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2026 携手构建网络空间命运共同体实践案例集

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

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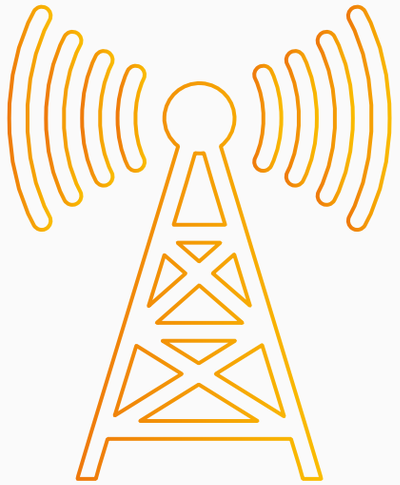
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网络基础设施建设
Internet Infrastructure Construction

加快全球网络基础设施建设,促进互联互通

Accelerating the Building of Global Internet Infrastructure for Greater Connectivity





精品案例

构筑安全韧性全球组网新基座，赋能“一带一路”智慧工程新生态

Building a Secure and Resilient Global Networking Foundation to Empower the Smart Engineering Ecosystem of the Belt and Road Initiative



▲ 依托云联网构筑“一带一路”高韧性全球一张网，赋能国际智慧工程建设。
Build a new resilient global-network foundation, empower a new ecosystem of the Belt and Road smart-engineering initiatives

申报机构
Applying Institution

中国联合网络通信集团有限公司
China United Network Communications Group Co., Ltd.

中国化学工程集团有限公司
China National Chemical Engineering Group Corporation Ltd.

其他参与机构
Other Participating Organizations

中国联通国际有限公司
China Unicom Global Limited

联通数字科技有限公司
China Unicom Digital Technology Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

赞比亚、安哥拉、俄罗斯、哈萨克斯坦、印尼、沙特阿拉伯
Zambia，Angola，Russia，Kazakhstan，Indonesia，Saudi Arabia

全球产业链重构与数字化转型下，跨国工程企业的网络连通能力至关重要。中国联通携手中国化学工程，依托云联网搭建全球骨干网，以化学云为枢纽，覆盖全球分支及偏远项目点，实现与总部同质化的高韧性接入，形成支撑"一带一路"的"全球一张网"，让不同发展水平的站点平等共享网络红利。

Against the backdrop of global industrial chain restructuring and advancing digital transformation, network connectivity for multinational engineering enterprises has become critical. China Unicom, in partnership with CNCEC, has leveraged CloudBond to build a global backbone network centered on the Chemical Cloud, extending to international branches and remote project sites. It delivers the same high-resilience network access as headquarters, forming a "Global One Network" that supports Belt and Road smart engineering, enabling project sites at different development levels to equally access global digital infrastructure and share the dividends of connectivity.

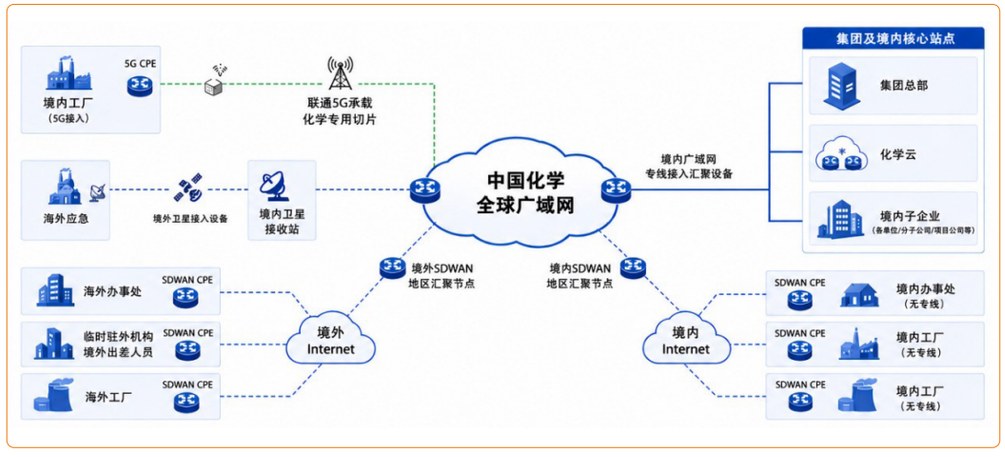
共建共享全球化组网架构，深度赋能全场景数字化协同

A Co-Built and Shared Global Networking Architecture, Empowering Full-Scenario Digital Collaboration

中国联通为中国化学工程量身打造了“一总部一核心双出口”集约化组网方案，实现中国国内业务统一标准接入与安全防护，并通过5G专网和SDWAN弹性覆盖临时项目部。目前，中国近2000个项目工地正持续接入视频监控，实现可视、可管、可控，国际场景是本次建设的重点突破方向。中国联通通过全球云联网方案整合4G/5G、卫星、跨境SDWAN等多种接入方式，实现跨洲际统一网络接入与安全收敛。无论是在中东的石化项目现场，还是东南亚的基建工地，项目人员均可通过可信身份认证快速接入集团内网，享受与总部同质化的网络体验，大幅提升全球工程数据回传效率，将安全管理策略延伸至全球每一个作业终端。

China Unicom has tailored a centralized "One Headquarters, One Core, Dual Egress" networking solution for CNCEC, enabling unified domestic service access and protection with 5G private networks and SD-WAN flexibly covering temporary project sites. Currently, nearly 2,000 project sites across China are continuously connected to video surveillance, achieving full visibility, manageability, and control.

Global scenarios represent a key breakthrough area. Through its international CloudBond solution, China Unicom integrates multiple access methods: including 4G/5G, satellite, and cross-border SD-WAN to enable unified intercontinental network access and security convergence. Whether at petrochemical project sites in the Middle East or infrastructure construction sites in Southeast Asia, personnel can rapidly access the group's intranet through trusted identity authentication, enjoying the same network experience as headquarters, significantly improving international project data backhaul efficiency, and extending security management policies to every operational terminal worldwide.



▲ 全球组网网络结构拓扑图 / Global Networking Topology Diagram

首创“MV广域网+安全收敛”融合架构，打造工程行业全球组网技术标杆

Pioneering the "MV WAN+Security Convergence" Integrated Architecture, Setting a Global Networking Technology Benchmark for the Engineering Industry

中国联通云联网方案在传统运营商级骨干网络QoS保障基础之上，通过叠加SDWAN方案实现多路径智能调度能力，利用全球骨干专线确保跨国传输低时延与高可靠性的同时实现了组网灵活性。在中国国内，构建双互联网统一出口实现全集团流量统一清洗与安全检测，减少了分支机构网络的互联网暴露风险；在国际方面，加密隧道与智能选路能力可动态规避国际出口拥堵节点，保障跨境访问稳定体验。

在安全层面，构建“云-管-端”立体防护体系：互联网出口机房部署下一代防火墙及零信任平台，所有分支机构及国际现场流量须经统一认证审计；移动办公与临时项目部采用轻量化安全客户端，实现设备指纹识别与动态策略下发。该设计使对外暴露面大幅缩减，内部威胁可追溯、可阻断。

China Unicom's CloudBond solution builds upon traditional SD-WAN by adding carrier-grade backbone QoS guarantees and multi-path intelligent scheduling capabilities. This preserves networking flexibility while leveraging global backbone dedicated lines to ensure low-latency and highly reliable cross-border transmission. In China, dual-egress data centers enable centralized traffic scrubbing and security inspection for the entire group, eliminating local exposure risks at branch offices. Globally, encrypted tunnels and intelligent path selection dynamically avoid congested international egress nodes, ensuring a stable cross-border access experience.

On the security front, a "Cloud-Network-Device" three-dimensional protection system has been established: next-generation firewalls and a zero-trust platform are deployed at the internet egress data centers, requiring all traffic from branches and international sites to undergo unified authentication and auditing. Mobile offices and temporary project sites adopt lightweight security clients that enable device fingerprinting and dynamic policy delivery. This design significantly reduces the external attack surface while making internal threats traceable and blockable.



◀ 安哥拉洛比托石油项目部网络测试
Global Networking Topology Diagram

提升全球工程协作效能，推动建立普惠包容的跨国数字新秩序

Enhancing Global Engineering Collaboration Efficiency and Promoting an Inclusive, Equitable Cross-Border Digital Order

中国联通云联网方案取得显著成效。成本方面，相比传统跨国专线，国际分支接入成本降低约40%。效率层面，全球项目工地视频实时回传至调度中心，现场问题响应效率提升50%以上，跨国设计文件传输、BIM模型协同与远程专家会诊得以流畅开展，有力支撑“一带一路”项目高质量交付。

社会层面，全球属地员工可安全接入总部培训资源，数字鸿沟显著缩小，不同国籍的建设者得以同频成长；总部实时掌握全球现场实况，实现"天涯若比邻"的情感直达，提升驻外人员归属感。全球治理层面，这套"高韧性、低成本、可复制"的组网范式，为跨国运营提供了成熟经验，方案不设技术壁垒、尊重各国数据主权，以共建共享推动平等互利的数字合作新秩序。

China Unicom's CloudBond solution has delivered remarkable results. In terms of cost, international branch access costs have been reduced by approximately 40% compared to traditional cross-border dedicated lines. In terms of efficiency, real-time video feeds from global project sites are transmitted to the dispatch center, improving on-site issue response efficiency by over 50%. Cross-border design file transfers, BIM model collaboration, and remote expert consultations now proceed seamlessly, strongly supporting the high-quality delivery of Belt and Road projects.

On the social front, international local employees can securely access headquarters' training resources, significantly narrowing the digital divide and enabling colleagues of different nationalities to grow together. Headquarters can monitor international site conditions in real time, achieving a sense of "intimacy across the miles" and enhancing the sense of belonging among international personnel. At the global governance level, this "high-resilience, low-cost, and replicable" networking paradigm offers proven experience for multinational operations. It imposes no technological barriers, respects each country's data sovereignty, and promotes a new order of equal and mutually beneficial digital cooperation through co-construction and shared development.

精品案例

尼日利亚农村能网一体化互联网基础设施建设项目

Nigeria Rural Energy-Connectivity Integrated Internet Infrastructure Project





▲ 能源与数字基础设施融合，赋能尼日利亚农村医疗、清洁用水、生计与妇女参与。
Integrated energy and digital infrastructure transforming rural Nigeria by powering healthcare, clean water, livelihoods, and women's participation.

申报机构
Applying Institution

尼日利亚农村电气化局（REA）
Rural Electrification Agency of Nigeria (REA)

其他参与机构
Other Participating Organizations

银河骨干网有限公司（GBB）；尼日利亚联邦通信、创新与数字经济部；尼日利亚通信委员会（NCC）；华为技术有限公司；欧洲联盟驻尼日利亚和西非国家经济共同体代表团；丹麦驻尼日利亚大使馆；韩国驻尼日利亚大使馆；德国驻尼日利亚大使馆；南非驻尼日利亚高级专员公署；世界银行集团

Galaxy Backbone Limited (GBB); Federal Ministry of Communications, Innovation and Digital Economy; Nigerian Communications Commission (NCC); Huawei Technologies Co., Ltd.; European Union Delegation to Nigeria and ECOWAS; Royal Danish Embassy in Nigeria; Embassy of the Republic of Korea in Nigeria; Embassy of the Federal Republic of Germany in Nigeria; South African High Commission in Nigeria; World Bank Group

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

尼日利亚、中国、韩国、德国、南非共和国、丹麦
Nigeria, China, South Korea, Germany, Republic of South Africa, Denmark

尼日利亚面临双重挑战：8500万民众缺乏电网电力，77%的农村社区没有互联网。没有电力，数字基础设施无法运转；没有互联互通，电气化无法推动转型。本案例聚焦网络基础设施建设，展示能源与网络一体化模式如何打造包容、韧性的数字基础设施，加速全球互联互通，弥合数字鸿沟。

Nigeria faces a dual crisis: 85 million citizens lack grid electricity, and 77% of rural communities have no internet. Without power, digital infrastructure cannot function; without connectivity, electrification cannot drive transformation. This case addresses Internet Infrastructure Construction, demonstrating how an integrated energy-connectivity model builds inclusive, resilient digital infrastructure that accelerates global inter-connectivity and bridges the digital divide.

尼日利亚农村能源互联一体化部署，打造普惠包容的全球互联网基础设施

Integrated Energy-Connectivity Deployment in Rural Nigeria Building Inclusive Global Internet Infrastructure.

尼日利亚是非洲人口最多的国家，也是全球能源接入赤字最大的国家之一——8500万民众缺乏电网电力，77%的农村社区仍处于离线状态。尼日利亚农村电气化局（REA）开创了电气化、数字互联互通与技能发展一体化的变革性模式，而非孤立部署。

国际合作是核心支撑。中国（华为技术有限公司）提供农村网络解决方案与数字技能支持。韩国通过官方发展援助在联邦首都区落地1兆瓦能源项目，铺设19公里配电网络覆盖5000户家庭。欧洲联盟与丹麦承诺1100万欧元支持“300万技术人才计划”（3MTT）。德意志联邦共和国依托3MTT计划提供技术援助与知识交流。南非共和国作为区域知识伙伴，分享农村数字包容最佳实践。世界银行资助7.5亿美元DARES计划——全球最大公共可再生能源扩容项目，目标1350座微电网覆盖1750万尼日利亚人。2025年7月，REA与尼日利亚国有通信运营商银河骨干网签署里程碑式备忘录(MoU)，推动全国774个地方政府区域宽带全覆盖。

Nigeria, Africa's most populous nation, has one of the world's largest energy access deficits; 85 million citizens lack grid electricity, and 77% of rural communities remain offline. The Rural Electrification Agency (REA) has pioneered a transformative model that integrates electrification, digital connectivity, and skills development as a unified system, rather than deploying them as isolated interventions.

International cooperation is the cornerstone. China (Huawei Technologies) provides rural connectivity solutions and digital skills support. South Korea delivered a 1MW ODA energy project in the Federal Capital Territory, including 19 km of distribution networks serving 5,000 households. The European Union and Denmark have committed €11 million to the 3 Million Technical Talent (3MTT) digital skills programme. The Federal Republic of Germany contributes technical assistance and knowledge exchange under 3MTT. The Republic of South Africa serves as a regional knowledge partner, sharing best practices in rural digital inclusion. The World Bank backs the $750 million DARES programme; the world's largest public renewable energy scale-up, targeting 1,350 mini-grids to electrify 17.5 million Nigerians. In July 2025, REA signed a landmark MoU with Galaxy Backbone (Nigeria's state-owned connectivity provider) to achieve broadband coverage across all 774 Local Government Areas.



▲ REA与银河骨干网签署里程碑式备忘录（MoU），整合能源与宽带基础设施，覆盖尼日利亚774个地方政府区域。
REA and Galaxy Backbone sign a landmark MoU to integrate energy and broadband infrastructure across Nigeria's 774 Local Government Areas.

三层架构“连接即服务”模式，推动能源资产向数字基础设施平台升级

Three-Layer "Connectivity-as-a-Service" Model Transforming Energy Assets into Digital Infrastructure Platforms.

核心创新在于将能源基础设施定位为数字赋能载体。第一层部署搭载物联网远程监测系统的太阳能混合微电网，实时采集发电、用电与设备运行数据，支撑预测性运维、降低运营成本。卡杜纳州Damau社区100千瓦峰值微电网现为家庭、小企业和水井供电，惠及2500居民。第二层通过REA与银河骨干网合作，在微电网站点共址铺设光纤与无线基站，打造“连接即服务”模式——每新增一处电力接入点同步成为互联网接入节点，开创尼日利亚农村建设先河。第三层通过3MTT计划嵌入数字技能培训（已培训30万人），并配套冷库、碾磨机、焊接设备等生产性用能设备融资，让网络连接直接转化为增收动能。

与单一电气化或独立互联网项目的碎片化逻辑不同，本模式从设计之初就将能源与数字基础设施作为统一系统统筹推进，具备强可复制性。这一创新吸引了中国、韩国、德国、南非及欧洲多国技术伙伴参与，印证了其全球推广价值。

The innovation lies in treating energy infrastructure as a digital enabler. Layer 1 deploys solar hybrid mini-grids equipped with IoT-enabled remote monitoring systems that collect real-time data on generation, consumption, and equipment health; supporting predictive maintenance and reducing operational costs. In Damau, Kaduna State, a 100 kWp mini-grid now powers households, small businesses, and a borehole serving 2,500 residents. Layer 2 co-locates fiber and wireless base stations alongside mini-grids via the REA-Galaxy Backbone partnership, creating a "Connectivity-as-a-Service" model; every new energy connection simultaneously becomes an internet access point, pioneering a new approach for rural Nigeria. Layer 3 integrates digital skills training through the 3MTT programme (already training 300,000 Nigerians) and provides Productive Use Equipment financing (cold storage, milling machines, welding equipment), transforming connectivity into income-generating opportunities.

Unlike fragmented standalone electrification or isolated internet projects, this model from its inception treats energy and digital infrastructure as a unified system. It is highly replicable: smart grid data informs connectivity planning, and broadband costs are shared across energy sector budgets. This innovation has attracted technical partners from China, Korea, Germany, South Africa, and Europe, confirming its global scalability.



◀ 卡杜纳州Damau社区100千瓦峰值太阳能微电网：为家庭、企业和水井供电，惠及2500居民。
The 100 kWp solar mini-grid in Damau, Kaduna State: powering households, businesses, and a borehole serving 2,500 residents.



◀ 有电社区的农村企业家使用太阳能设备开展生产性活动：将互联互通转化为经济机会
Rural entrepreneurs in a connected community use solar-powered equipment for productive activities: transforming connectivity into economic opportunity.

经济提质与社会包容成效可量化，为全球互联网基建提供可规模化范本

Quantifiable Economic and Social Inclusion Outcomes Providing a Scalable Blueprint for Global Internet Infrastructure Development.

项目成效可验证、可追溯。电力覆盖：已连通25万户农村家庭；仅联邦首都区铺设19公里配电网络覆盖5000户。全国已有900余座微电网投运。网络覆盖：9个此前无网络服务的地方行政区实现宽带接入；500余个社区同步用上电力与互联网。经济效益：通网社区家庭平均收入提升34%；3MTT计划创造超1.5万个就业岗位；为1万名农村创业者配套生产性用能设备。

项目深度内嵌包容发展理念。太阳能供水井缓解缺水难题，直接惠及妇女儿童。学校延长晚间学习时长，罗博奇地区一位校长表示：“此前每天下午6点教学就被迫中断，如今已彻底改变。”基层医疗机构实现24小时运转并具备远程医疗服务能力。3MTT计划累计报名180万人，女性参与者占比突出。

规模化稳步推进：尼日利亚已批准20亿美元专项资金，用于铺设9万公里光纤、新建3700座农村通信基站及部署卫星通信。这一体化模式为非洲、亚洲、拉美等发展中经济体提供务实、低成本的实践蓝本，切实助力构建普惠包容的全球互联网基础设施。

Project outcomes are verifiable and traceable. Energy access: 250,000 rural households connected; 19 km of distribution networks installed in the Federal Capital Territory alone, serving 5,000 households. Over 900 mini-grids are already operational nationwide. Connectivity: Nine previously unserved Local Government Areas now have broadband access; over 500 communities have simultaneous electricity and internet. Economic impact: Average household income in connected communities increased by 34%; the 3MTT programme has created over 15,000 jobs; and 10,000 rural entrepreneurs have received Productive Use Equipment financing.

Inclusiveness is embedded throughout. Solar-powered boreholes alleviate water scarcity - directly benefiting women and children. Schools have extended evening study hours. As one principal in Robochi stated: "Learning effectively ended at 6 p.m. every day, but this has now completely changed". Primary healthcare centers now operate 24/7 with telemedicine capacity. The 3MTT programme has registered 1.8 million applicants, with strong female participation.

Scalability is progressing steadily: Nigeria has approved $2 billion for 90,000 km of fiber deployment, 3,700 new rural telecommunications towers, and satellite communications for remote areas. This integrated model offers a practical, low-cost blueprint for developing economies across Africa, Asia, and Latin America - actively contributing to building inclusive global Internet infrastructure.



