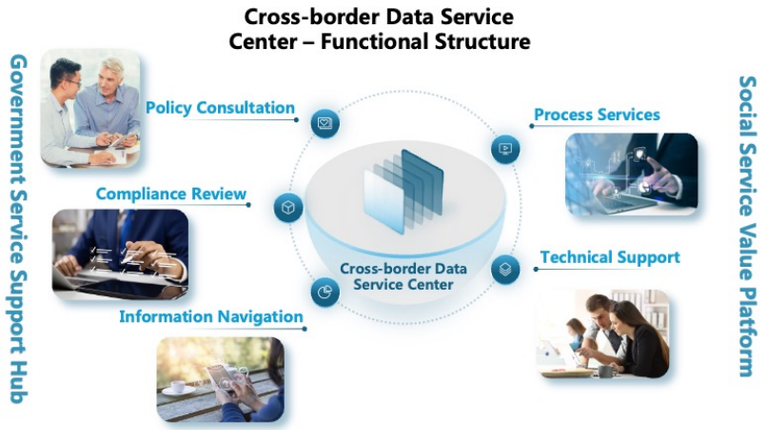
▲ Accelerating Global Business Expansion through Cross-border Data Facilitation

Reform Measures for Facilitating Cross-border Data Flows

In terms of service delivery, the Cross-border Data Service Center has established an integrated system combining government coordination, market-driven expertise, and technical support. This "one-stop" platform provides businesses with comprehensive and streamlined compliance services.

Its coordinated team—comprising consultation desks, review officers, process navigators, technical experts, and professional service providers—supports enterprises throughout every stage of data export, from policy interpretation and application filing to risk monitoring and compliance review.

By leveraging intelligent identification systems, risk assessment models, and standardized guidance templates, the Center has reduced compliance costs, shortened approval cycles, and made cross-border data transfers more efficient, transparent, and standardized.

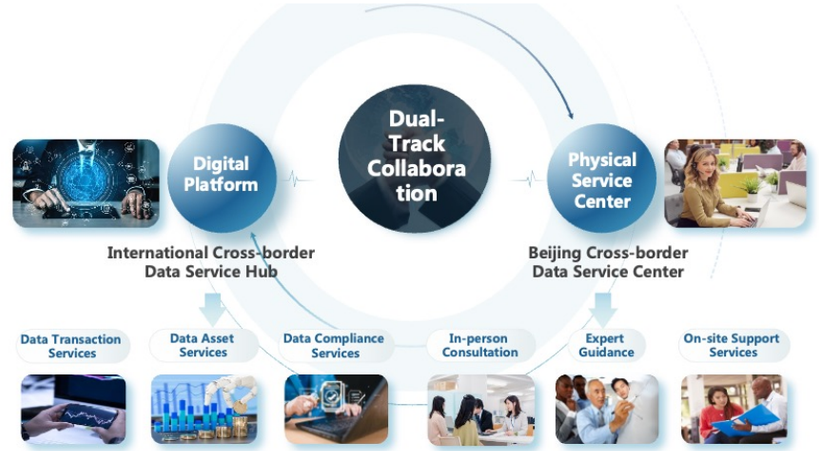


▲ Empowering the Future of Global Digital Trade through the Cross-border Data Service Center

"One-Stop" Service Drives Orderly Data Flow and Unlocks the Inclusive Value of the Digital Economy

The "one-stop" cross-border data service, with its efficient and standardized processes, provides strong institutional and technical support for enterprises expanding overseas, ensuring the secure and smooth flow of global data. The Beijing Cross-border Data Service Center guided multinational companies such as Bayer, Samsung, and Sanofi—alongside leading tech firms—to become the first in China to legally transfer data abroad using the negative list mechanism for cross-border data transfer. This breakthrough has enabled data sharing in areas like remote education, cross-border healthcare, and international research collaboration, significantly improving access to and inclusiveness of digital public services.

By promoting orderly and secure cross-border data flows, the Center offers a replicable model for building a transparent, standardized, and fair global data exchange environment—providing effective solutions for the sustainable development of the digital economy.