▲ 尼日利亚农村学校的学生如今可以在日落之后继续学习——可靠的电力与互联网接入带来了改变
Students in a rural Nigerian school now study well past sunset; transformed by reliable electricity and internet access.



▲ 农村基层医疗机构现可24/7运转，配备太阳能设备和远程医疗能力——服务此前与医疗隔绝的社区。
A rural primary healthcare center now operates 24/7 with solar-powered equipment and telemedicine capacity; serving communities previously cut off from medical care.

AII与5G-ACIA国际协同——工业5G联合测试床、联合出版物与全球开放日合作实践

International Collaboration between AII and 5G-ACIA: Joint Industrial 5G Testbed, Joint Publication ,and Industrial 5G Day Practice



▲ 工业互联网产业联盟（AII）与全球5G工业与自动化联盟（5G-ACIA）：共建全球工业 5G 生态
The Alliance of Industrial Internet (AII) and the 5G Alliance for Connected Industries and Automation (5G ACIA): Building a Global Industrial 5G Ecosystem

申报机构
Applying Institution

中国信息通信研究院（CAICT）
China Academy of Information and Communications Technology (CAICT)

其他参与机构
Other Participating Organizations

工业互联网产业联盟（AII）
Alliance of Industrial Internet

全球5G工业与自动化联盟（5G-ACIA）
5G Alliance for Connected Industries and Automation

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖东亚、北美、欧洲等多个地区
Covering multiple regions including East Asia, North America, and Europe

全面推进新一代信息基础设施建设，共同推进跨区域研究项目，完善空间信息基础设施；加强新一代信息通信技术领域的国际合作，并促进所有相关方的积极参与，在经济与技术领域取得显著成效。

Comprehensively advance new-generation information infrastructure, jointly push forward cross-regional research projects, and improve spatial information infrastructure. By strengthening international cooperation in new-generation ICT and increasing the participation of all stakeholders, it aims to deliver significant gains in economic and technological terms.

两大联盟组织围绕工业5G开展长期跨区域合作

Long-term Cross-regional Cooperation Between Two Major Industrial Communication Alliances for Industrial 5G

全球制造业数字化转型存在ICT与OT技术标准割裂、跨国验证环境缺失、产业经验难以互通等痛点。中国信息通信研究院（CAICT）牵头工业互联网产业联盟（AII）与全球5G工业与自动化联盟（5G-ACIA） 建立长期战略合作机制，聚焦以下三个维度：测试与验证、专题研究以及产业交流，推动工业5G应用的全球部署。

The digital transformation of global manufacturing is still hampered by pain points, including fragmented ICT and OT technical standards, lack of cross-border verification environments, and insufficient exchange of industrial experience. Led by the China Academy of Information and Communications Technology (CAICT), the Alliance of Industrial Internet (AII) has established a long-term strategic cooperation mechanism with the 5G Alliance for Connected Industries and Automation (5G-ACIA), a global alliance for Industrial 5G. The two sides carry out regular international collaboration focusing on three dimensions— testing and verification, thematic research, and industrial exchange—to advance global deployment of Industrial 5G applications.



▲ 2024年9月在北京举办的 5G-ACIA“2024 工业5G日”活动期间，AII与 5G-ACIA开展双边交流。
During the 5G-ACIA “Industrial 5G Day 2024” in Beijing in September, discussions between AII and 5G-ACIA took place.



▲ 2023年AII与5G-ACIA签署合作条款协议
In 2023, AII and 5G-ACIA signed cooperation agreement.

建立双边常态化合作机制

Establish a Regular Bilateral Cooperation

2020年，AII与5G-ACIA签署战略合作谅解备忘录，CAICT依托AII统筹建设中国工业互联网产业生态，5G-ACIA依托全球自动化产业生态，构建双边协同工作组，携手打造成熟完善的全球工业5G生态。项目创新构建“测试验证+报告输出+产业交流”三位一体国际协同实施路径。

一是共建双边认证联合测试床。2024年发布首批“5G+工业互联网”联合测试床，分别面向工业PLC控制、5G-A无源物联网场景，统一双边测试床申报流程与规则，实现测试结果跨境互认，降低企业跨国验证成本；二是联合编制中英双语产业出版物。双方依托“5G+工业互联网”相关工作组，联合编写《5G Advanced（5G-A）在工业场景中的技术演进与应用实践》，融合中国规模化落地经验与欧洲工业自动化标准，输出兼顾发展中国家与发达国家需求的技术指引；三是共同举办工业5G开放日系列活动。双方在北京、法兰克福、上海等地轮流举办线下开放活动，搭建全球企业现场成果展示、技术对标、供需对接平台，同步开展线上全球直播，面向全球产业界开放技术成果。

In 2020, AII and 5G-ACIA signed a Memorandum of Understanding on strategic cooperation. CAICT, relying on AII, coordinates China's industrial internet ecosystem, and 5G-ACIA, relying on the worldwide industrial automation ecosystem—jointly established a cooperation to build a successful global Industrial 5G ecosystem.

First, joint construction of bilateral certification testbeds. The first batch of 5G+Industrial Internet joint testbeds is scheduled to launch in 2024, targeting industrial PLC control and 5G-A passive IoT scenarios respectively. This initiative will standardize the application procedures and rules for bilateral testbeds, achieve cross-border mutual recognition of test results, and reduce the costs of cross-border validation for enterprises.

Second, joint production of bilingual (Chinese–English) industry publications.Drawing on relevant 5G Industrial Internet working groups, the two sides will co-author Technical Evolution and Application Practices of 5G Advanced (5G-A) in Industrial Scenarios, integrating China’s experience in large-scale implementation with European industrial automation standards to produce technical guidelines that cater to the needs of both developing and developed countries.

Third, joint organization of Industrial 5G Open Days. In-person events on a rotating basis in Beijing, Frankfurt, Shanghai and other locations to establish a platform for Chinese and foreign enterprises to conduct on-site demonstrations, technical benchmarking and supply-demand matching, while simultaneously broadcasting these events globally online to share technical achievements with the international industry community.



▲ AII与5G- ACIA于2024年9月在北京举行的5G- ACIA工业5G日上发布联合测试床。
AII and 5G-ACIA released the joint testbed at the 5G-ACIA Industrial 5G Day in Beijing in September 2024.



▲ 2026年9月，在上海举行的5G- ACIA全球开放日活动上，AII与5G-ACIA 共同发布工业5G-Advanced联合出版物。
At the 5G-ACIA Industrial 5G Day in Shanghai in September 2026,AII and 5G-ACIA released a joint publication on Industrial 5G-Advanced.

赋能全球工业数字化普惠升级，创造产业、技术、国际合作多重价值

Empower Inclusive Global Industrial Digital Upgrading and Generate Multi-dimensional Industrial, Technical and International Cooperation Values

本项目产生显著全球普惠价值。产业层面，联合测试床服务于全球制造企业与通信企业，在数字化转型进程中，加速5G工业控制、5G-A无源物联网等新技术全球商业化落地；技术层面，联合出版物成果与3GPP国际标准化组织研究内容对齐，综合东西方工业技术诉求，引领全球5G-A技术升级与工业落地应用，弥合发达与发展中经济体数字技术鸿沟；国际合作层面，5G-ACIA举办的工业5G开放日累计吸引全球超千名行业专家参与，搭建中欧数字经济常态化交流窗口，推动发展中经济体借鉴中国5G规模化应用实践、欧洲先进工业自动化技术，助力落实联合国2030可持续发展工业化目标。

在2026年9月3日举办的“5G+工业互联网”开放日活动上，AII与5G-ACIA共同发布了联合出版物《5G Advanced 在工业领域技术演进与应用》，本次活动展示了“5G+工业互联网”铸链计划相关产品测试验证和全球推广情况，并针对其中的典型实践颁发技术验证证书。项目以开放包容的跨国产业协作，推动数字技术普惠共享，为全球数字经济协同繁荣提供可借鉴的双边合作范式，助力构建网络空间命运共同体。

This project delivers remarkable inclusive benefits worldwide.

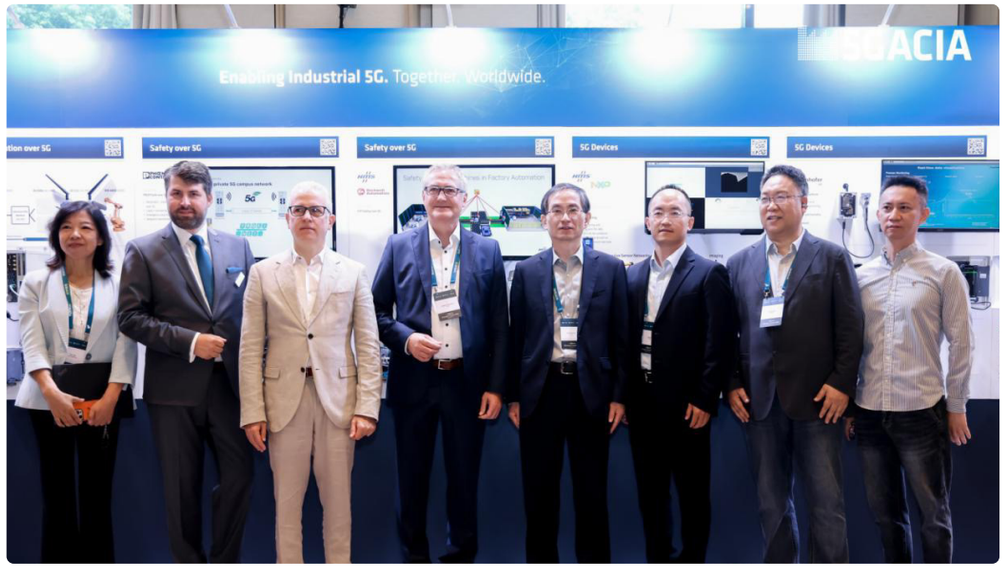
From an industrial perspective, the joint testbeds have served manufacturing and communication enterprises in worldwide, accelerating the global commercialization of emerging technologies such as Industrial 5G control and 5G-A passive IoT in the process of digital transformation.

From a technical perspective, the outputs of joint publications are aligned with the research work of 3GPP, integrating the technical demands of industrial sectors worldwide. The joint results guide global 5G-A technical upgrading and industrial deployment, bridging the digital divide between developed and developing economies.

From an international cooperation perspective, 5G-ACIA’s 5G Days have attracted over 1,000 industry experts globally including from AII. They create a regular exchange window for digital economy dialogue between regions. The participation of AII at these events helps developing economies learn from China‘s large-scale 5G application practices and worldwide advanced industrial automation technologies, supporting the industrialization targets under the UN 2030 Sustainable Development Agenda.

At the"5G-ACIA Industrial 5G Day” held on 3 September 2026, AII and 5G ACIA jointly released the joint publication “Technical Evolution and Application of 5G-Advanced in Industrial Scenarios”. The event showcased product testing, verification and global outreach progress. During the 5G-ACIA Plenary meeting, certificates for outstanding representative practices were presented.

Through open and inclusive cross-border industrial collaboration, the project promotes exchange on digital technologies, offers a replicable bilateral cooperation model for coordinated prosperity of the global digital economy, and contributes to building a community with a shared future in cyberspace.



▲ 2026年“5G+工业互联网”开放日期间，AII 和 5G-ACIA 共同参观全球工业 5G 产品展示墙
During the 2026 5G-ACIA Industrial 5G Day, AII and 5G-ACIA jointly visited the global 5G-ACIA Industrial 5G Demo Wall.



▲ AII和5G-ACIA共同介绍“5G+工业互联网” 铸链计划技术验证情况
AII and 5G ACIA jointly presented the testing, verification and global outreach progress

网智融合创新实践：引领全球网络与智能基础设施融合发展

Innovative Practices in Network-Intelligence Convergence: Leading the Integration of Global Network and Intelligent Infrastructure



▲ GTI引领网智融合创新发展
GTI Advancing Global Innovation in Network-Intelligence Convergence

申报机构

Applying Institution

全球新一代信息通信技术合作组织
Global Technology Association of InfoComm (GTI)

其他参与机构

Other Participating Organizations

中国移动、Arm、Arete M、Bharti Airtel、中信科、爱立信、GSMA、Globe Telecom、华为、英特尔、Keysight、LGU+、Linux基金会、联发科、MTN集团、诺基亚、Omdia、PCCW-HKT、高通、Qorvo、R&S、三星、Salt、Turkcell、Turk Telecom、VIAVI、YTL、Zain、中兴

China Mobile, Arm, Arete M, Bharti Airtel, CICT, Ericsson, GSMA, Globe Telecom, Huawei, Intel, Keysight, LGU+, Linux Foundation, Mediatek, MTN Group, Nokia, Omdia, PCCW-HKT, Qualcomm, Qorvo, R&S, Samsung, Salt, Turkcell, Turk Telecom, VIAVI, YTL, Zain, ZTE

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国、英国、德国、西班牙等20个国家和地区

Covering 20 countries and regions including China, the United States, the United Kingdom, Germany, Spain

随着AI加速产业应用，移动通信网络向智能基础设施演进。GTI作为全球信息通信领域重要合作平台，率先推动5G-A/6G与AI深度融合，以“网智融合”推动传统网络向智能网络升级，助力全球互联互通与智能连接发展提供支撑。

As artificial intelligence accelerates its adoption across industries, mobile networks are evolving into intelligent infrastructure. As a leading global cooperation platform in the ICT sector, GTI has taken the lead in advancing the deep integration of 5G-A/6G and AI. Through its vision of network-intelligence convergence, GTI is driving the transformation of traditional networks into intelligent networks, enabling global connectivity, intelligent connectivity, and digital development.

汇聚全球产学研力量，共筑网智融合国际合作生态

Uniting Global Stakeholders to Advance International Collaboration in Network-AI Convergence

GTI与中国移动携手400余家国际运营商及产学研合作伙伴，面向全球率先布局5G-A/6G与AI融合创新，推动构建开放协同的国际产业生态。2024年，GTI启动“5G-A×AI融通发展项目”，吸引欧、美、亚等区域20余家运营商及合作伙伴参与，促进5G与AI在技术、业务、生态、商业等领域融合发展。2025年，GTI联合30余家国际产业伙伴发布“5G-A×AI百大商用计划”，加速商用化进程；联合ITU、中国移动及全球合作伙伴发布“6G开放试验装置”， 首批吸引30余家产学研合作伙伴入驻，赋能6G国际产业生态发展。同时，GTI提出移动智能融合发展指数（MI3），形成量化动态评估体系，为全球数智产业提供“通用标尺”。2026年，GTI与GSMA联合30余家国际运营商及合作伙伴发布《Mobile AI》白皮书，为移动通信与人工智能深度融合构建清晰框架；成立GTI-GSMA Mobile AI工作组，共促网智融合产业潜力释放与价值实现。

Together with China Mobile and more than 400 international operators and industry partners worldwide, GTI has taken the lead in advancing global innovation on the integration of 5G-A/6G and artificial intelligence, fostering an open and collaborative international industry ecosystem.

In 2024, GTI launched the global "5G-A×AI Development Program", attracting more than 20 operators and ecosystem partners from Europe, North America, and Asia to participate in joint innovation, and promoting the integration of 5G and AI across technology, business, ecosystem, and commercialization. In 2025, GTI, together with China Mobile and more than 30 international industry partners, launched the “5G-A×AI 100 Commercial Campaign” to accelerate commercialization. In the same year, GTI, ITU, China Mobile, and global partners jointly launched the 6G Open Testbed, which attracted more than 30 industry, academic, and research partners in its first phase, empowering the development of the global 6G industry ecosystem.

Meanwhile, GTI introduced the Mobile Intelligence Integration Index (MI3), establishing a quantitative and dynamic evaluation framework that provides a common benchmark for the global digital intelligence industry. In 2026, GTI and GSMA jointly released the “Mobile AI” White Paper, with support from more than 30 international operators and ecosystem partners, providing a clear framework for the deep integration of mobile communications and artificial intelligence. GTI and GSMA also established the Mobile AI Working Group to jointly promote industrial collaboration, accelerate innovation, and unlock the potential and value of network-intelligence convergence.



▲ GTI联合30余家合作伙伴发布“5G-A×AI百大商用计划”，加速融合创新与全球商用
GTI and 30+ global partners launch the “5G-A×AI 100 Commercial Campaign” to accelerate network-AI convergence and global deployment



▲ 全球技术与产业专家齐聚巴塞罗那，共研5G-A×AI融合技术、共商应用实践与产业合作，推动网智融合创新发展
Global technology and industry leaders convene in Barcelona to advance 5G-A × AI innovation, applications, and ecosystem collaboration

构建网智融合发展新体系，探索开放协同创新新路径

Innovating New Frameworks and Collaborative Models for Network–AI Convergence

本案例创新提出“网络×AI”双向赋能发展路径，推动网智融合协同创新，促进传统通信基础设施向网智融合基础设施升级。实施途径五方面：一是树旗帜，聚共识。面向全球发布“5G-A×AI融通发展项目”，启动“5G-A×AI百大商用计划”，发挥中国大规模网络优势，树立起网智融合发展的新旗帜。二是建装置，促创新。布局亚、欧、美三洲8个开放实验室，发布“6G开放试验装置”，为全球伙伴提供技术研究和场景验证的基础设施环境。三是建框架，定标尺。创新提出“三层四维”Mobile AI体系架构、MI3指数及智能应用体验评估体系两大标尺，为网智融合创新发展指明方向。四是识需求，出方案。发布50本研究报告、解决方案和创新产品，为产业数智化升级提供实践路径。五是搭平台，扩影响。依托上海、香港、巴塞罗那、日内瓦等系列活动，构建全球产学研交流合作平台，推动技术、人才、资本和创新资源跨国流动。

The core innovation of this practice case lies in pioneering a “Network×AI” two-way empowerment pathway, driving collaborative innovation in Network-Intelligence Convergence and accelerating the transformation of traditional communications infrastructure into intelligent network infrastructure. The implementation approach consists of five key dimensions:

- Building a Vision and Forging Consensus: GTI launched the global "5G-A×AI Development Program" and initiated the “5G-A×AI 100 Commercial Campaign”, leveraging China’s large-scale network advantages to establish a new global vision and consensus for Network-Intelligence Convergence development.

- Providing Environment and Advancing Innovation: GTI has established eight open laboratories across Asia, Europe, and the Americas and launched the “6G Open Testbed”, providing global partners with an open environment for technology research and scenario validation.

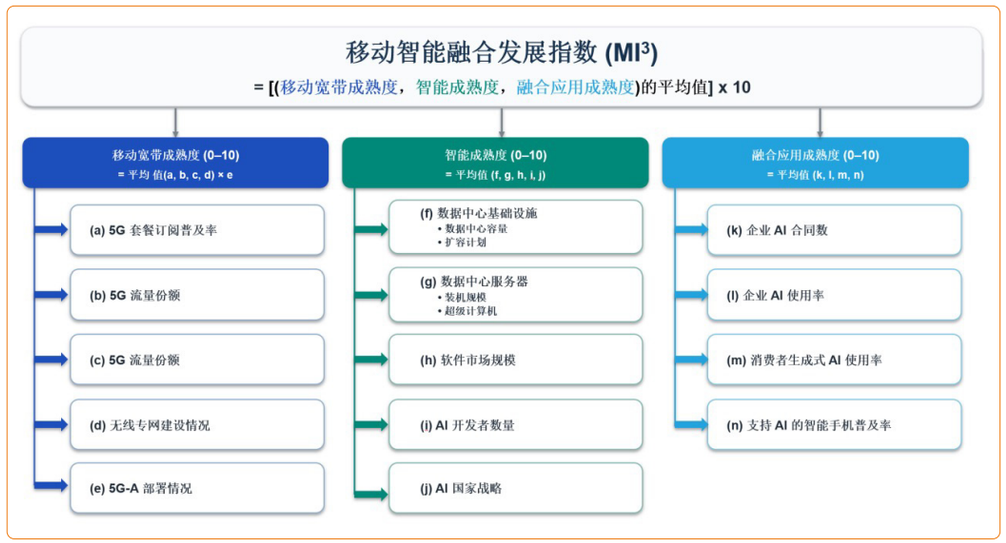
- Creating Frameworks and Defining Benchmarks: GTI proposed the framework of “Three-Layer, Four-Dimension Architecture of Mobile AI”, and introduced the MI3 Index and the Mobile AI Application Experience Metrics as two key benchmarks, providing clear guidance for innovation and development in Network-Intelligence Convergence.

- Identifying Needs and Delivering Solutions: GTI has released 50 research reports, solution frameworks, and innovative products, providing practical pathways for the digital and intelligent transformation of industries.

- Building Platforms and Expanding Influence: Through a series of global events in Shanghai, Hong Kong, Barcelona, and Geneva, GTI has established an international exchange and cooperation platform connecting industry, academia, research, and application stakeholders, promoting the cross-border flow of technology, talent, capital, and innovation resources.



▲ Mobile AI技术图谱 / Mobile AI Innovation Technology Map



▲ 移动智能融合发展指数（MI3）2026评估模型 / MI3 2026 Modeling Approach

释放网智融合协同价值，赋能全球数智普惠发展

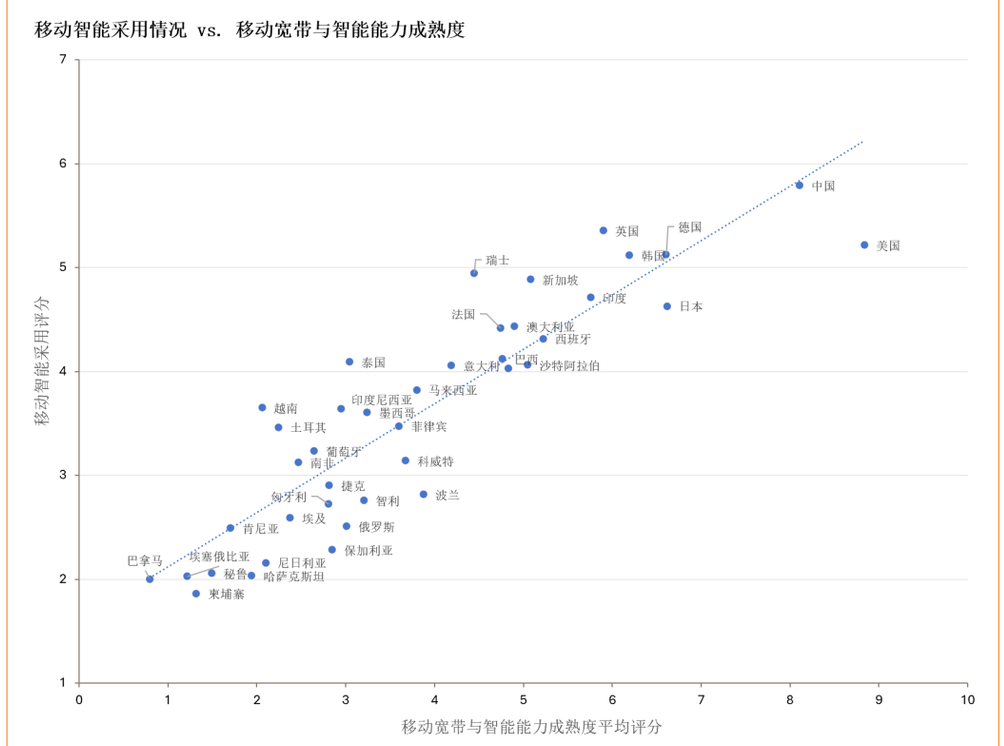
Unlocking the Value of Network–AI Convergence to Advance Inclusive Digital Development

本案例以“网智融合”创新实践推动移动通信网络与AI深度融合，促进开放协同的智能网络基础设施创新生态构建，支撑全球数字经济发展。在经济价值方面，通过开放能力共享、联合研发和测试验证，降低创新成本、提升产业协同效率；发布覆盖全球40个国家、超过75%人口的MI3指数，为各国推进移动智能融合发展提供参考。在社会价值方面，创新提出“端网协同”AI普惠路径，降低智能应用门槛，以埃塞俄比亚云功能手机项目为代表，新增用户短期内超9万，云OS月活稳定超83%、用户日均驻留63分钟，有效提升当地居民获取数字服务和智能应用能力，助力更多国家和企业特别是中小企业共享数智化发展机遇，缩小数字鸿沟，实现普惠价值提升。

This practice case advances the deep integration of mobile networks and artificial intelligence through innovative practices in network–intelligence convergence, fostering an open and collaborative innovation ecosystem for intelligent network infrastructure and supporting the development of the global digital economy.

Economically, the practice reduces innovation costs and enhances industrial collaboration efficiency through open capability sharing, joint research and development, and testing and validation. GTI also launched the MI3 Index, covering 40 countries and more than 75% of the world's population, providing a reference framework for countries to advance mobile intelligence integration.

Socially, the practice pioneered an inclusive AI approach based on device–network collaboration, lowering barriers to intelligent applications. In Ethiopia, the cloud feature phone project added more than 90,000 new users within a short period, with the cloud OS maintaining a monthly active user rate of over 83% and an average daily usage time of 63 minutes. By improving access to digital services and AI-enabled applications, these innovative practices help more countries and enterprises, especially small and medium-sized enterprises, share the opportunities of digital and intelligent development, narrow the digital divide, and enhance inclusive value creation.



▲ MI3指数覆盖40国超75%人口，助力移动智能成果普惠共享
MI3 Index, covering 40 countries and over 75% of the global population, promotes inclusive mobile intelligence development worldwide

天基碳观测基础设施的全球化共享与能力赋能——CASA计划实践

Bridging the Digital Divide: Globalized Sharing and Capacity Empowerment of Space-based Carbon Observation Infrastructure — Practice of the CASA Initiative



▲ CASA支持开展的中国碳卫星数据应用
Applications of China's carbon satellite data supported by the Cooperation on the Analysis of carbon Satellites data (CASA)

申报机构
Applying Institution

中国科学院空天信息创新研究院
Aerospace Information Research Institute of the Chinese Academy of Sciences

国家对地观测科学数据中心
National Earth Observation Science Data Center

其他参与机构
Other Participating Organizations

国家卫星气象中心(国家空间天气监测预警中心)、中国科学院大气物理研究所、中国科学院上海高等研究院、清华大学、中国矿业大学、北京理工大学、国家超级计算无锡中心、中国科学院计算机网络中心

National Satellite Meteorological Center (National Center for Space Weather), Institute of Atmospheric Physics, Chinese Academy of Sciences, Shanghai Advanced Research Institute, Chinese Academy of Sciences, Tsinghua University, China University of Mining and Technology, Beijing Institute of Technology, National Supercomputing Center in Wuxi, Computer Network Information Center, Chinese Academy of Sciences

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖英国、日本、哈萨克斯坦、意大利、韩国等30个国家和地区
Covering 30 countries and regions including the United Kingdom, Japan, Kazakhstan, Italy, South Korea

全球气候变化治理对碳排放监测提出迫切需求，但碳卫星数据因空间信息基础设施不均衡、跨国共享机制缺失而形成新的“数字鸿沟”。为加快全球网络基础设施建设、促进互联互通，国际碳卫星观测数据分析合作计划（CASA）应运而生。

Global climate change governance has created an urgent demand for carbon emissions monitoring. However, due to the uneven distribution of space information infrastructure and the lack of cross-border sharing mechanisms, carbon satellite data is giving rise to a new "digital divide". To accelerate the development of global network infrastructure and promote connectivity, the international cooperation initiative, Cooperation on the Analysis of carbon Satellites data (CASA), emerged as a timely response.

构建跨国境碳观测数据基础设施与科研协作网络

Building a Cross-Border Carbon Observation Data Infrastructure and Research Collaboration Network

CASA由中国科学院空天信息创新研究院于2018年发起，是面向全球气候变化研究的大型国际合作计划。该计划依托中国TanSat碳卫星，整合日本GOSAT-1/2、欧空局Sentinel-5P等全球13个天基碳观测任务的大数据资源，与政府间气候变化专门委员会（IPCC）、地球观测组织（GEO）等国际组织深度合作，联合国家超级计算无锡中心、中国科学院计算机网络中心等高性能计算设施，构建了融合数据、计算与模型的一站式在线分析云平台。

至2026年5月，CASA已与22个国家的53个科研机构签署合作备忘录，汇聚超200TB碳观测数据集，支持17项国际科研任务，主办18次国际学术会议和4次面向发展中国家的培训班。该平台面向全球科学家开放，提供从数据发现到科学模型集成的完整技术链条，支持碳浓度反演、碳通量估算等前沿研究。

Launched in 2018 by the Aerospace Information Research Institute of the Chinese Academy of Sciences, CASA is dedicated to global climate change research. Relying on China's TanSat carbon satellite and integrating big data resources from 13 global space-based carbon observation missions, including Japan's GOSAT-1/2 and ESA's Sentinel-5P, CASA works in close collaboration with international organizations such as the Intergovernmental Panel on Climate Change (IPCC) and the Group on Earth Observations (GEO). Together with high-performance computing facilities like the National Supercomputing Center in Wuxi and the Computer Network Information Center of CAS, CASA has built a one-stop online analysis cloud platform that integrates data, computing, and models.

As of May 2026, CASA has signed memoranda of understanding with 53 research institutions from 22 countries, aggregated over 200 TB of carbon observation data, supported 17 international research projects, and hosted 18 international academic conferences and 4 training workshops for developing countries. The platform is open to scientists worldwide, providing a complete technological chain from data discovery to scientific model integration, supporting cutting-edge research such as carbon concentration inversion and carbon flux estimation.



CASA合作伙伴网络图谱
The Network Map of CASA

存算融合技术突破与“数据能力共享”机制创新

Technological Breakthroughs in Storage-Computing Integration and Innovations in the "Data Capability Sharing" Mechanism

CASA突破传统数据“搬运式”共享思维，提出“数据能力共享”的创新理念。核心创新点包括：一是构建存算融合的一站式科研环境，将海量碳卫星数据就近部署于超算中心，实现“数据不动、计算动”，有效破解跨国数据传输瓶颈；二是建立开放包容的国际化合作机制，制定符合国际惯例的数据政策与知识产权原则，形成从项目征集、科学委员会审核到云系统承接的规范化流程；三是面向发展中国家开展能力建设赋能，通过培训弥合碳监测领域的“数字鸿沟”。

CASA breaks away from the traditional "data-transfer" sharing model and proposes an innovative concept of "data capability sharing". Its core innovations include:

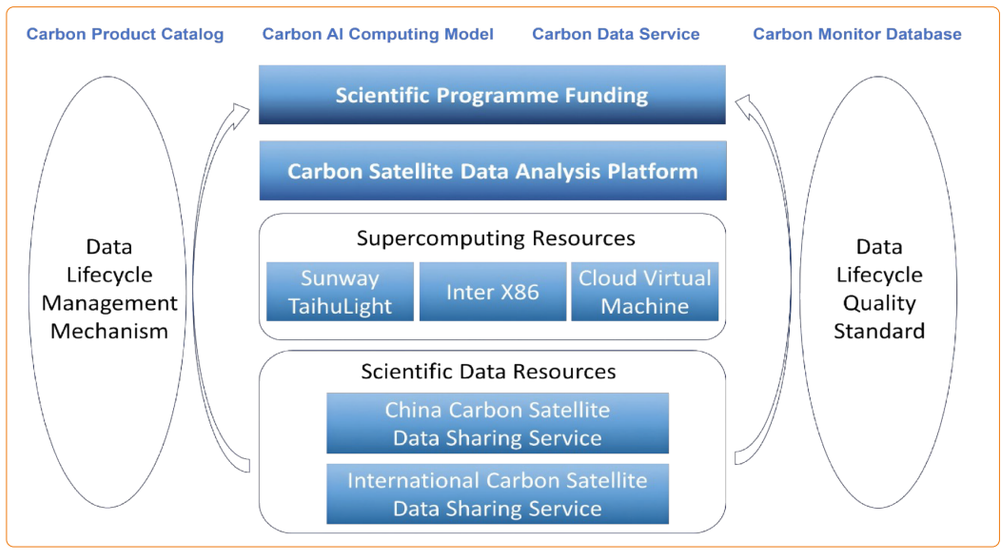
first, building a storage-computing integrated research environment that deploys massive carbon satellite data directly in supercomputing centers, enabling "data stationary, computing mobile" to effectively solve cross-border big data transmission bottlenecks.

Second, establishing an open and inclusive international cooperation mechanism, formulating data policies and intellectual property principles consistent with international practices, and forming a standardized process from project solicitation and scientific committee review to cloud system implementation.

Third, empowering capacity building for developing countries and bridging the "digital divide" in carbon monitoring through training.

在实施路径上，CASA采取分阶段策略：一期（2018-2020年）完成平台原型搭建与国际合作网络初建；二期（2021-2023年）组建专题工作组，实现从数据汇聚、模型研发到科学应用的完整闭环；三期（2024-2026年）引入人工智能大模型技术提升碳卫星数据反演精度与处理效率，合作国家扩展至35个以上；四期（2027-2030年）聚焦可持续发展与常态化运营机制建设，构建全球碳数据公共产品体系，为《巴黎协定》全球盘点提供独立第三方数据支撑。

In terms of implementation, CASA adopts a phased strategy: Phase I (2018-2020) completed the platform prototype and initial international cooperation network; Phase II (2021-2023) established thematic working groups, achieving a complete closed loop from data aggregation and model development to scientific applications; Phase III (2024-2026) will introduce AI large model technologies to improve the accuracy and efficiency of carbon satellite data inversion, expanding partner countries to over 35; Phase IV (2027-2030) will focus on sustainable development and the establishment of normalized operational mechanisms, building a global carbon data public goods system to provide independent third-party data support for the Global Stocktake of the Paris Agreement.



▲ CASA总体技术框架
The Overall Technical Framework of CASA

弥合碳监测数字鸿沟，赋能全球气候治理普惠发展

Bridging the Digital Divide in Carbon Monitoring and Enabling Inclusive Development for Global Climate Governance

CASA通过推动碳卫星数据与计算能力的民主化共享，产生了广泛的国际影响与显著价值。

By promoting the democratic sharing of carbon satellite data and computing power, CASA has generated broad international impact and significant value.

社会价值方面，CASA有效弥合了全球碳监测领域的“数字鸿沟”。通过向发展中国家提供免费数据、在线工具与专业培训，显著降低了气候变化研究的参与门槛。平台已支持中国、埃及、土耳其、秘鲁等14个国家的100余位科研人员开展独立研究，相关成果发表于《自然》正刊，有力提升了国际科研合作的公平性与包容性。

In terms of social value, CASA effectively bridges the "digital divide" in global carbon monitoring. By providing developing countries with free data, online analysis tools, and professional training, it has significantly lowered the barriers to participation in climate change research. The platform has supported over 100 researchers from 14 countries, including China, Egypt, Turkey and Peru, in conducting independent research, with relevant results published in Nature, significantly enhancing the fairness and inclusiveness of international research collaboration.

经济价值方面，CASA在线分析平台显著降低了基础设施投入。全球科学家无需重复建设存储与计算设施，可直接调用超200TB数据及亿亿次计算资源，大幅节约研发经费。同时，平台产出的近实时碳排放数据库与全球碳通量产品，为中国及国际社会制定减排政策、参与碳交易提供了关键数据支撑。

In terms of economic value, CASA's online analysis platform has significantly reduced infrastructure investment in carbon data research. Scientists worldwide no longer need to duplicate large-scale storage and computing facilities; they can directly access over 200 TB of data and exascale computing resources aggregated on the platform, greatly saving R&D expenses. Meanwhile, the near-real-time carbon emission database and global carbon flux products produced by the platform provide critical data support for China and the international community in formulating emission reduction policies and participating in carbon trading.

战略价值方面，CASA有力推动了中国下一代碳卫星计划的立项。通过对TanSat数据的深度验证，充分展示了中国制造的碳卫星的科学价值与应用潜力，为新卫星的指标设计与载荷优化提供了关键依据。CASA所形成的“在轨验证—数据应用—需求反馈—卫星迭代”良性循环，加速了中国碳监测卫星体系的跨越式发展，为全球气候治理贡献了中国方案。

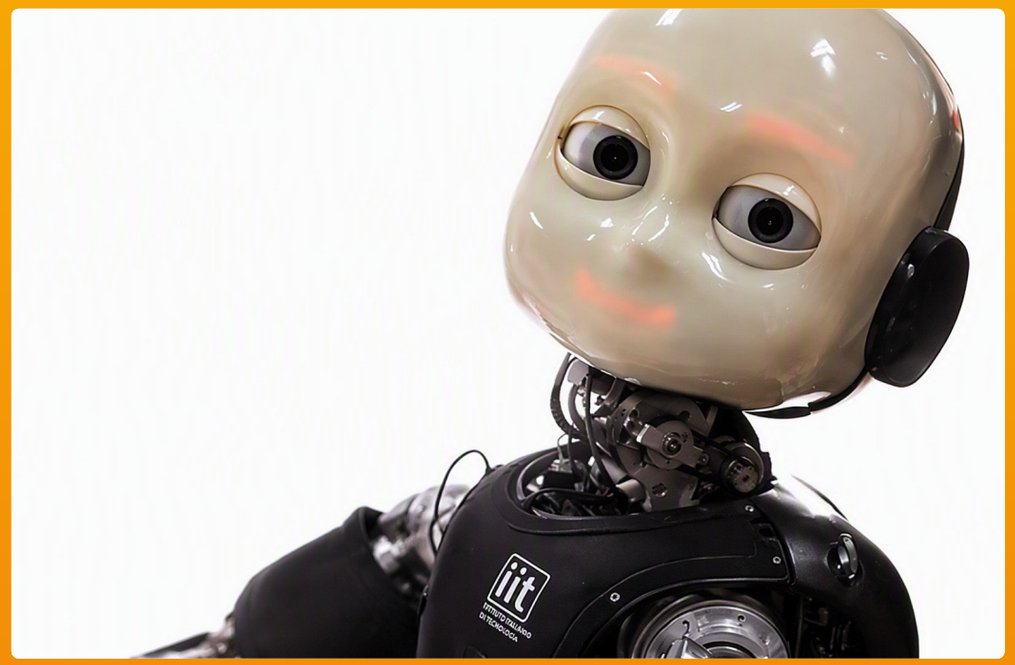
In terms of strategic value, CASA has strongly promoted the initiation of China's next-generation carbon satellite program. Through in-depth validation of TanSat data, it has fully demonstrated the scientific value and application potential of China's carbon satellites, providing key evidence for the design and payload optimization of new satellites. The virtuous cycle formed by CASA—"in-orbit validation → data application → demand feedback → satellite iteration"—has accelerated the leapfrog development of China's carbon monitoring satellite system and contributed a Chinese solution to global climate governance.



▲ CASA为全球30个国家的500余名研究人员提供技术培训
CASA provided technical training to over 500 researchers from 30 countries around the world

意大利技术研究院iCub与iRonCub人形机器人平台：从开源全球共享到喷气动力飞行突破的欧洲机器人创新与转化实践

IIT iCub and iRonCub Humanoid Platforms: From Global Open-Source Sharing to Jet-Powered Flight — A European Pathway of Robotics Innovation and Translation



▲ 意大利技术研究院开源人形机器人iCub近景，呈现面向全球研究社区开放共享的核心实验平台。
Close-up of IIT's open-source humanoid robot iCub, the core experimental platform shared with the global research community.