▲ Figure 4 Creating a New Model for Cross-border Data Services to Unlock Global Digital Dividends

Building International Standards in the Network Field and Jointly Cultivating International Information Security Talents Practical Case

▲ Wang Xierui, Secretary of the Party Committee of Shandong Vocational College of Information Technology, delivers a speech at the China-Pakistan Digital Education Promotion Conference

Applying Institution

Shandong College of Information Technology

Other Participating Institution

ITMC Technology Co., Ltd

Countries and Regions Covered or Involved in the Implementation

China, South Africa, Malaysia, Pakistan

In the digital era, cyber security has become a common challenge faced by the world. Shandong College of Information Technology has collaborated with ITMC to establish the "Luban-Mozi College-Pakistan " in November 2024. Together, they aim to build a vocational-skill training base for local enterprises in Pakistan, providing an international reference for cultivating cybersecurity talents. This project has also gradually benefited countries such as South Africa and Malaysia, providing a new cooperation model for regional cyber security capacity building.

China And Pakistan Jointly Established The “Luban–Mozi College (Pakistan)”, Creating A Collaborative Training Center That Connects Enterprises Across Borders.

The “Luban-Mozi College-Pakistan” focuses on the cutting-edge demands in the field of cyber security and has built a training platform that is highly integrated with enterprise practice, capable of simulating real operating environments. Through internationalized curriculum design and project-based practical training, the practical operation ability and professional quality of the trainees are systematically enhanced. The base also actively promotes the exchange of Chinese and foreign teachers and the participation of enterprise mentors to ensure that the training content closely meets the actual needs of the industry. It provides trainees with an international, high-level and applied skills growth platform to help them become technical and skilled talents with global competitiveness.

▲ The jointly-built Pakistan Vocational Skills Training Center

Pooling China–Pakistan Wisdom to Formulate International Standards

To enhance the quality of training and promote the long-term effectiveness of the results, Shandong College of Information Technology, in collaboration with experts from multiple parties, has jointly developed the “Network and Information Security Administrator” certification standard system. This system has established multi-level capability standards based on industry development trends and job competency requirements, covering multiple dimensions such as technical practice, management processes, laws and regulations, and cross-cultural collaboration. The system not only provides a unified standard for talent training and evaluation, but also offers a reference for enterprises’ recruitment, international skills certification and cooperation. It helps to achieve the standardization and internationalization of local talent cultivation overseas and guarantees the output of high-level, multidisciplinary cybersecurity professionals.

▲ China-Pakistan Vocational Education and Training Cooperation Forum

Continuously Optimize And Widely Benefit, To Help Enhance The Cultivation Of Cybersecurity Talents.

In practice, Shandong College of Information Technology systematically integrates the core requirements of the certification standards into the training system and course content construction, and constantly adjusts and optimizes them in accordance with the global cyber security situation and technological evolution, to help build a teaching resource system that not only meets local development needs but also has an international perspective. Through various forms such as international open classes, vocational skills competitions, and public welfare training programs, the project has widely benefited groups such as college students and enterprise technicians, breaking through geographical and resource limitations and expanding the coverage of cyber security beneficiaries. With the improvement outside the training system, it has helped the local area gradually form the ability of self-cultivation and development, achieving a transformation from relying on external support to independent development, making cyber security a solid bond connecting the world in the digital age.