申报机构
Applying Institution

意大利技术研究院（IIT）
Istituto Italiano di Tecnologia (IIT)

其他参与机构
Other Participating Organizations

米兰理工大学（DAER空气动力学实验室）、斯坦福大学（Gianluca Iaccarino团队）、曼彻斯特大学、那不勒斯费德里科二世大学、INRIA法国国家信息与自动化研究所、索邦大学ISIR实验室、热那亚大学、比萨圣安娜高等研究大学、欧洲研究委员会（ERC）

Politecnico di Milano (DAER Aerodynamics Laboratory), Stanford University (Gianluca Iaccarino Group), University of Manchester, University of Naples Federico II, INRIA, Sorbonne University ISIR Laboratory, University of Genoa, Scuola Superiore Sant'Anna, European Research Council (ERC)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、英国、瑞士、德国、日本、中国、新加坡、韩国、意大利、法国10个国家和地区

Covering 10 countries and regions including the United States, the United Kingdom, Switzerland, Germany, Japan, China, Singapore, South Korea, Italy, and France

全球人形机器人研究长期面临平台碎片化、实验难以复现等问题，封闭且成本高昂的商业平台进一步抬高了门槛。意大利技术研究院以iCub开源平台和iRonCub喷气动力飞行人形机器人为抓手，推动相关技术从全球共享的研究资源走向真实场景验证，并拓展多模态运动边界。

Humanoid robotics research worldwide has long been constrained by fragmented platforms and experiments that are hard to reproduce; closed and costly commercial systems raise the barrier further. Through the iCub open-source platform and the jet-powered flying humanoid iRonCub, IIT is moving the field from shared research infrastructure toward real-world validation and multimodal locomotion.

国际协同机器人开源创新与飞行突破网络

A Ten-Country Network for Open-Source Robotics Innovation and Flight Breakthroughs

意大利技术研究院成立于2003年，并于2004年协调欧盟第六框架计划RobotCub项目，启动iCub开源人形机器人平台。iCub以GPL许可完全开源，硬件设计、软件接口与全身电子皮肤系统向全球开放。目前已有40余台iCub部署于欧洲、美国、韩国、新加坡、日本和中国等地实验室，100余名研究人员参与代码贡献。2021年，研究院启动iRonCub项目；2025年6月，iRonCub3首次实现离地约50厘米的稳定飞行，成为全球首台喷气动力飞行人形机器人，相关成果发表于Nature Communications Engineering。开源共享与飞行验证因此构成同一条欧洲机器人创新链条：前者降低研究门槛，后者把平台能力推进到多模态运动的新边界。

Founded in 2003, IIT coordinated the EU Sixth Framework Programme project RobotCub in 2004 and launched the iCub open-source humanoid platform. Released under the GPL, iCub opens hardware designs, software APIs and a whole-body electronic-skin system to the world. More than 40 iCub robots are deployed in laboratories across Europe, the United States, the Republic of Korea, Singapore, Japan and China, with over 100 researchers contributing code. IIT launched the iRonCub project in 2021; in June 2025, iRonCub3 achieved stable flight at about 50 centimeters, becoming the first jet-powered flying humanoid robot, with results published in Nature Communications Engineering. Open sharing and flight validation therefore form one European robotics chain: the first lowers the research barrier, the second pushes the platform into multimodal locomotion.



机器人手与人工持物的协同交互实验，说明开源人形平台在感知、抓取与人机协作方面的研究场景。
A human–robot object-interaction experiment, illustrating research on perception, grasping and collaboration with the open-source humanoid platform.



配备触觉与传感单元的机器人手掌，对应iCub全身电子皮肤与精细力觉反馈的技术路线。
A sensorized robotic palm, corresponding to iCub's whole-body electronic skin and fine force-feedback design.

从开源共享到喷气动力飞行的闭环创新路径

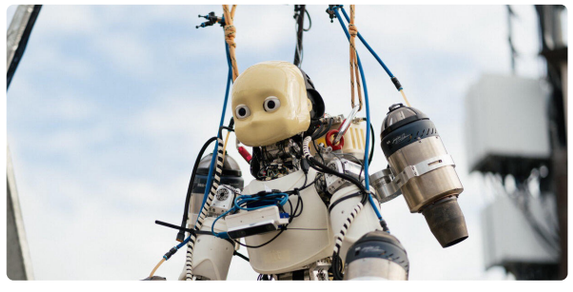
A Closed-Loop Innovation Pathway from Open-Source Sharing to Jet-Powered Flight

本案例的核心创新，在于构建“开源平台共建—全球社区协同—技术迭代突破—多模态飞行验证—场景应用转化”的闭环。iCub自1.0迭代至3.0，持续吸收最新研究成果，53个自由度、全身电子皮肤与YARP中间件等已成为社区通用基础。iRonCub3配置四台喷气发动机，可产生超过1,000牛顿推力，排气温度达800°C；团队研制钛合金脊柱与耐热防护结构，并利用神经网络实时估计气动力，实现非对称人形结构下的稳定飞行。研究还联合米兰理工大学DAER实验室开展风洞试验，与斯坦福大学合作发展计算流体力学仿真与深度学习模型。创新不停留在单台样机，而在于把开源平台、国际实验室网络和极端工况验证写成可复用的工程方法。

The case's core innovation is a closed loop of open-source platform building, global community contribution, technical iteration, multimodal flight validation and application translation. From iCub 1.0 to 3.0, 53 degrees of freedom, whole-body electronic skin and the YARP middleware have become shared community infrastructure. iRonCub3 uses four jet engines generating more than 1,000 newtons of thrust, with exhaust temperatures of about 800°C; a titanium spine, heat-resistant shielding and neural-network estimation of aerodynamic forces enable stable flight on an asymmetric humanoid body. Wind-tunnel tests with Politecnico di Milano DAER and CFD/deep-learning work with Stanford University underpin the flight stack. The innovation is not a single prototype, but an engineering method that binds an open platform, an international laboratory network and extreme-condition validation.



iCub上身结构特写，展示高自由度肩臂机构与仿人头部传感布局，是平台持续迭代的硬件基础。
Upper-body close-up of iCub, showing a high-degree-of-freedom shoulder–arm mechanism and human-like head sensing as the hardware basis for continued iteration.



iRonCub喷气动力飞行人形机器人户外悬停试验，对应从开源平台到多模态飞行验证的关键突破。
Outdoor hover test of the jet-powered flying humanoid iRonCub, the key step from an open platform to multimodal flight validation.

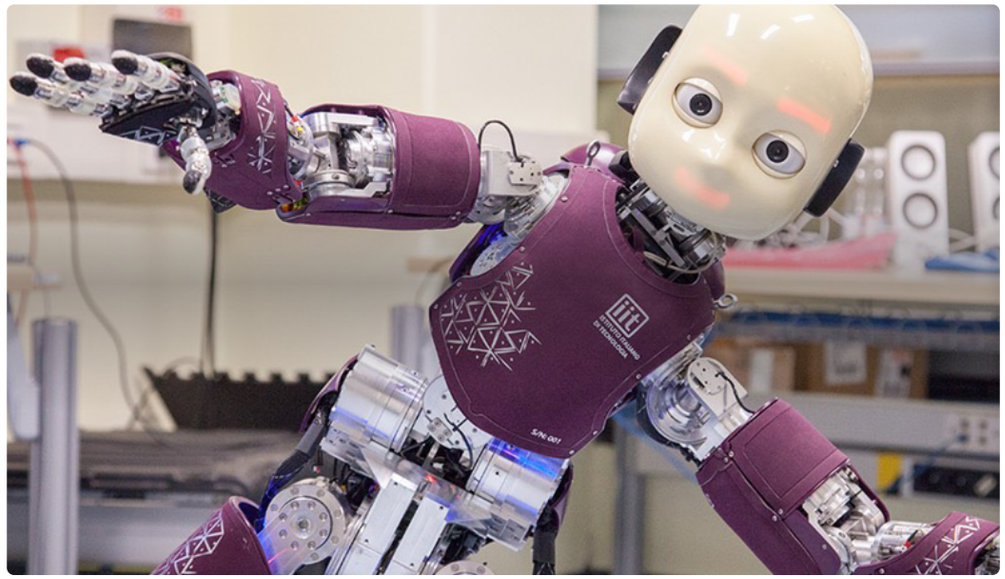
面向全球的普惠价值与欧洲机器人创新范式

Inclusive Global Value and a European Paradigm of Robotics Innovation

iCub开源平台减少了全球研究机构的重复开发，显著降低人形机器人研究门槛。iRonCub3的飞行验证，为灾害救援、危险环境巡检和远程呈现拓展了新的应用可能。iCub已进入多地康复与认知干预场景，并参与面向自闭症儿童的实验研究，使开源平台同时服务于科学训练和公共福祉。完全开源的模式，使发展中经济体和中小型研究机构能够以相对较低的成本使用国际级人形机器人平台。意大利技术研究院由此形成“欧盟项目孵化—开源社区共建—全球学术网络—成果转化”的完整路径，其示范意义在于：前沿突破可以与公共科研基础设施同时建设，而不是相互替代。

The iCub open-source platform reduces duplicated development and lowers the barrier to humanoid robotics research. The iRonCub3 flight demonstration opens possibilities for disaster response, inspection in hazardous environments and telepresence. iCub has entered rehabilitation and cognitive-intervention settings, including experimental work with children on the autism spectrum, so the open platform serves both scientific training and public welfare. Full openness enables developing economies and smaller laboratories to access an international-grade humanoid platform at relatively lower cost.

IIT thus offers a complete pathway from EU project incubation and open-source community building to a global academic network and technology translation: frontier breakthroughs can be built together with shared research infrastructure, rather than in place of it.



▲ 实验室中的iCub整机作业姿态，体现开源人形平台在真实科研环境中的部署、调试与共享使用。
iCub operating in a laboratory setting, showing how the open-source humanoid is deployed, tested and shared in a working research environment.

CMP+eSIM：服务车企构建全球化数字化通信底座

CMP+eSIM: Equipping Automakers with the Digital Backbone for Global Connectivity



▲ 中国电信国际车联网连接管理平台发布
China Telecom Global launches its Global Connected-Vehicle Connectivity Management Platform

申报机构
Applying Institution

中国电信集团有限公司
China Telecommunications Corporation

天翼物联科技有限公司
ESurfing IoT Tech Co., Ltd

中国电信国际有限公司
China Telecom Global Limited

其他参与机构
Other Participating Organizations

法国电信、荷兰皇家电信、泰国AIS、马来西亚明讯、阿联酋Du、沙特Mobily

Orange, KPN, AIS, Maxis, Du, Mobily

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖英国、挪威、以色列、丹麦、法国等34个国家和地区

Covering 34 countries and regions including the United Kingdom, Norway, Israel, Denmark, France

汽车全球化：CMP+eSIM，构筑全球化通信底座

CMP 连接管理平台（IOTC）叠加 eSIM 技术，可对全球车载 eSIM 实现统一调度，动态完成运营商网络切换，从根源上破解跨境漫游带来的业务桎梏，助力车企高效落地全球智能网联业务，实现全球业务规模扩张与通信成本可控的双向平衡。

Automakers Going Global: CMP + eSIM as the Digital Backbone for Global Connectivity

CTG integrates its Connectivity Management Platform (IOTC) with eSIM technology to provide automakers with unified, centralized management of global connectivity. The solution enables intelligent, automated network switching, eliminating the operational barriers and cost unpredictability of traditional cross-border roaming. Automakers can therefore deploy and scale their connected vehicle services internationally with accelerated time-to-market and optimized cost efficiency — achieving sustainable global expansion without the communications overhead.

中国电信助力小鹏汽车实现全球化车联网覆盖
China Telecom empowers XPENG's Global Expansion Through Unified CMP Platform

小鹏汽车2024年加速欧洲及亚太市场扩张，计划在欧洲、东南亚、澳洲及新西兰等十余个国家和地区投放超20万台智能电动车。为支撑其全球化战略，中国电信国际公司依托CTG 统一CMP平台（IOTC），为其提供端到端的多国eSIM车联网解决方案。项目覆盖欧洲、东南亚（印尼、泰国、马来西亚、新加坡）、澳洲、新西兰、香港及阿联酋等市场，通过与德国电信（DT）、澳洲Telstra、新加坡Singtel、泰国AIS、马来西亚Maxis、印尼Telkomsel等全球顶级运营商合作，采用"种子号+本地profile"创新方案，实现一卡在手、多国联网。该方案既满足了各目标市场的本地合规要求，又大幅降低了国际漫游成本，支持远程诊断、OTA升级及紧急救援（eCall）等核心功能，为小鹏汽车全球化布局提供了关键通信基础设施保障。

In 2024, XPENG accelerated its expansion across European and Asia-Pacific markets, planning to deploy over 200,000 intelligent electric vehicles across more than ten countries and regions, including Europe, Southeast Asia, Australia, and New Zealand. To support its globalization strategy, China Telecom Global delivered an end-to-end, multi-country eSIM connected vehicle solution through its unified Connectivity Management Platform (IOTC).

The project covers Europe, Southeast Asia (Indonesia, Thailand, Malaysia, Singapore), Australia, New Zealand, Hong Kong, and the UAE. Through partnerships with Tier-1 global operators including Deutsche Telekom (Europe), Telstra (Australia), Singtel (Singapore), AIS (Thailand), Maxis (Malaysia), and Telkomsel (Indonesia), CTG deployed an innovative "bootstrap profile + local profile" architecture, enabling seamless multi-country connectivity on a single SIM. This approach satisfies local compliance requirements in each target market while significantly reducing international roaming costs. It supports core functions such as remote diagnostics, OTA updates, and emergency call (eCall), providing the critical communications infrastructure for XPENG's global rollout.



▲ 中国电信国际公司全球合作伙伴 / Global Partners of China Telecom Global Limited

中国电信车联网eSIM方案，助力行业升级，保障安全合规

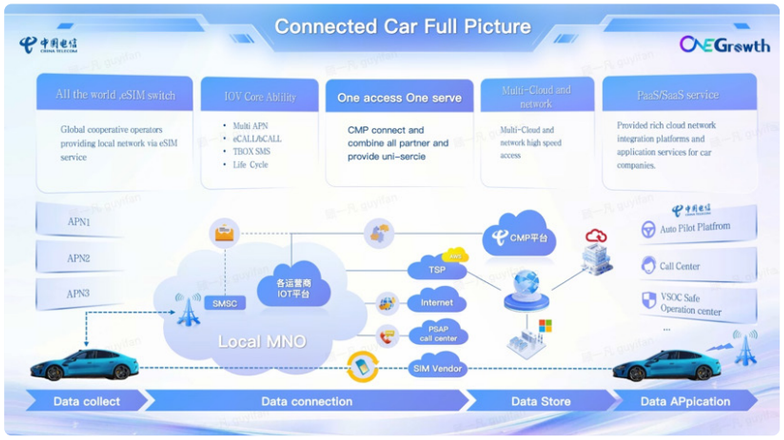
China Telecom eSIM Solution for Connected Vehicles — Driving Industry Advancement with Security and Compliance

中国电信国际重磅推出车联网eSIM一站式全球化解决方案，助力全球智能网联汽车产业升级。方案支持本地接入、全球覆盖，通过产线预激活部署eSIM种子卡，让车辆跨境联网无缝网络切换。依托专属平台可一键切换全球号码，按需选配各地最优本地号，30秒内完成号码下载、网络附着与APN自动适配，实现全域无缝连接。

方案严守安全合规标准，采用SGP.32协议与GSMA证书完成高等级鉴权，搭配高强度数据加密。平台布局香港、欧洲等多地节点，实现异地容灾，同时全面契合各地法规要求，为车企全球化业务筑牢可靠支撑。

CTG has launched a one-stop eSIM solution for automakers entering global markets, designed to accelerate the intelligent connected vehicle industry's evolution worldwide. The solution delivers local connectivity with worldwide coverage. By pre-activating eSIM bootstrap profiles on the production line, vehicles switch networks seamlessly the moment they cross a border — no manual intervention required. Through a dedicated management platform, automakers can switch to local profiles with a single click, selecting the optimal profile for each market on demand. Profile download, network attachment, and automatic APN configuration are completed within 30 seconds, ensuring uninterrupted connectivity across all regions.

On the security front, the architecture meets the highest industry standards: SGP.32 protocol implementation, GSMA-certified authentication, and end-to-end encryption protect both vehicle data and passenger privacy. Multi-node deployment across Hong Kong, Europe, and beyond ensures resilience through geographic redundancy, while full compliance with local regulations in every operating market removes the legal friction from global expansion.



▲ 中国电信车联网全览图 / Overview of China Telecom Global's Connected Vehicle Solution

服务全球 国际领先的车联网服务运营商

Global Services:A World Leading Connected Vehicle Service Operator

中国电信在汽车全球化有深入布局。车企自主实现全球联网需对接数十家运营商，投入超千万级；中国电信CMP已完成全球主流运营商网络对接，支持180+国家连接管理，帮车企节省70% CAPEX，降低40%的OPEX，有效缩短time-to-market（TTM）时间。

技术普惠：以标准化API统一封装全球运营商异构网络，实现"一次对接、全球联网"。

服务普惠：分级账号管理不同品牌、车型、及国家，实现全球用户服务一致化，提升品牌竞争力。

生态普惠：聚合运营商、云服务商、合规及支付等资源，形成一站式全球化服务生态，降低产业链协作成本。

数据普惠：统一数据口径，支持全球运营数据分析，中小车企可获得与大厂同等的数据洞察能力，辅助决策。

China Telecom has made extensive strategic moves in the global automotive sector. Where independent global deployment demands engagement with dozens of carriers and tens of millions in CAPEX, CTG's CMP platform has already completed integration with Tier-1 operators to cover 180+ countries，cutting CAPEX by 70%, OPEX by 40%, and months off the launch timeline.

Technology Inclusion: Standardized APIs mask operator specific discrepancies to enable rapid global connected vehicle capabilities.

Service Standardization:Unified management for multiple brands, models and countries ensures consistent global user experiences, strengthening brand competitiveness.

Ecosystem Integration:Consolidates resources including operators, cloud providers, compliance and payment services to form a one stop global expansion service ecosystem, lowering industry chain collaboration costs.

Data Democratization:Unified data standards enable global operational analysis, giving SMEs the same data insights as industry leaders to guide decisions.



▲ 中国电信汽车国际案例墙
China Telecom Global Automotive Case Wall

中国电信助力中国智能车企实现全球化车联网覆盖，随着中国汽车工业从"产品全球化"迈向"体系全球化"

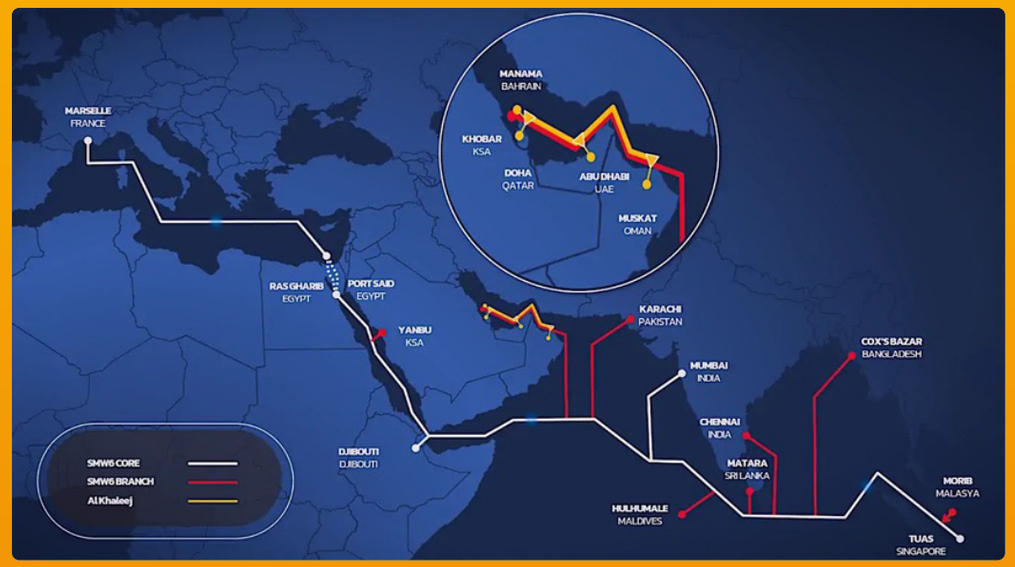
CTG Connects Chinese Automakers Worldwide — Powering the Industry's Evolution from Product Export to Ecosystem Globalization

全球数字化浪潮下，无缝的网络连接正成为驱动社会智能化演进的基础力量。中国电信国际在与全球20多个运营商协作中，打造全球化、智能化的跨境车联网能力体系。CTG-IOTC已演化为全球连接框架，将网络接入、计费结算等功能拆解为标准模块，让全球网络资源汇聚为开放共享的数字基础设施。当每一辆智能汽车都能在全球任意角落稳定在线，自动驾驶、车路协同、智慧座舱等前沿应用才能真正跨越地理边界，惠及更广泛的群体，为人类迈向更智能、更可持续的出行未来铺设了坚实的数字路基。

Amid the global wave of digitalization, seamless network connectivity is becoming the foundational force driving the intelligent evolution of society. Through collaboration with more than 20 operators worldwide, China Telecom Global has built a globalized, intelligent cross-border connected-vehicle (IoV) capability system. CTG-IOTC has evolved into a global connectivity framework that modularizes functions such as network access, billing and settlement into standard components, converging global network resources into an open, shared digital infrastructure. When every intelligent vehicle can stay stably connected in any corner of the world, frontier applications such as autonomous driving, V2X, and smart cockpits can truly transcend geographic boundaries, benefit a wider population. This is the solid digital groundwork CTG is laying for a more intelligent and sustainable mobility future for humanity.