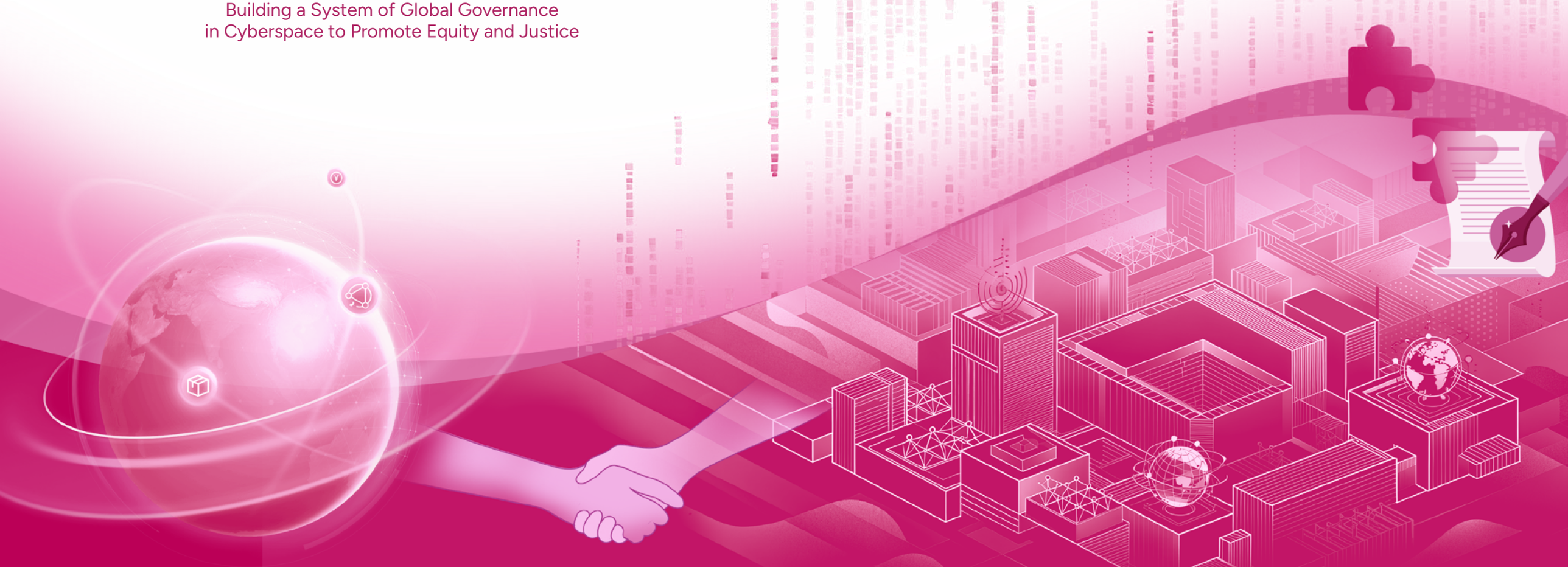
▲ Teachers patiently guide international students in preparing for competitions

▲ Students win two bronze medals in the "New-Generation Information Technology Track" of the 2025 World Vocational College Skills Competition

05

Global Governance in Cyberspace

Building a System of Global Governance in Cyberspace to Promote Equity and Justice



Outstanding Case

BGPWatch: a Collaborative BGP Routing Analyzing and Diagnosing Platform

▲ The BGPWatch Platform

Applying Institution

Tsinghua University

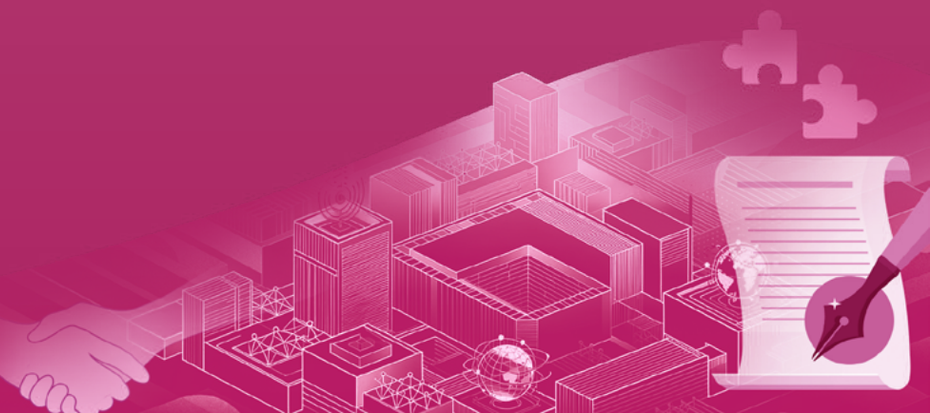
Other Participating Institutions

China Education and Research Network (CERNET), Beijing University of Post and Telecommunications, Chinese Academy of Sciences, Bitway, University of Electronic Science and Technology of China, E-Hualu, Shandong University, The Hong Kong Polytechnic University, Joint Universities Computer Centre / Hong Kong Academic and Research Network, Asia Pacific Advanced Network - Japan, Korea Institute of Science and Technology, Trans-Eurasia Information Network Cooperative Center, SingAREN, MYREN, University of Malaya, ThaiREN, Mae Fah Luang University, BdREN, NREN, PERN, LEARN, ERNET, DOST-ASTI, University of Computer Studies, Yangon, Institut Teknologi Bandung, CamREN, AfgREN, ErdemNet, King Abdullah University of Science & Technology, University of Gottingen, University of Surrey, AARNet, REANNZ, SANReN, TransPAC, RNP, RedCLARA