SMW6 海缆系统纵贯亚非，赋能“一带一路”沿线数字基建提质升级

SMW6 Submarine Cable System: Serving "Belt and Road" Countries



▲ SMW6 海缆路由图
SMW6 Submarine Cable Route Map

申报机构
Applying Institution

香港电讯有限公司
Hong Kong Telecommunications (HKT) Limited

其他参与机构
Other Participating Organizations

微软爱尔兰运营有限公司、孟加拉国海底电缆股份有限公司、马尔代夫迪拉古电信股份有限公司（Dhiraagu）、吉布提电信公司、沙特联合电信公司（Mobily）、Network i2i有限公司、Orange集团、新加坡电信有限公司、斯里兰卡电信股份有限公司、埃及电信股份有限公司、Trans World Associates私人有限公司、马来西亚电信有限公司、印度尼西亚电信国际有限公司、中国联合网络通信有限公司、巴林电信股份有限公司（BEYON）

Microsoft Ireland Operations Limited, Bangladesh Submarine Cables PLC , Dhivehi Raajjeyge Gulhun PLC, Djibouti Telecom, Etihad Etisalat Company (Mobily), Network i2i Limited, Orange, Singapore Telecommunications Limited, Sri Lanka Telecom PLC, Telecom Egypt, S.A.E., Trans World Associates (Pvt) Ltd, Telekom Malaysia Berhad, PT Telekomunikasi Indonesia International (Telin), China United Network Communications Limited, BEYON B.S.SC (Bahrain Telecommunications Company B.S.C)

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖阿曼、埃及、阿联酋、巴林、法国等15个国家和地区

Covering 15 countries and regions including Oman, Egypt, the United Arab Emirates, Bahrain, France

香港电讯（HKT）作为SMW6（东南亚-中东-西欧6号）海缆系统国际财团的关键成员，通过财团合作模式参与该项目的投资、建设和容量共享。SMW6由SubCom承建，全长约21,700公里，采用SDM技术，设计容量达132 Tbps，设有17个登陆点，连接新加坡、印度、孟加拉、斯里兰卡、马尔代夫、巴基斯坦、沙特、埃及及法国马赛等东南亚、南亚、中东与西欧核心节点。作为非登陆成员，HKT依托自身全球PoP网络与MPLS能力，将高容量、低延迟的SMW6资源延伸至更广区域，显著提升“一带一路”沿线数据传输韧性与带宽，有效支撑跨洲数据流动、云互联及数字经济高质量发展。

As a key member of the Southeast Asia-Middle East-Western Europe 6 (SMW6) international consortium, HKT has participated in the investment, construction, and capacity sharing of this project.

Constructed by SubCom, the SMW6 system spans approximately 21,700 kilometers. It utilises Space Division Multiplexing (SDM) technology, boasts a design capacity of 132 Tbps, and features 17 landing points connecting core nodes in Southeast Asia, South Asia, the Middle East, and Western Europe, including Singapore, India, Bangladesh, Sri Lanka, the Maldives, Pakistan, Saudi Arabia, Egypt, and Marseille, France.

Although a non-landing member, HKT leverages its global Point of Presence (PoP) network and MPLS capabilities to extend high-capacity, low-latency SMW6 resources to a wider region. This significantly enhances data transmission resilience and bandwidth along the "Belt and Road" ,effectively supporting cross-continental data flows, cloud interconnection, and the high-quality development of the digital economy.

SMW6 海缆破解互联瓶颈，赋能数字丝路互联互通

SMW6 Submarine Cable: Resolving Bottlenecks for Digital Silk Road Interconnection

全球跨境数据激增，传统海缆短板突出，发展中国家数字基建滞后，数字鸿沟拉大，制约数字产业发展。在此背景下多国共建 SMW6 新一代海缆，串联东南亚、中东及西欧，凭借大容量、高韧性优势破除网络瓶颈，为一带一路区域搭建低时延安全数据通道，助力数字经济发展与全球数据流通。

The global digital landscape is experiencing rapid transformation, driven by an exponential surge in cross-border traffic. Traditional submarine systems struggle to keep pace, plagued by bandwidth bottlenecks, single-route dependency, and limited fault recovery. In "Belt and Road" (BRI) countries and the Global South, fragile infrastructure and high costs widen the digital divide, constraining digital trade.

The Digital Silk Road initiative creates an imperative for resilient cross-continental infrastructure. The SMW6 project addresses these challenges through a robust operator consortium, constructing a next-generation system offering superior capacity. By linking Southeast Asia, the Middle East, and Western Europe, SMW6 bypasses bottlenecks, providing a secure, low-latency data channel for the BRI region to support sustainable digital economic development.



SMW6 技术架构先进运力充足，赋能跨洲数字互联升级

Advanced Architecture & Sufficient Capacity of SMW6 for Intercontinental Digital Interconnection Upgrade

SMW6采用国际财团合作模式，由16家运营商共同投资建设，HKT作为关键成员参与容量与股权共享。系统全长约21,700公里，配备10个光纤对，采用最新SDM空间分复用技术，单纤对容量达12.6 Tbps，系统设计容量最高达132 Tbps，显著超越前代产品。核心架构亮点在于埃及段采用陆地穿越方案（Ras Ghareb至Port Said），有效规避单一海域风险，实现路由多样化；同时设置海湾分支（Al Khaleej），服务巴林、阿曼、卡塔尔、阿联酋等区域。底层设计逻辑强调开放性与韧性，通过财团模式实现风险共担、利益共享，并与HKT 全球140余个PoP节点及MPLS网络深度融合，形成“海-陆-天”立体互联能力，为后续LEO卫星混合组网预留接口。

SMW6建成后将提供最高132 Tbps系统容量与约130毫秒的新加坡至马赛往返时延，较传统路由显著降低延迟并提升可用性。系统覆盖17个登陆点、横跨四大洲核心经济带，预计大幅提升东南亚至欧洲的国际带宽供给，助力孟加拉等国国际出口带宽实现数倍增长。HKT依托该系统，可为企业客户提供更高韧性的跨洲专线与云接入服务，结合其全球PoP网络，预计将使BRI区域客户网络可用性提升至99.99%以上，单链路故障恢复时间大幅缩短。财团成员反馈显示，该项目有效分散了单一供应商依赖风险，实际运维成本与传统系统相比更具竞争力，已成为区域数字基础设施标杆。

SMW6 is underpinned by a sophisticated international consortium model, representing a collaborative investment by 16 leading operators. HKT is a member of the consortium . The system spans approximately 21,700 kilometers and incorporates 10 fiber pairs.

A critical technological differentiator is the integration of the latest Space Division Multiplexing (SDM) technology. This advancement allows the system to achieve 12.6 Tbps per fiber pair, culminating in a total system design capacity of 132 Tbps. The architectural design prioritizes security and route diversity, notably through the implementation of a terrestrial crossing in Egypt (linking Ras Ghareb to Port Said), which effectively mitigates single-sea-area risks. Furthermore, the system includes a dedicated Gulf branch (Al Khaleej) to serve Bahrain, Oman, Qatar, and the UAE.

The philosophy prioritizes openness, scalability, and resilience. Through the consortium framework, the project successfully shares risks and benefits among all participants. HKT’s integration of over 140 Points of Presence (PoP) nodes and MPLS capabilities facilitates "sea-land-space" connectivity, creating a comprehensive network flexible enough to integrate future hybrid networking interfaces, such as those for Low Earth Orbit (LEO) satellite communications.

Upon reaching operational status, SMW6 will provide a total capacity of 132 Tbps. It offers a round-trip latency of approximately 130 milliseconds between Singapore and Marseille, representing a substantial reduction in latency and a marked improvement in availability compared to traditional routes.

With its footprint extending across 17 landing points and four continents, the system increases international bandwidth supply. This is transformative for countries like Bangladesh, facilitating multi-fold growth in international export bandwidth. By leveraging this system alongside its global PoP network, HKT enables enterprise customers to access significantly more resilient cross-continental private lines and cloud access services. These enhancements are projected to boost network availability for clients within the BRI region to over 99.99%, while drastically reducing recovery times for single-link failures. Consortium partners confirm the project effectively mitigates risks associated with single-vendor dependency and offers highly competitive operational costs, establishing a new benchmark for regional digital infrastructure.

多国协同落地 SMW6 海缆，联营共建模式具备广泛复用价值

Multinational Rollout of SMW6 Cable & Widely Reusable Joint Venture Model

SMW6已在新加坡（Tuas）、印度（孟买、钦奈）、巴基斯坦（Karachi）、斯里兰卡（Matara）、马尔代夫、沙特（Yanbu）、埃及（双登陆点）、法国（马赛）等17个地点完成或推进登陆建设。印度运营商Bharti Airtel新建专用登陆站并拥有私有光纤对；沙特Mobily、法国Orange、埃及Telecom Egypt分别负责本地登陆与运维；Batelco主导海湾分支落地。HKT作为非登陆成员，通过财团合作与自身全球网络实现无缝对接，在东南亚与中东市场快速释放容量。项目注重本地化适配，与沿线运营商深度合作完成许可、海洋勘测与土建工程，典型案例包括印度新站快速投产、埃及陆地段高效穿越及海湾分支的区域定制，验证了财团模式在不同监管与地理环境下的可复制性。

The execution of the SMW6 system demonstrates complex, multi-stakeholder project management. Construction and landing operations have been completed or are advancing at 17 strategic locations, including Tuas (Singapore), Mumbai and Chennai (India), Karachi (Pakistan), Matara (Sri Lanka), the Maldives, Yanbu (Saudi Arabia), dual landing points in Egypt, and Marseille (France).

Each landing site uses localized cooperation agreements to ensure efficiency. For instance, Bharti Airtel (India) has constructed a dedicated landing station and maintains ownership of private fibre pairs. Similarly, Saudi Mobily, France’s Orange, and Telecom Egypt bear responsibility for their respective local landings, while Batelco leads landing operations for the Gulf branch.

Although HKT operates as a non-landing member, it achieves seamless service integration through consortium cooperation and its own robust global network, rapidly releasing capacity across Southeast Asian and Middle Eastern markets. The project emphasizes rigorous local adaptation, navigating complex licensing and engineering challenges. Notable successes, such as the rapid commissioning of stations in India and the efficient terrestrial crossing in Egypt, validate the consortium model's replicability across diverse regulatory and geographical environments.

打造跨洲互联标杆，助力数字丝路长效协同发展

Intercontinental Connectivity Benchmark & Sustainable Co-development of Digital Silk Road

SMW6作为新一代跨洲海缆典范，以财团合作+SDM技术+多样化路由的创新模式，为全球数字基础设施建设提供了可复制、可推广的经验。它不仅大幅提升了东南亚-中东-欧洲数字走廊的互联水平，更通过开放共享的合作架构，降低了地缘与单一故障风险，契合网络空间命运共同体理念。项目有力支撑了数字丝绸之路建设，推动全球南方国家数字经济发展与国际数据治理能力提升。HKT在此过程中的实践，展现了中国香港企业参与国际数字基础设施的担当与能力，为未来更多跨洲海缆、卫星混合网络及BRI数字合作树立了标杆，具有重要的行业示范与长远战略意义。

As a paradigm for next-generation cross-continental submarine cables, SMW6 offers a replicable and scalable model for global digital infrastructure development. Its success is rooted in the synergistic combination of consortium-led cooperation, cutting-edge SDM technology, and a design philosophy that prioritizes route diversity. The project does not merely enhance interconnection within the Southeast Asia-Middle East-Europe corridor; it actively lowers geopolitical and single-point-of-failure risks through an open, shared architecture that aligns with the vision of a "Community with a Shared Future in Cyberspace".

The project robustly supports the Digital Silk Road, promoting the development of the digital economy while improving the maturity of international data governance, particularly among Global South nations. HKT's strategic practice demonstrates the responsibility and technical capability of Hong Kong China enterprises to participate in, and lead, international digital infrastructure. SMW6 sets a definitive benchmark for future cross-continental submarine cables and hybrid networks, holding significant industry demonstration value and long-term strategic importance.



▲ 全面网络监控，保障数字丝路通畅
Full network monitoring to ensure smooth operation of the Digital Silk Road.

02

网上文化交流互鉴

Online Cultural Exchanges and Mutual Learning

打造网上文化交流共享平台，促进交流互鉴

Building an Online Platform for Cultural Exchanges and Mutual Learning





精品案例

从本土创作到全球共鸣：数字音乐促进文明交流互鉴的创新实践

From Local Creation to Global Resonance: An Innovative Practice in Advancing Mutual Learning Among Civilizations Through Digital Music



▲ “热歌出海”横扫全球9地国家和地区10平台上百榜单，总播放40亿+
“Taking Hit Songs Global” has reached more than 100 charts across 10 platforms in 9 countries and regions worldwide, generating over 4 billion streams

申报机构
Applying Institution

腾讯音乐娱乐集团
Tencent Music Entertainment Group

其他参与机构
Other Participating Organizations

酷狗文化
Go Music Group

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖印度尼西亚、越南、新加坡、泰国、马来西亚等200个国家和地区
Covering 200 countries and regions including Indonesia, Vietnam, Singapore, Thailand, and Malaysia

在全球数字文化加速交融的今天，音乐正成为连接不同文化与人群的重要媒介。腾讯音乐娱乐集团自2022年启动“热歌出海”项目以来，联合全球音乐人开展多语种共创、国际传播与跨文化互动，让音乐走向全球、凝聚共鸣。

As digital cultures around the world become increasingly interconnected, music is emerging as an important medium for connecting diverse cultures and communities. Since launching the "Taking Hit Songs Global" project in 2022, Tencent Music Entertainment Group has collaborated with musicians worldwide on multilingual co-creation, international dissemination, and cross-cultural engagement, bringing music to global audiences and fostering shared resonance.

汇聚全球创作力量，以多语种共创促进文化理解与情感共鸣

Bringing Together Global Creative Forces to Promote Cultural Understanding and Emotional Resonance Through Multilingual Co-Creation

“热歌出海”的核心理念是“旋律先行、文化融合”。酷狗音乐联合不同国家和地区的歌手、音乐制作人及原创团队，对具有广泛传播潜力的华语歌曲进行印尼语、越南语、泰语、英语等多语种改编，在保留作品情感内核和艺术价值的基础上，融入当地文化元素与审美表达，实现“全球共鸣、本地表达”。

其中，《后来遇见他》印尼版《Aku Masih Memikirkanmu》上线后迅速获得广泛关注，跻身Spotify全球飙升榜TOP6，单曲播放量突破5.4亿次，全球短视频曝光量超过20亿次。与印尼达人秀冠军歌手Putri Ariani合作推出的《一路生花》印尼版，播放量突破5000万次，帮助作品在更广泛国际舞台获得认可。与泰国厂牌合作推出的《你能不能不要离开我》泰语版，MV播放量突破8000万次，并在TikTok引发超百万次跟拍，成为融合泰国本土文化表达与国际传播能力的代表性案例。

The project is guided by the core principle of “melody first, cultural integration”. Kugou Music has joined hands with singers, music producers, and original creative teams from different countries and regions to adapt Mandarin songs with broad dissemination potential into multilingual versions in Indonesian, Vietnamese, Thai, English, and other languages. While preserving the emotional core and artistic value of the works, it incorporates local cultural elements and aesthetic expression, thereby realizing “global resonance with local expression”.

Among them, the Indonesian version of “Hou Lai Yu Jian Ta (Later I Met Him)” (“Aku Masih Memikirkanmu”) quickly attracted wide attention after release, ranking in Spotify’s Global Viral Top 6. The single surpassed 540 million streams, and more than 2 billion global short-form video impressions. The Indonesian version of “Yi Lu Sheng Hua(Flowers All the Way)”, produced in collaboration with Putri Ariani, the champion singer from Indonesia’s Got Talent, surpassed 50 million streams, helping the work gain recognition on a broader international stage. The Thai version of “Ni Neng Bu Neng Bu Yao Li Kai Wo(Please Don’t Leave Me)”, released in cooperation with a Thai label, surpassed 80 million MV views and inspired more than one million TikTok recreations, becoming a representative case that integrates Thailand’s local cultural expression with international communication capabilities.



印尼版《一路生花》刷榜印尼十余榜单，歌曲登上2023印尼达人秀舞台，成印尼当地励志金曲
The Indonesian version of "Flowers All The Way" topped over ten local music charts. The song was performed on the stage of Indonesia's Got Talent 2023 and became an inspirational hit across Indonesia

构建开放共享的传播生态，推动优质音乐跨地域传播与交流

Building an Open and Shared Dissemination Ecosystem to Promote Cross-Regional Distribution and Exchange of Quality Music

在推动多语种改编作品传播的同时，项目同步构建国际化社交媒体传播体系，推动原创音乐作品触达更广泛用户群体，持续增强不同文化背景受众之间的情感连接与审美共鸣。

依托TikTok、YouTube等平台，《晚风告白》《听说你》《我期待的不是雪》《爱意藏风里》等作品获得广泛传播，在多个国家和地区音乐榜单中取得优异成绩。其中，《我期待的不是雪》成为中国台湾地区单季度最高播放单曲，累计播放量超过2亿次。2025年，酷狗文化联合中国台湾艺人思远、灰灰及头部创作者栗子共同打造《Emo一整夜只因为想你》，歌曲上线后登上中国台湾Spotify热歌榜第87名，并在新加坡、中国香港、马来西亚等多个地区进入Spotify飙升榜、iTunes等榜单，充分展现了跨区域音乐协作与文化交流的活力。

While advancing the dissemination of multilingual adaptations, the project has also built an international social media communication system, enabling original music works to reach a broader user base and continuously strengthening emotional connection and aesthetic resonance among audiences from different cultural backgrounds.

Leveraging platforms such as TikTok and YouTube, works including “Wan Feng Gao Bai (Confession In The Evening Breeze)” “Ting Shuo Ni(Heard About You)” “Wo Qi dai de Bu shi Xue(Not Snow, But U)” and “Ai Yi Cang Feng Li(Love Hidden in the Wind)”, have achieved wide dissemination and excellent chart performance across multiple countries and regions. Among them, “Wo Qi Dai De Bu Shi Xue(Not Snow, But U) ” became the most-streamed single in a single quarter in Taiwan (China), with cumulative plays exceeding 200 million. In 2025, Kugou Culture partnered with Taiwan(China) artists Siyuan and Huihui, together with leading creator Lizi, to produce “Emo Yi Zheng Ye Zhi Yin Wei Xiang Ni(Emo Night-Up All Night Missing You...)” After release, the song ranked No. 87 on the Taiwan (China) Spotify songs chart and entered charts including Spotify Viral and iTunes across multiple regions such as Singapore, Hong Kong (China), and Malaysia, fully demonstrating the vitality of cross-regional music collaboration and cultural exchange.



《我期待的不是雪》揽获全球十余国家和地区数十榜单
"Wo Qi dai de Bu shi Xue(Not Snow, But U)" charted on dozens of charts across more than 10 countries and regions worldwide

以音乐连接世界，形成兼具开放性、共享性和可持续性的交流互鉴成果

Connecting the World Through Music and Delivering Mutual Learning Outcomes Characterized by Openness, Sharing, and Sustainability

项目不仅实现了广泛传播，更通过汇聚全球音乐创作者、促进跨区域协同创作、推动不同文化背景用户共同参与，探索出一条“以旋律为桥、以文化为核”的数字时代国际人文交流新路径。

通过开放共享的平台机制，越来越多创作者、音乐人和用户得以参与文化交流与内容共创，在共同欣赏和传播音乐的过程中增进理解、建立连接。相关实践成果被商务部作为文化交流与产业创新案例推广，酷狗音乐获四部委联合认定为“国家文化出口重点企业”，项目案例同步入选中国国际服务贸易交易会全球服务实践案例。

未来，酷狗音乐“热歌出海”项目将持续深化多语种内容共创、国际平台协同和跨文化合作机制建设，进一步发挥数字音乐连接人心、促进交流、增进互信的重要作用，为推动文明交流互鉴、构建更加开放包容的网络空间贡献力量。

The project has not only achieved broad dissemination, but also brought together global music creators, promoted cross-regional collaborative creation, and encouraged participation from users of different cultural backgrounds, thereby exploring a new pathway for international people-to-people exchange in the digital era—“using melody as the bridge and culture as the core”.

Through an open and shared platform mechanism, an increasing number of creators, musicians, and users have been able to participate in cultural exchange and content co-creation, deepening understanding and building connections through the shared appreciation and dissemination of music. Relevant outcomes have been promoted by the Ministry of Commerce of the People’s Republic of China as a case of cultural exchange and industrial innovation. Kugou Music has also been jointly recognized by four ministries as a “Key Enterprise for National Cultural Exports”, and the project case was simultaneously selected as a Global Service Practice Case of the China International Fair for Trade in Services.

Looking ahead, Kugou Music’s "Taking Hit Songs Global" initiative will continue to deepen multilingual content co-creation, coordination with international platforms, and the development of cross-cultural cooperation mechanisms, further leveraging digital music to connect hearts, promote exchange, and enhance mutual trust, and contributing to mutual learning among civilizations and the building of a more open and inclusive cyberspace.



▲ “酷狗音乐出海”项目获CCTV1、CCTV13双台报道
The "Kugou Music Going Global" project has been reported by both CCTV-1 and CCTV-13.

精品案例

国家哲学社会科学文献中心

National Center for Philosophy and Social Sciences Documentation



▲ 哲学社会科学文献数字化开放共享
Digitized Open Access and Sharing of Philosophy and Social Sciences Literature

申报机构
Applying Institution

中国社会科学院图书馆
CHINESE ACADEMY OF SOCIAL SCIENCES LIBRARY

中国社会科学院图书馆
Chinese Academy of Social Sciences Library

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、德国、法国、日本、俄罗斯等200个国家和地区
Covering 200 countries and regions including the United States, Germany, France, Japan, and Russia

国家哲学社会科学文献中心立足哲学社会科学领域，坚守公益服务定位，构建方便快捷、资源共享的哲学社会科学研究信息化平台。中心以数字化技术搭建文明传播展示窗口，面向社会提供学术资源服务，面向世界传播优质学术成果，推动国际化、多维度的文化交融、学术交流与务实合作。

The National Center for Philosophy and Social Sciences Documentation (NCPSSD) adheres to the principle of public welfare services and focuses on creating an efficient and accessible digital platform for philosophy and social science studies, allowing for sharing of resources. Leveraging digital technologies, it serves as a window for cultural exchange and presentation, providing academic resources to society and promoting high-quality research outputs globally. It facilitates cross-border, multi-dimensional cultural integration, academic dialogue, and practical collaboration.

汇聚全球文献资源，建成国际学术成果展示交流平台

Gathering Global Documentation Resources, Building an International Platform for Academic Exchange

中心收录文献全文数据超2900万条，涵盖期刊、集刊、图书、古籍等多种类型，涉及中文、英文、法语、俄语等十余种语言，成为展示世界各国、各民族优秀文化与学术成果的“百花园”。中心上线英文版网站，还先后走访20多个国家和地区，同联合国达格·哈马舍尔德图书馆、哈佛大学等国际机构及知名高校深化合作，服务国际机构1300余家。一位欧洲汉学图书馆员在交流中感慨：“你们提供的中国学术资源，填补了我们东亚馆藏的许多空白。”类似的“瞬间”在全球200多个国家和地区频繁发生：中心国际访问量年均增长率达19.36%，2025年达到72.08%，所有共建“一带一路”国家均有用户访问，其中72个国家的机构成为机构用户，上海合作组织成员国使用量年增速持续走高。在一次次的握手与对话中，中心为全球文明互鉴铺就了一条跨越时差的“数字桥梁”。

NCPSSD has amassed over 29 million full-text records, covering journals, journal collections, books, and ancient texts, in more than ten languages including Chinese, English, French, Russian, among others—making it a veritable “garden of flowers” that showcases the outstanding cultures and scholarly achievements of nations worldwide. It has launched an official English website and conducted visits to over 20 countries and regions, deepening cooperation with international institutions and leading universities such as the United Nations Dag Hammarskjöld Library and Harvard University, while serving more than 1300 international institutions. A European sinology librarian remarked during an exchange, “The Chinese academic resources you provide fill many gaps in our East Asian holdings”. Similar moments occur frequently across more than 200 countries and regions: international visits have grown at an average annual rate of 19.36%, reaching 72.08% in 2025; all Belt and Road Initiative partner countries have active users, with 72 of them having institutions registered as users; and visits from Shanghai Cooperation Organization member states maintain a robust year-on-year growth trajectory. Through these repeated handshakes and dialogues, NCPSSD has laid a time-zone-spanning “digital bridge” for global mutual learning among civilizations.



▲ 国家哲学社会科学文献中心资源体系
NCPSSD resource system

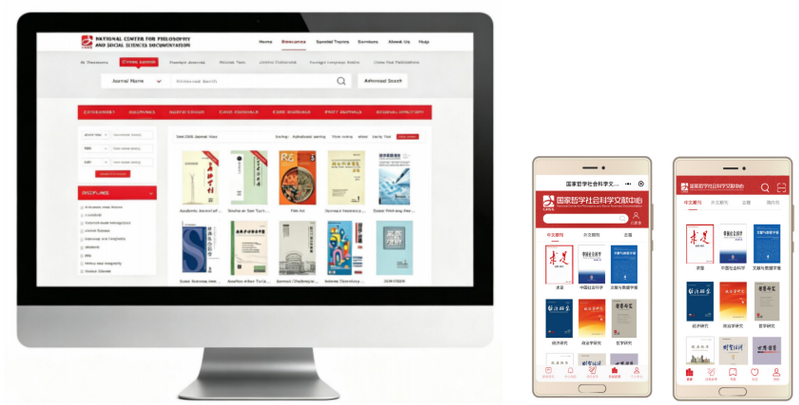
科技与人文“双向奔赴”，打造有温度的学术服务生态

A “Two-Way Journey” of Technology and Humanities, Cultivating a Warm Academic Service Ecosystem

中心紧跟数字浪潮，致力于让知识“活”起来。在服务架构上，门户网站、APP、小程序、镜像系统等多终端协同，率先接入鸿蒙生态，打造一站式数字化学术服务范式，搭建“两地三中心”数据安全架构，保障海量资源稳定传播，让用户随时随地畅游学术海洋。在资源建设上，推出特色专题栏目，上线期刊论文优先发布系统，创新期刊出版传播模式，推进古籍数字化，使传统文化借助数字技术焕发新生。在智能应用上，落地大模型技术开展文献翻译，建设学术文献高质量数据集，推动科技赋能人文、人文滋养科技的双向融合。

Keeping pace with digital trends, NCPSSD strives to truly bring knowledge to life. In its service architecture, it coordinates multiple endpoints—a website, mobile app, WeChat Mini Programs, and mirror systems—and was among the first to integrate into the HarmonyOS ecosystem, establishing a one-stop digital academic service paradigm. A “two locations, three centers” data security framework ensures stable access to vast resources, allowing users to navigate the ocean of scholarship anytime, anywhere.

In resource development, it has launched featured columns, rolled out an Online First Publication system for journal papers to optimize journal publishing and dissemination models, and advanced the digitization of ancient texts, revitalizing traditional culture through digital technologies. In intelligent applications, it deploys large language model-based tools for literature translation and builds a high-quality industry dataset of academic literature, achieving bidirectional integration where technology empowers the humanities and the humanities nourish technology.



国家哲学社会科学文献中心网页、小程序、APP
NCPSSD via Web, WeChat Mini-Program and Mobile App

坚持公益共享普惠，释放平台多元价值，助力文明互鉴与社会发展

Adhering to Public Welfare and Inclusive Sharing, Unleashing the Platform’s Diversified Values to Boost Civilizational Mutual Learning and Social Development

中心始终坚守公益、开放、共享的初心，让学术“飞入寻常百姓家”。主动对接国家开放大学终身教育平台等学习平台和公共文化载体，多次亮相数字中国建设峰会等国家级文化展会，推动哲学社会科学优秀成果全民共享、全球传播。退休老专家来电感谢开放资源，在校学子留言分享论文发表的喜讯，海外学者来信求助当地难获取的文献——这些真实回响，正是普惠价值的生动注脚。目前，中心个人用户超900万人，机构用户9万多家，累计访问量超19.5亿次，文献阅读下载量突破2.4亿次。新媒体运营同样充满巧思，以多样化形式发布学术资源指引与热点内容，推动高质量学术成果通俗化表达、分众化传播、便捷化获取，累计发布各类信息2.2万条、阅读量达1700万次、关注人数突破50万人。这些“轻量化”传播，在普及学术知识、涵养良好社会文化氛围、促进文明交流互鉴等方面持续释放正向价值。

NCPSSD remains true to its founding commitment to public welfare, openness, and sharing, striving to bring scholarship to every household. It actively connects with public education and cultural platforms such the Lifelong Education Platform of the Open University of China, and appears regularly at national cultural events like the Digital China Summit, promoting the universal sharing and global dissemination of outstanding achievements in philosophy and social sciences. Retired experts call to express gratitude for open access; students share news of their published papers; overseas scholars write seeking assistance with locally unavailable documents—these real echoes vividly attest to the value of inclusive service. To date, NCPSSD serves over 9 million individual users and more than 90,000 institutional users, with cumulative visits exceeding 1.95 billion, and document readings and downloads surpassing 240 million. Its new media operations are equally thoughtful, publishing academic resource guides and trending content in diverse formats to facilitate accessible, segmented, and convenient dissemination of high-quality research. It has issued over 22,000 posts, garnered 17 million views, and attracted more than 500,000 followers. These “lightweight” communication efforts continue to deliver positive value in popularizing scholarly knowledge, fostering a healthy social and cultural atmosphere, and advancing mutual learning among civilizations.



国家哲学社会科学文献中心举办/参加交流活动
NCPSSD holding/participating in exchange activities



国家哲学社会科学文献中心节气系列宣传海报
NCPSSD "Solar Terms" promotional poster series

精品案例

Factum 基金会“Selene光度立体成像系统”赋能文化遗产保护

Factum Foundation's Selene Photometric Stereo System and related initiatives



▲ Selene 光度立体成像系统主机。该系统通过相机和专用照明系统记录艺术品的表面，捕捉其质感与细微细节。所得数据用于创建数字孪生。© Factum Foundation
PIC_01 - Selene Photometric Stereo System head. The camera and specialised lighting system record the artwork's surface, capturing its texture and fine details. The resulting data are used to create a digital twin. © Factum Foundation

申报机构
Applying Institution

Factum数字技术保护基金会
Factum Foundation for Digital Technology in Preservation

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖英国、西班牙、意大利、卡塔尔、中国台湾、美国6个国家和地区
Covering six countries and regions including The United Kingdom; Spain; Italy; Qatar; Taiwan, China; The United States

由Factum基金会开发的塞勒涅光度立体系统（PSS）展示了技术创新如何加强文化遗产保护与研究领域的国际合作。通过与全球领先的图书馆、博物馆、大学及文化遗产机构的合作，塞勒涅PSS生成高度详细的数字记录，揭示了此前未被发现的信息，并丰富了集体知识。除了文献记录之外，其互操作性数据集和共享的数字标准为在网络空间构建全球文化平台创造了机遇。在这个平台上，各机构、研究人员和公众能够跨越地理边界交流知识、比较馆藏并参与文化遗产活动，从而促进文化遗产的可及性、创造力以及跨文化对话。

The Selene Photometric Stereo System (PSS), developed by Factum Foundation, demonstrates how technological innovation can strengthen international cooperation in heritage preservation and research. Through collaborations among leading libraries, museums, universities, and heritage institutions worldwide, Selene PSS generates highly detailed digital records that reveal previously hidden information and enrich collective knowledge. Beyond documentation, its interoperable datasets and shared digital standards create opportunities for a global cultural platform in cyberspace, where institutions, researchers, and the public can exchange knowledge, compare collections, and engage with cultural heritage across geographical boundaries, fostering accessibility, creativity, and cross-cultural dialogue.

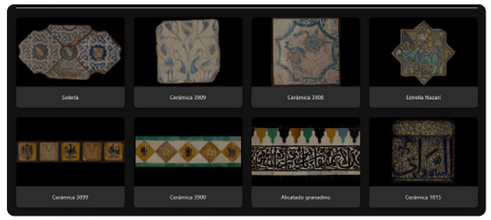
超高分辨率光度立体摄影技术通过国际合作与知识交流，拓展了全球对文化遗产的访问渠道
Ultra-high-resolution photometric stereo expands global access to cultural heritage through international collaboration and knowledge exchange.

由马德里Factum基金会开发的Selene光度立体成像系统（PSS）是一项先进的成像技术，专为手稿、版画、雕刻、绘画和自然标本等低浮雕文化遗产对象的超高清数字化而设计。传统摄影往往将这些对象记录为平面，无法捕捉其细微的纹理和微观地形。Selene PSS通过生成详细的数字记录，揭示了原本不可见的表面特征，从而克服了这一局限。

该技术的国际影响力体现在合作研究项目和全球应用两个方面。通过与博德利图书馆合作开发、并得到海伦·哈姆林信托基金支持的ARCHiOx等项目，该技术促进了不同机构和学科之间的专业知识共享。普林斯顿大学图书馆、大英博物馆、国家美术馆、瓦伦西亚唐·胡安研究所、台北国立大学、伊波吉奥·德伊·克里斯塔利尼以及卡塔尔国家图书馆等机构的部署，彰显了该技术在多元文化背景下的应用。通过实现数据集的互操作性和数字标准的共享，Selene PSS 支持比较研究、国际合作，并推动构建一个更加互联的数字文化生态系统。

Selene Photometric Stereo System (PSS), developed by Factum Foundation in Madrid, is an advanced imaging technology designed for the ultra-high-resolution digitization of low-relief cultural heritage objects such as manuscripts, prints, engravings, paintings and natural specimens. Traditional photography often records these objects as flat surfaces, failing to capture subtle textures and micro-topography. Selene PSS addresses this limitation by producing detailed digital records that reveal otherwise invisible surface features.

Its international dimension is reflected in both collaborative research initiatives and global adoption. Through projects such as ARCHiOx, developed with the Bodleian Libraries and supported by the Helen Hamlyn Trust, the technology facilitates expertise sharing across institutions and disciplines. Installations at institutions including Princeton University Library, the British Museum, the National Gallery of Art, the Instituto Valencia de Don Juan, National Taipei University, the Ipogeo dei Cristallini, and the Qatar National Library demonstrate its use across diverse cultural contexts. By enabling interoperable datasets and shared digital standards, Selene PSS supports comparative research, international cooperation, and the development of a more connected digital cultural ecosystem.



▲ 将 Valencia de Don Juan研究所的馆藏数字化并上线
Bringing the Instituto Valencia de Don Juan collections online. © Factum Foundation



▲ 一个多层视图，展示了14世纪一件安达卢西亚陶瓷的Selene PSS分析结果
A multilayered viewer showing Selene PSS results of an Andalusian ceramic from XIV Century. © Factum Foundation

统一的非接触式成像工作流程将技术创新与协作实施相结合

A unified non-contact imaging workflow combines technical innovation with collaborative implementation.

Selene PSS 是一款光度立体成像系统，它结合了多方向光线采集与先进算法，能够以超高清分辨率重建表面几何形状和纹理。通过生成深度图、反照率图和法线图，该系统能够分析小于人类头发宽度五分之一的表面细微变化。

其关键创新在于将色彩捕捉与微地形分析整合到单一的非接触式工作流程中。该系统结合了图像采集、计算重建和用户友好的软件，可生成详细的数据集，支持可视化、分析以及与在线平台的集成，同时确保易碎物品的安全。

通过“ARCHiOx”合作计划，该技术得到了进一步增强，跨学科团队在此过程中对硬件和软件均进行了优化。该系统的模块化架构使其能够适应不同类型的文物和材料，而便携式配置则既可在工作室中使用，也可直接在文化遗产现场使用。包括兼容 IIIF 的查看器以及“Strata Viewer”等交互式 3D 应用程序在内的配套工具，进一步拓展了访问渠道并促进了学术参与。

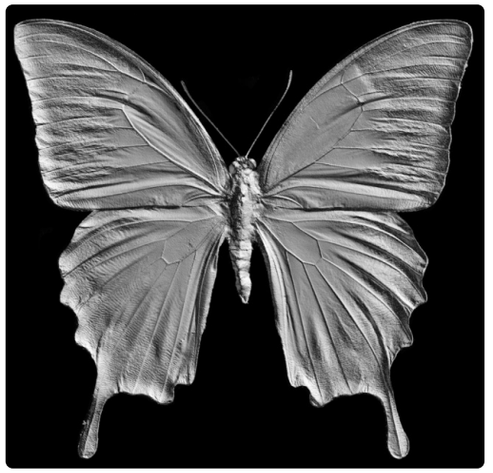
Selene PSS is a photometric stereo imaging system that combines multiple directional light captures with advanced algorithms to reconstruct surface geometry and texture at ultra-high resolution. By generating depth, albedo, and normal maps, it enables the analysis of surface variations smaller than one-fifth the width of a human hair.

Its key innovation is the integration of colour capture and micro-topographic analysis within a single, non-contact workflow. Combining image acquisition, computational reconstruction, and user-friendly software, the system produces detailed datasets that support visualization, analysis, and integration with online platforms while ensuring the safety of fragile objects.

The technology has been further enhanced through the collaborative ARCHiOx initiative, where interdisciplinary teams have refined both hardware and software. The system's modular architecture allows adaptation to different object types and materials, while portable configurations enable use both in studios and directly at heritage sites. Complementary tools, including IIIF-compatible viewers and interactive 3D applications such as the Strata Viewer, further expand accessibility and scholarly engagement.



▲ 来自Selene PSS的牛津大学自然历史博物馆藏品的反照率（颜色信息）
Albedo (colour information) from Selene PSS of a specimen from Oxford University Museum of Natural History. © ARCHiOx



▲ 来自Selene PSS的牛津大学自然历史博物馆藏品的阴影渲染图（去除颜色的3D信息）。
Shaded render (3D information deprived of the colour) from Selene PSS of a specimen from Oxford University Museum of Natural History. © ARCHiOx

Selene PSS 通过促进遗产的包容性获取并支持新的研究机会，创造社会、文化和经济价值

Selene PSS generates social, cultural, and economic value by promoting inclusive access to heritage and supporting new research opportunities.