Countries and Regions Covered or Involved in the Implementation

27 countries and regions such as China, Bangladesh, Pakistan, South Korea, and Thailand

Global BGP route hijacking incidents occur frequently, threatening network information security and posing severe challenges, especially for developing countries. To promote collaborative and inclusive governance, the Tsinghua University project team partnered with research institutions from several countries and regions to co-build the BGPWatch platform. This initiative enhances global route security monitoring and governance capabilities, and fosters an inclusive and secure internet governance system.



Co-building the BGPWatch Platform: Global Collaboration Enhances Route Security, Contributing to a Fair and Orderly Cyberspace Governance System

Since 2020, the BGPWatch platform has focused on global routing security monitoring and governance by leveraging open network resources. Through large-scale cyberspace mapping and key technology integration, it unites 38 education and research networks and institutions from 27 countries and regions, forming a probe-based monitoring network that spans over 100 countries. Adhering to the principles of openness, collaboration, and co-governance, BGPWatch works with international partners to formulate detection rules, share threat information, and coordinate responses to security incidents, forming a sustained cross-border, cross-institutional security collaboration mechanism.

By innovatively integrating open resources such as Looking Glass and relay proxies, along with alliance member data, the platform achieves cost-effective and timely global network situational awareness and information sharing. BGPWatch has generated a series of high-impact research outcomes and provides technical support to numerous National Research and Education Networks (NRENs), significantly improving international capabilities in routing monitoring, traceability, and governance. As a vital practice in international cyberspace governance, BGPWatch continues to exert broad and lasting influence worldwide.

▲ Global Distribution of Project Partners

From Sharing to Co-building: Real-time BGP Security Threat Awareness and Joint Response Based on Collaborative Mapping and Open-source Tools

BGP Watch enhances global BGP routing security and network measurement capacities through an governance model that evolves from “resource sharing” to “collaborative rule-making.” The platform independently developed high-precision anomaly detection algorithms capable of identifying route hijacks, route leaks, and other security threats in real time. Its visualization dashboard supports alerting and route playback functionalities. By innovatively integrating tools such as AS Path Dashboards and bidirectional route analysis, BGPWatch enables users to efficiently monitor network dynamics. With over 2,500 global observation points, it achieves panoramic tracking and validation of inter-AS routing, and supports customizable subscription services for rapid incident response.

BGPWatch transforms resource-intensive network mapping into an open collaborative platform, significantly strengthening the capacity of countries—especially developing economies—to detect and co-manage network threats. The platform’s achievements have been published in top-tier international conferences such as USENIX Security and IMC, establishing it as a global model for BGP security governance.

▲ BGPWatch Routing Monitoring and Diagnostic Interface

Empowering Global Internet Governance and Inclusive Development through the Joint Construction of BGPWatch

Relying on the CGTF alliance and international cooperation projects, BGPWatch promotes cross-border resource sharing and collaborative governance, contributing to the development of a shared future in cyberspace. With partners spanning five continents, the project embodies the principles of joint consultation, shared information, open data, and mutual benefit.

Over the past five years, the platform has organized more than 140 international conferences and technical workshops across over 50 countries, advancing open access to BGP security knowledge and fostering widespread technical capacity building that benefits tens of thousands of research and education institutions.

The initiative has significantly enhanced the observability, security responsiveness, and autonomous governance capacities of NRENs worldwide, with a particular focus on empowering developing countries such as Nepal and Bangladesh to strengthen their engagement and influence in BGP security governance.

BGPWatch has emerged as a cornerstone platform in global Internet governance, continuously driving the creation of an open, inclusive, and equitable digital ecosystem.

▲ Platform-specific Training and Community Sharing Sessions

Outstanding Case

Ghana School on Internet Governance (GhanaSIG)

▲ Group photo of fellows and facilitators during a GhanaSIG residential training session

Applying Institution

E-Governance and Internet Governance Foundation for Africa (EGIGFA)

Other Participating Institutions

Ghana School on Internet Governance (GhanaSIG); Women in Internet Governance; Internet Governance Club.