通过为易损文物创建高精度的数字记录，该系统在促进长期保存的同时，减少了实物处理，并通过在线平台扩大了公众的访问渠道。

其包容性方法使全球的研究人员、学生和公众能够不受地理位置限制地探索文化遗产藏品。超高清成像技术还带来了新的发现，揭示了中世纪手稿中此前未被察觉的注释以及历史铜版上的隐藏雕刻，从而丰富了我们对过去社会和文化历史的理解。

从经济角度来看，Selene PSS 为数字遗产服务、展览设计、高质量复制品制作和 3D 打印领域创造了机遇。采用该系统的机构将受益于更强大的研究和保护能力、更高的知名度，以及在吸引资金、建立合作伙伴关系和拓展新受众方面更大的潜力。

By creating highly accurate digital records of fragile artifacts, the system contributes to long-term preservation while reducing physical handling and expanding access through online platforms.

Its inclusive approach enables researchers, students, and the public worldwide to explore cultural heritage collections regardless of geographic location. Ultra-high-resolution imaging has also generated new insights, revealing previously unseen annotations in medieval manuscripts and hidden engravings on historical copper plates, enriching our understanding of past societies and cultural histories.

Economically, Selene PSS creates opportunities in digital heritage services, exhibition design, high-quality reproduction, and 3D printing. Adopting institutions benefit from stronger research and conservation capabilities, increased visibility, and greater potential to attract funding, partnerships, and new audiences.



▲ 这是普林斯顿大学菲尔斯通图书馆藏一枚印章的IIIF兼容浏览器，该印章使用Selene PSS进行了数字化处理。借助“手电筒”工具，用户可以在数字环境中仔细观察该文物，仿佛亲手触摸它一般。
IIIF compatible viewer of a seal from Firestone's Library (Princeton University) digitised with Selene PSS. The torch tool allows users to inspect the object in the digital environment as if they were handling it in person. © Princeton University Library

国际网络和共同标准有助于增强数字文化遗产的长期可持续性及其全球影响力

International networks and shared standards strengthen the long-term sustainability and global reach of digital cultural heritage.

除了技术成就之外，Selene PSS 还通过共享标准、培训以及 GLAM 机构之间的合作，并借助“Selene Circle”倡议，助力构建全球文化遗产网络。随着该系统的应用日益广泛，它正在跨越国界连接各类馆藏和专业知识，为建立一个互联互通的文化生态系统奠定基础——在这个生态系统中，机构、研究人员和公众能够访问、探索共享的文化遗产资源，并从中创造新知识。

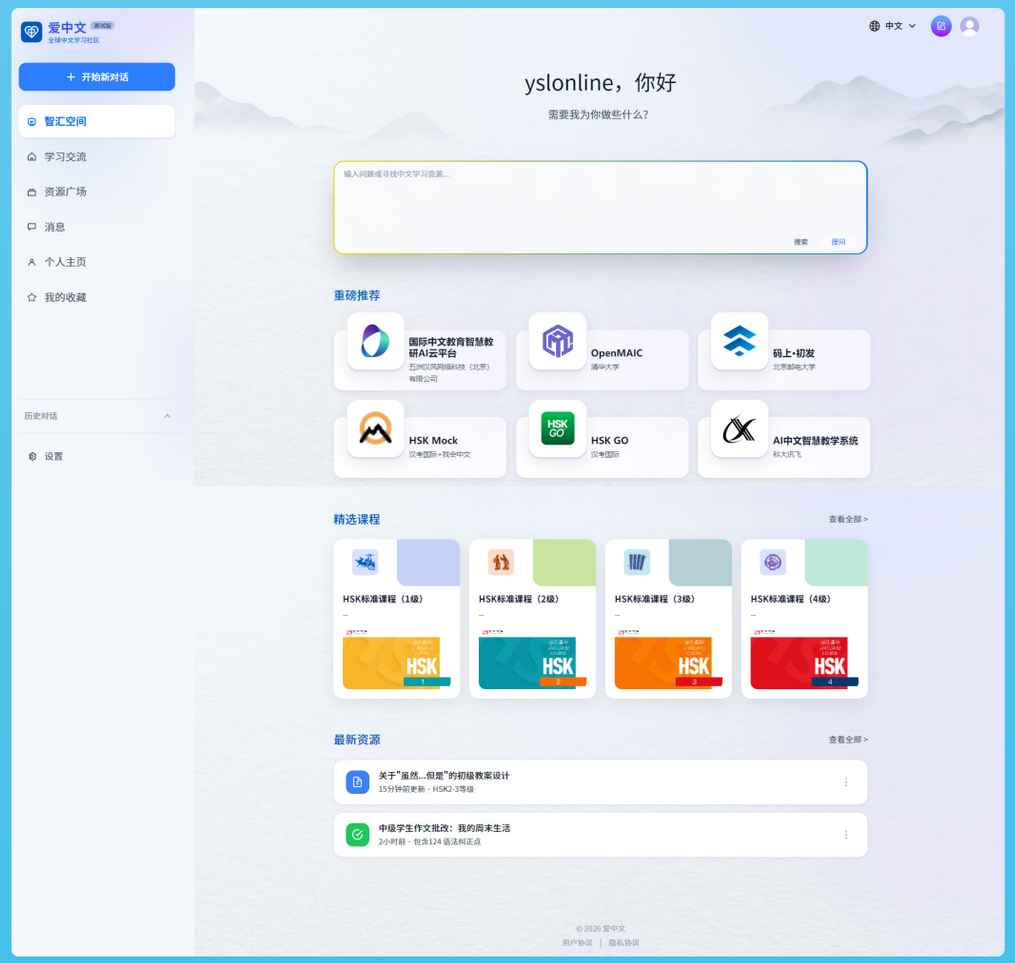
Beyond its technological achievements, Selene PSS is helping build a global heritage network through shared standards, training, and collaboration among GLAM institutions, also through the Selene Circle initiative. As its adoption grows, the system is connecting collections and expertise across borders, creating the foundations for an interconnected cultural ecosystem where institutions, researchers, and the public can access, explore, and generate new knowledge from shared heritage resources.



▲ Selene PSS | Portable 正在博德利图书馆举办的会议上进行展示
Selene PSS | Portable being presented at a conference at Bodleian Libraries. © ARCHiOx

“爱中文”学习社区，打造数智赋能的全球中文教育新生态

The iChinese Learning Community: Building a new global Chinese education ecosystem empowered by digital and intelligent technologies



▲ “爱中文”学习社区首页
Homepage of the iChinese Learning Community

申报机构
Applying Institution

教育部中外语言交流合作中心
Center for Language Education and Cooperation, Ministry of Education of China

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、巴西、澳大利亚、南非、德国、俄罗斯、沙特阿拉伯等149个国家和地区

Covering 149 countries and regions including the United States, Brazil, Australia, South Africa, Germany, Russia, and Saudi Arabia

为满足全球持续增长的中文学习需求，2026年5月，教育部中外语言交流合作中心正式发布“爱中文”学习社区。作为集成化、智能化、国际化的“一站式”中文学习平台，“爱中文”以AI为核心驱动，推动智能技术与中文教育全要素融合、全过程贯通、全场景覆盖。

To meet the ever-growing global demand for Chinese language learning, the Center for Language Education and Cooperation (CLEC) officially launched iChinese learning community in May 2026. As an integrated, intelligent, and internationally oriented one-stop platform for Chinese learning, iChinese is driven by AI at its core, seamlessly integrating intelligent technologies into every element, process, and scenario of Chinese language education.

聚焦全球需求，构建“一站式”综合服务平台

Meeting Global Needs: A One-Stop Service Platform

“爱中文”作为面向全球中文学习者、教师和教育机构的数智化中文学习综合服务平台，集资源汇聚、智能服务、交流互动、成果共享融为一体。设立三大核心板块：“智汇空间”支持自然语言交互与实时问答，根据用户学习需求，智能推送个性化学习资源，助力实现“一人一策”精准导学。“学习交流”支持实时发帖互动、热门话题推送、热点资讯速递，用户可即时分享学习及教学心得、发布自主或协同研发的数智化教学成果，打造全天候陪伴式学习体验。“资源广场”整合海量优质课程资源超1.5万节，共享全球优质中文教育资源，推动形成丰富多元、持续更新、一站式可及的资源供给体系。平台支持中、英、西、法、俄、阿拉伯语等17种语言切换和实时翻译，消除跨国交流的语言障碍。

As a digital and intelligent integrated service platform designed for global Chinese learners, teachers, and educational institutions, iChinese seamlessly integrates resource aggregation, AI-powered services, interactive communication, and outcome sharing into one cohesive ecosystem. The platform features three core sections:

“AI Assistant” supports natural language interaction and real-time Q&A. It intelligently recommends personalized learning resources and delivers tailored guidance based on individual learning needs, empowering each learner with a "one-learner, one-pathway" learning journey.

“Learning Exchange” supports real-time posting and interaction, trending topic feeds, and news updates. Users can instantly share learning and teaching insights and publish digital teaching outcomes developed individually or in collaboration, fostering a round-the-clock, supportive learning experience.

“Resources” offers over 15,000 high-quality courses and makes premium Chinese language teaching resources from around the world available to all, building a diverse, up-to-date, one-stop resource ecosystem for global learners.

The platform supports 17 languages, including Chinese, English, Spanish, French, Russian, and Arabic, with real-time translation and seamless switching, enabling smooth, natural communication across borders.



“爱中文”学习社区“学习交流”页面
The Learning Exchange Page of the iChinese Learning Community

智能驱动，构建“AI+生态”三位一体创新体系

AI-Driven, Ecologically Integrated: A Three-pillar Innovation System

“爱中文”突破传统以教师和课程为中心的单向供给模式，创新构建了“AI引擎—弹性架构—开放生态”三位一体的技术体系。一是AI深度融合应用。以国际中文教育知识图谱和语料库为底层支撑，结合通用大模型训练形成专业知识底座，通过智能问答、个性化推荐、实时翻译、智能教案生成、课件自动创作等教学智能工具，推动实现“千人千面”的智慧学习体验。二是弹性技术架构。平台采用模块化和低耦合的微服务设计，核心服务通过API方式封装，具备快速迭代和灵活扩展能力，可持续对接前沿技术成果。三是开放式共创生态。平台向全球教育机构和企业开放入驻通道，最大限度激发市场创造力和社会参与智慧，形成“品牌引领+生态共建”的可持续运营模式，推动深化资源共享、数据互联、标准互通，共建规范协同、互利共赢的数智化生态社区。

iChinese transcends the traditional one-way supply model centered on teachers and courses, innovatively establishing a three-pillar technical system comprising an "AI Engine, Flexible Architecture, and Open Ecosystem".

Deep Integration of AI Applications: Underpinned by a knowledge graph and corpus specifically designed for international Chinese language education, and fine-tuned with large language models, the platform forms a specialized knowledge base. Through intelligent teaching tools—such as AI-powered Q&A, personalized recommendations, real-time translation, automated lesson planning, and courseware creation—it delivers a personalized, "thousand-learners, thousand-pathways" smart learning experience.

Flexible Technical Architecture: The platform adopts a modular and loosely coupled microservices design, with core services encapsulated via APIs. This enables rapid iteration and flexible scalability, ensuring seamless integration with cutting-edge technological advancements.

Open Co-creation Ecosystem: The platform opens access to global educational institutions and enterprises, encouraging private-sector participation and harnessing collective market vitality. It fosters a sustainable operational model of "Guided Co-creation" —where public-sector guidance and private-sector participation come together to grow the community brand—promoting deeper resource sharing, data interconnectivity, and standard alignment, and ultimately building a well-regulated, collaborative, and mutually beneficial intelligent digital ecosystem.



“爱中文”学习社区“智汇空间”页面
The AI Assistant Page of the iChinese Learning Community

惠及全球，提升中国语言文化国际影响力

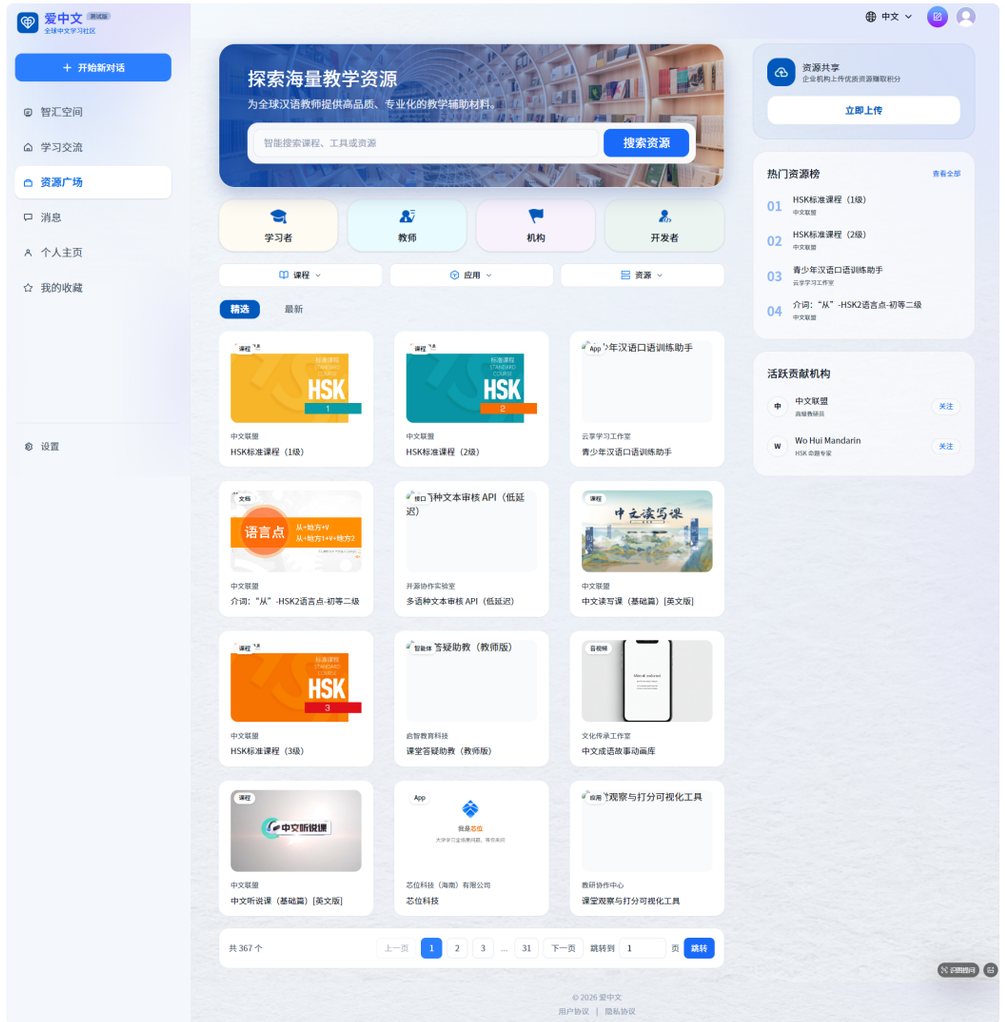
Serving Global Learners, Advancing Chinese Language and Culture

“爱中文”通过公益与市场相结合的模式，大幅降低了全球用户获取优质中文教育资源的门槛。平台已汇聚全球超120家高校、企业及中文教育机构入驻，覆盖全球149个国家和地区，到2030年预计可覆盖全球200个以上国家和地区，服务全球中文学习者超3000万人。

“爱中文”学习社区的启动，标志着中文教育从单向传授向多向互动、从封闭空间向线上线下融合的无界课堂的积极转变和探索实践，充分体现了数智时代以用户为中心、以交互为驱动的教育发展新方向。“爱中文”学习社区不仅是一个资源聚合平台，更是一个激发灵感、共享成果、持续生长的中文教育新生态，推动构建各国中文教育成果汇聚、展示和交流平台，以中文为桥促进各国文明交流互鉴，以数智之力推动优质教育成果普惠全球。

iChinese significantly lowers the barriers to high-quality Chinese language education resources for global users through a model that offers both free and premium content. The platform has already brought together over 120 universities, enterprises, and Chinese language education institutions from around the world, reaching 149 countries and regions. By 2030, it is expected to expand to over 200 countries and regions, serving more than 30 million Chinese language learners worldwide.

The launch of the iChinese Learning Community marks a significant transition and pioneering initiative in Chinese education—shifting from one-way instruction to multi-directional interaction, and from closed spaces to a borderless classroom that seamlessly integrates online and offline learning. It represents a forward-looking shift toward a new, user-centered, interaction-driven educational paradigm in the digital age. More than just a resource aggregation platform, iChinese is a vibrant new ecosystem for Chinese education that inspires innovation, shares outcomes, and continuously grows. It facilitates the building a global platform for gathering, showcasing, and exchanging Chinese education outcomes, using Chinese as a bridge to promote mutual learning among civilizations, and leveraging digital intelligence to make premium educational resources accessible to the world.



“爱中文”学习社区“资源广场”页面
The Resources Page of the iChinese Learning Community

“友好东盟”系列网络国际传播活动

The "Friendly ASEAN" Series of Online International Communication Activities



▲ 以数字连线为纽带，呈现中国与东盟国家青年跨越山海、云端相聚的场景，象征“友好东盟”活动以网络空间促进民心相通。
Bound by digital connections, young people from China and ASEAN countries come together across mountains and seas in cyberspace, symbolizing how the "Friendly ASEAN" initiative fosters people-to-people bonds through the internet.

申报机构

Applying Institution

广西日报传媒集团

Guangxi Daily Media Group

其他参与机构

Other Participating Organizations

广西壮族自治区互联网信息办公室、广西云数字媒体集团、广西国际传播中心、南宁市互联网信息办公室、南宁国际传播中心、越南广宁省传媒中心、越南国家电视台、越南之声、柬埔寨《柬华日报》、柬埔寨《柬中时报》、老挝《老中商界》、老挝国家电视台、泰国大众传播机构、泰国《星暹日报》、泰国之眼、泰鼎东盟文化有限公司、马来西亚《光华日报》、马来西亚《诗华日报》、新加坡眼、缅甸未来新闻社、缅甸国家广播电视台、印尼国家电视台、亿乐荣电视台、印尼印华日报、东帝汶国家通讯社、菲中电视台、新西兰channel33中文电视台、南合联盟澳大利亚天和电视台、加拿大金秋兴华传媒中心、香港国际卫视、澳门广播电视股份有限公司

Cyberspace Administration of Guangxi Zhuang Autonomous Region; Guangxi Cloud Digital Media Group; Guangxi International Communication Center; Cyberspace Administration of Nanning; Nanning International Communication Center; Quang Ninh Media Group; Vietnam Television; Voice of Vietnam; Jianhua Daily, Cambodia; The Cambodia China Times; Lao-China Business; Lao National Television; Mass Communications Organization of Thailand; Sing Sian Yer Pao Daily News; Eye of Thailand; Thai Biz Panorama Co., Ltd.; Kwong Wah Yit Poh, Malaysia; See Hua Daily News, Malaysia; Singapore Eye; Myanmar Future News; Myanmar Radio and Television / MRTV; Televisi Republik Indonesia; El John TV; Harian InHua, Indonesia; TATOLI; Philippines-China TV; Channel 33 Chinese Television, New Zealand; Tianhe Television of South Union,Australia; Jinqiu Xinghua Media Center,Canada; Hong Kong International TV; Teledifusão de Macau, S.A.

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖中国、越南、柬埔寨、老挝、泰国、中国香港、中国澳门等15个国家和地区

Covering 15 countries and regions, including China；Vietnam；Cambodia；Laos；Thailand；Hong Kong, China；Macau, China

立足中国广西与东盟陆海相连的区位优势，以中越建交75周年暨“中越人文交流年”为契机，以AI赋能、青年共创开展“友好东盟”系列活动，推动东盟青年从旁观者变为讲述者，搭建起文明互鉴的网上共享平台。

Leveraging Guangxi's land-sea link to ASEAN and seizing the occasion of the 75th anniversary of the establishment of China-Vietnam diplomatic relations and the "China-Vietnam Year of People-to-People Exchanges," the "Friendly ASEAN" Series of Online International Communication Activities uses AI-driven innovation and youth co-creation to turn ASEAN youth from bystanders into storytellers and build a shared online platform for mutual learning among civilizations.