Countries and Regions Covered or Involved in the Implementation

Ghana, Zambia, Nigeria, Benin, the United States, and Côte d'Ivoire

GhanaSIG was founded to address Africa's limited representation in global Internet policy forums. By building inclusive digital leadership and empowering emerging African voices, it works to close the digital divide and ensure Africa's active role in shaping the Internet's future.

A Pan-African Model for Inclusive Internet Governance Training

Launched in 2020 by EGIGFA during the global pandemic, GhanaSIG has become a leading Pan-African initiative advancing digital policy education. Combining online learning with in-person training, it equips fellows from government, civil society, academia, and the tech community with the skills to engage in global digital governance. Its hybrid, multi-stakeholder model—supported by partners such as ICANN—has inspired replication in Zambia and other countries.

▲ Image suggestion: Photo of fellows in breakout sessions during a simulation exercise.

▲ Caption: Fellows engage in internet governance policy simulations at GhanaSIG.

A Locally-Led, Stakeholder-Driven Approach to Capacity Development

Unlike externally designed programmes, GhanaSIG is led by African experts who tailor global Internet governance concepts to African realities. Its curriculum integrates issues like cybersecurity, emerging technologies, and digital rights, contextualized for local impact. The programme's innovation lies in its inclusive fellowship model and the creation of a collaborative learning ecosystem that bridges global standards with regional needs, ensuring both relevance and sustainability.

▲ Facilitators delivering lectures or interactive sessions.

▲ GhanaSIG facilitators lead a multi-stakeholder dialogue session.

▲ Video playlist of 2024 and 2025 GhanaSIG activities.

Building Inclusive Digital Leadership for Ghana and Beyond

Since its inception, GhanaSIG has trained over 200 fellows—youth, women, policymakers, and community leaders—from diverse socio-economic backgrounds. Many alumni now hold active roles in international fora such as ICANN, ISOC, IGF, and AFRINIC, ensuring that Africa's perspectives shape global Internet policies. The initiative strengthens human capital for Africa's digital economy while promoting social inclusion by engaging participants from rural and historically underrepresented communities.

▲ Levy Syanseke, a GhanaSIG Fellow who currently runs the ZambiaSIG

▲ Dr. Angela Sulemana, a 2024 GhanaSIG Fellow doing a presentation at the 2024 IGF in Saudi Arabia.

▲ A GhanaSIG Fellow introducing himself during an ICANN meeting in Malaysia. A video

▲ GhanaSIG Fellows participating in various Internet Governance events.

Guangdong and Macao Cooperation: Advancing Cross-border Maritime Data Integration for a Smarter Global Shipping Future

▲ Illustrates the application of data circulation in the Guangdong-Macao Smart Maritime System based on data cyberspace

Applying Institutions

Guangdong Maritime Safety Administration of the People's Republic of China (GDMSA), Marine and Water Bureau (DSAMA) of the Macao Special Administrative Region and China United Network Communications Group Co., Ltd. (China Unicom) Guangdong Branch

Countries and Regions Covered or Involved in the Implementations

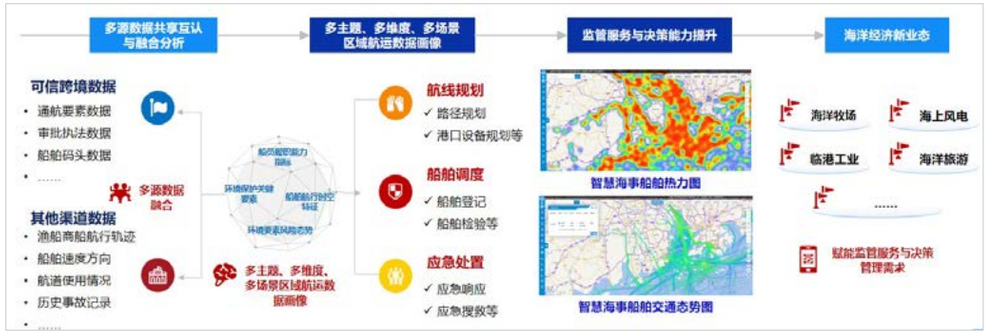
China, Singapore

In the wave of the digital transformation sweeping the global shipping industry, challenges such as the fragmentation of cross-border data, poor data flow, insufficient infrastructure, and low system integration have become increasingly prominent.. These issues constrain the pace of global maritime digitalization, deepen information silos, and complicate ecosystem governance. There is an urgent need to establish mechanisms for cross-border data mutual recognition and intelligent decision-making to accelerate digital development. Against this backdrop, GDMSA, DSAMA, and China Unicom Guangdong Branch jointly launched the Guangdong–Macao Cross-border Maritime Data Cooperation Project, aiming to explore new pathways for international intelligent shipping data governance through institutional coordination and technological innovation, contributing to the sustainable development of the global shipping industry.

Reconstructing a New Governance Order for Global Intelligent Shipping through the Guangdong-Macao Cross-border Maritime Data Mutual Recognition Model

Today, all 190 members of the International Maritime Organization (IMO) are confronted with two core challenges in the digital transformation of the shipping industry: cross-border data barriers and fragmented governance. When vessels enter or leave a port, they must repeatedly submit similar materials to multiple authorities. Due to inconsistent data standards and low system integration among countries, delays and verification conflicts frequently occur, with average anchorage waiting times exceeding 20 hours, causing annual losses of over USD 10 billion. Furthermore, the lack of transparency in key operational data has trapped the global shipping sector in a "low-quality competition," escalating safety risks and operational costs.

The Guangdong-Macao Cross-border Maritime Data Cooperation Project, leveraging the institutional synergy under the "One Country, Two Systems" framework, pioneers a cross-border data mutual trust model based on blockchain and multi-party secure computation. The project enables cross-border sharing and coordinated management of maritime data within China, while extending its best practices internationally, providing a replicable model for partners such as Singapore. By constructing a trustworthy data circulation chain covering the full lifecycle of ships, the project breaks the zero-sum tension between "data sovereignty" and "industrial efficiency," offering an inclusive solution of "rule compatibility and benefit sharing" for international intelligent shipping governance under the IMO framework.



▲ Demonstrates the construction of a linked data model through multi-source data integration of trusted cross-border data and other channel data, forming a multi-topic, multi-dimensional, and multi-scenario regional shipping data profile to serve regulatory services and meet decision-making needs in route planning, vessel scheduling, emergency response, etc.

Validating the Guangdong-Macao Cross-border Maritime Data Circulation Model Through a Trusted Data Space

The project adopts a dual-pronged approach of technical safeguards and institutional innovation, leading the way in verifying and institutionalizing cross-border data sharing, utilization, and collaborative management between Guangdong and Macao. At the technical level, it establishes a digital trust architecture connecting data providers, users, and authorized operators across the Greater Bay Area's maritime sector. This ensures that data providers retain primary control over their data even after cross-border use, significantly lowering cooperation barriers and promoting data sharing and innovation. At the institutional level, a Trusted Data Resource Space has been built, allowing globally vetted data and AI models approved by regulatory authorities to be incorporated. This framework enables bidirectional, conditional, and trustworthy cross-border access and transactions. Within this space, global enterprises and accredited institutions can carry out efficient data utilization and collaborative innovation. A built-in "safety circuit-breaker" mechanism further ensures immediate isolation of potential risks in emergencies, safeguarding system stability and reliability.

▲ illustrates the Smart Maritime System dashboard enabling business interoperability via the trusted data resource space.

Driving Global Intelligent Shipping through the Dual Engines of Institutional Trust and Green Development

The Guangdong-Macao cross-border maritime data cooperation project, guided by government supervision and industry collaboration, has successfully advanced the integrated innovation of management, technology, and operational models. It enables credible traceability and real-time alerts for green indicators such as vessel energy efficiency, carbon emissions, and hazardous cargo status, providing a replicable Chinese paradigm for global maritime data governance and promoting sustained international cooperation.

The Guangdong-Macao experience not only demonstrates the feasibility of cross-standard data circulation, sharing, and openness but also uses data mutual recognition as a linkage to promote the establishment of globally harmonized systems for carbon emission accounting, clean energy application, and ecological protection in the shipping sector. Through the dual drivers of institutional trust and green consensus, this model offers a new pathway for the digital transformation of international shipping, helping all 190 IMO member states transition from "zero-sum competition" to "symbiotic governance," and anchoring a balance between efficiency and equity, growth and sustainability in global intelligent shipping.

▲ Scene of the Launch of the Smart Maritime System (Macao Version) and the Signing Ceremony of the *Cooperation Arrangement on Nautical Charts Production, Exchange, Publication, and Distribution*

Wuhan Initiative on Digital Education Cooperation

▲ The 2025 World Digital Education Conference

Applying Institutions

The Ministry of Education of the People's Republic of China; The People's Government of Hubei Province

Other Participating Institutions

Science and Technology Division, Department of Education of Hubei Province; Educational Informatization Strategy Research Base (Central China), Ministry of Education, PRC; Hubei Institute of Education Digital Research

Countries and Regions Covered or Involved in the Implementation

15 countries and regions such as China, Cambodia, Colombia, Georgia, and the United Kingdom

As artificial intelligence (AI) reshapes education, the 2025 World Digital Education Conference was held in Wuhan, Hubei Province. At the closing ceremony, guest representatives from five continents joined the Vice Governor of Hubei Province to release the "Wuhan Initiative on Digital Education Cooperation", calling for global efforts to promote the intelligent transformation of education and to collaboratively build a more equitable, inclusive and sustainable future for global education.

Fostering Consensus, Establishing an International Collaborative Platform

The 2025 World Digital Education Conference, co-hosted by the Ministry of Education of the People's Republic of China and the People's Government of Hubei Province, attracted leaders, heads of international organizations, representatives of education departments, diplomatic envoys to China, representatives from schools and enterprises, as well as experts and scholars from 87 countries and regions. Representing the host, Hubei joined delegates from five continents to launch the "Wuhan Initiative on Digital Education Cooperation" to the global community, integrating AI into education. The initiative puts forward four propositions, namely "jointly developing digital education standards, sharing high-quality educational resources, promoting the intelligent transformation of education, and safeguarding AI security". These propositions seek to fast-track the implementation of the United Nations' Global Digital Compact, advance progress toward Sustainable Development Goal 4 on education within the 2030 Agenda, and promote multi-stakeholder cooperation on education digitalization worldwide.

▲ The opening ceremony of the 2025 World Digital Education Conference

Charting a New Pathway, Mapping Out a Blueprint for Smart Education

The initiative is designed to address the challenges facing global education, systematically addressing global issues such as equity, quality, technology, and ethics in education.. It proposes an action framework of "jointly developing, sharing, promoting, and safeguarding", emphasizing the role of AI in building educational standard systems. It promotes the deep integration of educational scenarios with large models and explores pathways toward "future teachers, future classrooms, future schools, and future learning centers." In terms of value orientation, the initiative advocates "ethics first, people foremost," incorporating ethical guidelines for AI education, security mechanisms, and regulatory systems into the framework of global cooperation initiatives. This addresses the dual concerns of our era: technological advancement and human well-being. For capacity building, the initiative calls for establishing a cross-border recognition system for teacher competency development, promoting AI education across all academic stages and literacy education for all, and fostering a future-oriented mechanism for cultivating high-level digital talents.

▲ The opening ceremony of the 2025 World Digital Education Conference

Promoting Collaborative Development of Global Education, Building an Educational Community in the Digital Era

The launch of the initiative has not only garnered widespread international attention but also yielded substantive cooperative outcomes. On one hand, the initiative provides policy references and technical pathways for advancing the digitalization of education in developing countries, enhancing the popularity and accessibility of digital education on a global scale. On the other hand, driven by the initiative and supported by the conference platform, universities in Hubei have signed 14 international education exchange agreements with foreign counterparts, jointly established four Sino-foreign cooperative institutions, and facilitated the implementation of four Sino-foreign cooperative projects. Among these, the joint establishment of the China-Russia Digital Education Center by Central China Normal University and Moscow City Pedagogical University (Russia), and the launch of a master's program in AI by Wuhan University of Technology in collaboration with EFREI (France), are transnational cooperation cases of how AI empowers education. These achievements have fostered a more open and diverse ecosystem for digital education collaboration, accelerating the dissemination of the concept of smart education.

▲ Representatives from five continents joined the Vice Governor of Hubei Province to release the "Wuhan Initiative on Digital Education Cooperation" at the closing ceremony

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