立足中国—东盟人文交流前沿，以AI赋能构建跨国民间友好传播网络

Standing at the forefront of China-ASEAN people-to-people and cultural exchanges, the initiative leverages AI to build a cross-border people-to-people friendship communication network.

一是数智赋能助力文化全球化。依托人工智能打造《友好东盟　越来越好》AI音乐专辑、东盟声音博物馆等数字文化产品。《傩戏》《孤单旅行团》等非遗微短剧凭借地域文化特色引起全球网友共鸣。其中《傩戏》全网播放超10亿次，掀起东盟青年二次创作热潮，实现非遗文化跨国破圈传播；

二是青年互动激发交流活力。依托多语种社交话题、短视频吸引东盟青年深度参与。举办中越青年媒体人交流会、“春天的旋律”跨国春晚等品牌活动，数千名来自中国和世界各地的青年踊跃参与，持续畅通中国—东盟民间双向交流渠道；

三是机制共建深化媒体合作。落地中国—东盟AI内容共创平台，联合13个国家地区的24家主流媒体建立常态化合作机制。携手越南媒体共创《“越”过山海，云瞰美景！》等AI作品，构建数字文化合作新生态。

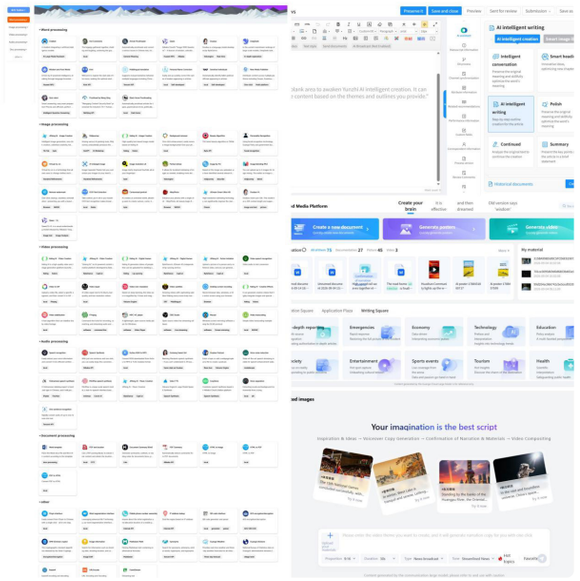
First, digital intelligence empowers and advances cultural globalization.Relying on AI technologies, a series of digital cultural products have been created, including the Friendly ASEAN, Better and better AI music album and the ASEAN Sound Museum. Micro-dramas featuring intangible cultural heritage, such as Nuo Opera and The Lonely Travel Group, have resonated strongly with global netizens thanks to their distinctive regional cultural characteristics. Among them,Nuo Opera has garnered over one billion views online, sparking a wave of youth-led re-creation across ASEAN countries and enabling the cross-border, cross-cultural dissemination of intangible cultural heritage.

Second, youth interaction fuels the vitality of people-to-people exchanges.Through multilingual social media topics and short video campaigns, young people from ASEAN countries have been deeply engaged. Brand events such as the China-Vietnam Young Media Professionals Exchange and the “Melody of Spring” Transnational Spring Festival Gala have drawn the active participation of thousands of young people from China and around the world, continuously opening up two-way channels for China-ASEAN people-to-people exchanges.

Third, institutionalized cooperation deepens media collaboration. The China-ASEAN AI Content Co-Creation Platform has been launched, establishing a regular cooperation mechanism with 24 mainstream media organizations from 13 countries and regions. In partnership with Vietnamese media, joint efforts have produced AI-powered works such as Beyond Mountains and Seas: A Cloud's-Eye View of China-Vietnam Splendor building a new ecosystem for digital cultural cooperation.



▲ 通过线上数字传播、线下交流活动，实现中国与东盟多国媒体深度合作共创。
Through online digital communication and offline exchanges, media outlets from China and multiple ASEAN countries engage in deep collaborative content creation.



通过建设中国—东盟AI内容共创平台，我们向东盟媒体开放全流程AI内容生产服务，从而共同创作并分享中国与东盟的精彩故事。
By building the China-ASEAN AI Content Co-Creation Platform, we open full-process AI content production services to ASEAN media, empowering joint creation and sharing of compelling stories about China and ASEAN.

在数字文化交流中重塑国际传播内容、技术与合作机制

Reshaping international communication content, technology and cooperation mechanisms through digital cultural exchange.

一是内容形态创新。融合广西边海文化与非遗资源，运用AIGC等技术重构文化产品，让东盟青年在碎片化数字场景中认同中华文化。以非遗微短剧为情感纽带激发共鸣，引导东盟青年自发创作，实现从“被动接受”到“主动表达”的跃升；

二是传播模式创新。运营多语种社交话题并发起挑战赛，引导东盟青年深度参与内容共创；线下举办青年媒体交流会、跨国春晚等活动，累计吸引数千名全球青年参与，构建起跨国青年友好交流社区；

三是合作机制创新。构建“内容共创、技术共享、人才共育”的合作生态，建成区域性AI内容共创平台，落地多语种翻译、智能画面生成等模型。面向越南、印尼、柬埔寨等6国开展AI培训、“青年导演计划”、跨境主播训练营等，培育数百名数字传播人才，实现从“输血式供给”向“造血式共建”升级。

First, innovation in content formats. By integrating Guangxi’s border and coastal culture with its intangible cultural heritage resources and leveraging technologies such as AIGC to reimagine cultural products, the project helps ASEAN youth develop a cultural affinity with Chinese culture within fragmented digital environments. Using micro-dramas featuring intangible cultural heritage as emotional bonds to spark resonance, it guides ASEAN youth toward spontaneous content creation, achieving a leap from "passive reception" to “active expression”.

Second, innovation in dissemination models.The project curates multilingual social media topics and launches challenge campaigns to encourage the deep participation of ASEAN youth in content co-creation. Offline events, such as youth media exchange forums and transnational Spring Festival galas, have attracted thousands of global youth,fostering a transnational youth community for friendly exchange.

Third, innovation in cooperation mechanisms. The project has established a collaborative ecosystem centered on “content co-creation, technology sharing, and talent co-development”, launched a regional AI content co-creation platform, and deployed models for multilingual translation and intelligent image generation. In six countries, including Vietnam, Indonesia, and Cambodia, it has launched AI technology training programs, the “Young Directors Program”, and cross-border live-streamer training camps, cultivating hundreds of digital communication professionals. This marks a shift from externally supplied support to self-sustained co-creation.



▲ 开展AI赋能国际传播人才培训，培育复合型人才，支撑中国—东盟内容共创。
Conducting AI-empowered training programs for international communication professionals to cultivate versatile talents and support China-ASEAN content co-creation.



▲ 《友好东盟 越来越好》AI音乐专辑。
"Friendly ASEAN:Better and Better" — AI Music Album

全平台传播量突破20亿次，以数字普惠践行网络空间命运共同体理念

Reaching over 2 billion views across platforms, practicing the vision of a community with a shared future in cyberspace through digital inclusion.

一是传播成效显著。全平台累计阅读量突破20亿次，覆盖20多个国家和地区。非遗微短剧《傩戏》传播量超10亿人次；《孤单旅行团》在微短剧平台Stardust TV播放量达5亿次；中越青年媒体人交流会吸引全球680家媒体聚焦报道，相关内容阅读量超3.86亿人次；跨国春晚吸引全球超158家媒体机构参与，话题曝光量超1.33亿次。

二是深化技术普惠。活动坚持技术普惠与能力共建，搭建AI内容共创平台，帮助东盟媒体提升自主传播水平。依托媒体合作机制，面向东盟国家开展AI技能培训、“青年导演计划”与跨境主播训练营，邀请东盟导演、编剧来广西采风，联合摄制微短剧等，累计为东盟各国培育数百名数字传媒与跨境电商复合型人才，夯实区域传播合作基础。

First, outreach efforts have yielded remarkable results.Cumulative views across all platforms exceeded 2 billion, reaching more than 20 countries and regions. The intangible cultural heritage micro-drama Nuo Opera garnered over 1 billion views;The Lonely Travel Group reached 500 million views on the micro-drama platform Stardust TV; the China-Vietnam Young Media Professionals Exchange coverage from 680 media outlets worldwide, with related content garnering over 386 million views; the Transnational Spring Festival Gala drew participation from more than 158 media organizations globally, generating over 133 million topic impressions.

Second, the initiative advanced technology accessibility and inclusion. The initiative has prioritized technology accessibility and capacity-building, establishing an AI content co-creation platform to help ASEAN media enhance their independent communication capabilities. Leveraging media cooperation mechanisms, the initiative has conducted AI skills training, the “Young Directors Program”, and cross-border live-streaming training camps for ASEAN countries. It has invited ASEAN directors and screenwriters to Guangxi for field research and collaborated on the production of high-quality micro-dramas. These efforts have cumulatively cultivated hundreds of versatile professionals in digital media and cross-border e-commerce across ASEAN nations, solidifying the foundation for regional communication cooperation.



▲ “对话新时代”中越青年媒体人交流会（越南河内会场）。
"Dialogue with the New Era" China-Vietnam Young Media Professionals Exchange (Hanoi Venue, Vietnam)



▲ “对话新时代”中越青年媒体人交流会（中国广西·南宁开放麦）。
"Dialogue with the New Era" China-Vietnam Young Media Professionals Exchange (Open Mic, Nanning, Guangxi, China)

非遗文化跨国破圈，中国故事引发东盟青年共鸣

Intangible heritage travels across borders as Chinese stories resonate with ASEAN youth.

文化跨国破圈，《傩戏》等作品掀起东盟青年二次创作热潮，实现中华优秀传统文化在网络空间的国际化表达。相关实践入选2026年中国网络文明建设优秀案例，并与多国媒体联合出品“越”过山海等AI作品，为东盟国家媒体数字化转型提供了可借鉴的合作范式。

The initiative has enabled intangible cultural heritage to resonate across borders: Nuo Opera and other works have sparked a wave of youth-led re-creation, presenting traditional Chinese culture to global online audiences. Selected as an Outstanding Case of National Internet Civilization Development in 2026, it has also co-produced AI works such as Beyond Mountains and Seas: A Cloud's-Eye View of China-Vietnam Splendor with partner media, offering a replicable model for the digital transformation of media in ASEAN countries.



▲ 微短剧《孤单旅行团》海报。
The Lonely Travel Group — Micro-Drama Poster



▲ 非遗微短剧《傩戏》海报。
Nuo Opera — Intangible Cultural Heritage Micro-Drama Poster

“Path Seekers问道中国”网络国际传播融媒项目

"Path Seekers" video series and online communication campaign



▲ “Path Seekers问道中国”主题海报
Theme poster of “Path Seekers”

申报机构
Applying Institution

新华报业传媒集团
Xinhua Daily Media Group

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国、法国、德国、西班牙、意大利、越南、泰国、老挝、缅甸等国家和地区

Covering countries and regions including China, the United States, France, Germany, Spain, Italy, Vietnam, Thailand, Laos, and Myanmar

全球文明倡议倡导尊重文明多样性、推动不同文明平等对话。古道作为文化的凝结体，留存着文明交流的印记。“Path Seekers问道中国”网络国际传播融媒项目以徒步探访为纽带，将中国古道转化为跨文明对话的开放场域，探索网络空间命运共同体理念在国际传播中的创新实践，促进交流互鉴。

The Global Civilization Initiative advocates respecting diversity and fostering equal dialogue among cultures. As tangible manifestations of history and cultures, ancient roads bear the lasting traces of cross-cultural exchange. Through the hiking on several famous ancient Chinese roads, the “Path Seekers” video series and online communication campaign transforms these ancient paths into open arenas for cross-civilization dialogue. It explores innovative approaches to practicing the vision of a community with a shared future in cyberspace, facilitating mutual learning and cultural engagement.

多国徒步者行走中国古道，以跨文明的真实对话构建网络空间人文交流新范式

Hikers from different cultural backgrounds journey across China's ancient roads, shaping a new paradigm for cyberspace cultural exchange through cross-cultural dialogue

2024年4月至6月，来自法国的大卫、开弥、麦子和来自美国的苏平，与中国文史专家龚良组成“Path Seekers问道中国”徒步小组。他们分赴中国云南、四川、江西和大运河——大卫在茶马古道遗迹上循着茶香追溯人们通过交换物资追求美好生活；苏平深入古蜀道，用镜头记录古今交通网络的交织；陶艺家开弥走进景德镇的高岭古道，感受古老技艺的匠心传承；法国人麦子沿着中国大运河江苏段，对比家乡米迪运河与中国大运河的异同，感受世界遗产的澎湃活力。基于“问道”之旅制作的4集多语种纪录片面向全球传播，激发网友对古道所承载的历史文化、以及其在促进不同文化交汇交融方面的分享与讨论。

From April to June 2024, David, Camille, and Matthieu from France, as well as Nathan from the US, joined Chinese cultural scholar Gong Liang to form the "Path Seekers" hiking team and explore distinct historical routes across China.

David retraced the ancient Tea Horse Road in Yunnan to discover how people's aspirations for a better life boost barter trade along the route; Nathan ventured into the Shu Roads, capturing the seamless intersection of ancient and modern transportation networks; ceramics artist Camille visited the Kaolin Road in Jingdezhen to experience the living heritage of ancient craftsmanship; and Matthieu, who grew up along the Canal du Midi in France, travelled along the Jiangsu section of China’s Grand Canal to witness the vibrant energy as a World Heritage site.

A four-episode multilingual video series based on their journeys was distributed globally through media outlets of the Xinhua Daily Media Group and social media platforms, sparking widespread discussion and engagement surrounding the rich history of these ancient roads and their modern role in connecting diverse cultures.



“问道中国”多语种纪录片分集封面
Cover images of the “PathSeekers” series videos

以“行进式传播+沉浸式体验+多语种复调”构建全球文明对话的网络空间

An attempt to construct a cyberspace for global dialogue via on-the-move broadcasts, immersive experiences, and multilingual distribution

实施途径上，项目采取“1+N”组合方式——1位中国文史专家与多位不同文化背景的徒步者同行。全程跟拍并直播体验过程，让传播过程本身成为传播内容；后期制作中英双语纪录片，并以英、法、西、德等多语种传播，通过网络媒体和国际社交平台持续传播。

创新点体现在三个层面：叙事创新——“道”的双关既指有形古道，也寓指发展道路；视角创新——充分给予国际嘉宾体验权与话语权，不干预只陪伴；传播创新——行进式直播与多语种复调传播相结合，让全球受众实时参与。 将徒步古道转化为全球共享的“文化路书”，让文明对话在行走中自然发生。

The project adopted a "1+N" structure, pairing one Chinese cultural expert with multiple hikers from diverse backgrounds. Real-time filming and live streaming turned the journey itself into the primary content. In post-production, a bilingual (Chinese-English) flagship video series was produced and distributed globally in languages including French, Spanish, and German, maintaining continuous global engagement across digital media and international social platforms.

Key Innovations include:

· Narration: The concept of Dao ("path") carries a double meaning. It refers to both physical ancient routes and the methodology of development.

· Perspective: The hikers were neither acting nor reading lines but free to experience and express.

· Distribution: Combining mobile live streaming with multilingual distribution allowed global audiences to participate in real time.

Ultimately, the project turned ancient routes into a key to discover the profound cultural context of a certain region, encouraging dialogue between civilizations to unfold organically on the move.



▲ 《问道中国·运河水道篇》行走体验和拍摄中，直播桃花坞木板年画体验过程。
A frame from the livestream about Taohuawu Woodcut New Year prints in Suzhou during the “PathSeekers” hiking.



▲ 徒步者（左）与行走中充分体验，“不干预只陪伴”的创作视角自然引发具有活力的跨文化交流。
The hikers, or PathSeekers, were free to experience and express, which encouraged natural flow of cross-cultural communication.

以古道为媒，在全球网络空间架起文明交流互鉴的数字化桥梁

A bridge between civilizations across global cyberspace through the digital power of the ancient roads

本项目以最小干预、最大诚意，让全球受众在行走与观看中自发完成对中华文明的“认知拼图”。

社会价值层面，项目实现了中华文明的全球化柔性传播。美联社、福克斯新闻、欧罗巴通讯社等622家国际主流媒体转载，覆盖欧洲、北美受众近4亿，总阅读量约5.2亿。

经济价值层面，项目积累了可复用的多语种数字内容资产与跨区域协作经验，为文旅融合与国际文化交流产品的持续孵化奠定了基础。项目模式具有可复制性：任何国家和地区的古道、遗产廊道均可参照此范式开展跨文明对话，让“网络空间命运共同体”从理念落地为可感知、可参与的全球行动。

The project enabled global audiences to gain a deeper understanding of Chinese civilization.

The project achieved soft, organic global outreach for Chinese culture. It was covered and republished by 622 major international news outlets, including the Associated Press, Fox News, and Europa Press, reaching nearly 400 million people across Europe and North America, with over 520 million total impressions.

The initiative built a reusable asset bank of multilingual digital content and established a model for cross-regional collaboration, laying a solid foundation for future cultural tourism and international exchange products. The model is highly scalable: heritage corridors and ancient routes anywhere in the world can replicate this framework to foster cross-civilization dialogue, turning the vision of building a community with a shared future in cyberspace into a tangible, participatory global action.



▲ 项目成果在国际主流媒体和社交媒体平台分发传播，在网络平台构建起关于文明传承的探讨。
Project results have been circulated on both mainstream media and social media platforms, fostering dialogues on cultural heritage within the digital space.

安徽大学“模拟上合组织”青年会议——数字时代青年共建网络空间命运共同体的创新实践

Model SCO Youth Conference at Anhui University: An Innovative Practice in Youth Collaboration to Build a Community with a Shared Future in Cyberspace in the Digital Age



▲ 首届安徽大学“模拟上合组织”青年会议现场，各国青年代表齐聚一堂，上海合作组织前秘书长、乌兹别克斯坦前外交部长弗拉基米尔·诺罗夫先生发表视频致辞。
At the inaugural Model SCO Youth Conference at Anhui University, youth delegates from different countries gathered together, while Mr. Vladimir Norov, former Secretary-General of the Shanghai Cooperation Organization and former Minister of Foreign Affairs of Uzbekistan, delivered a video address.

申报机构
Applying Institution

安徽大学
Anhui University

其他参与机构
Other Participating Organizations

上合国家青年平台
SCOLAR Network

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、俄罗斯、印度、巴基斯坦、白俄罗斯等10余个国家和地区
Covering more than 10 countries and regions including China, Russia, India, Pakistan, Belarus

青年是数字时代的原住民，也是构建网络空间命运共同体的生力军。安徽大学“模拟上合组织”青年会议以“线上+线下”深度融合的创新模式，为全球青年探索全球治理议题提供了创新性的数字化议事空间。三年来，这一模式以青年智慧推动国际合作共识，以数字技术赋能文明交流互鉴。

Young people are digital natives and a vital force in building a community with a shared future in cyberspace. Through an innovative model that deeply integrates online and offline participation, the Model SCO Youth Conference at Anhui University has created a digital platform for young people around the world to engage with issues of global governance. Over the past three years, the initiative has harnessed the ideas and perspectives of young people to foster consensus on international cooperation, while leveraging digital technologies to promote dialogue, mutual learning, and exchanges among civilizations.

以青年之声应时代之问——搭建覆盖上合区域的青年数字外交模拟平台

Youth Voices Addressing the Questions of Our Time: Building a Digital Diplomacy Simulation Platform for Young People across the SCO Region

互联网是当今时代最具活力的领域，青年是网络空间最活跃的参与者。2023年，安徽大学与上合国家青年平台SCOLAR Network联合发起“模拟上合组织”青年会议，以上海合作组织为框架，以“线上+线下”深度融合为模式，为全球青年深度参与全球治理讨论构建了多元化的数字模拟场域。三年来，活动汇聚来自中国、俄罗斯、印度、巴基斯坦、白俄罗斯、乌兹别克斯坦、柬埔寨等十余个国家的数百名青年代表，他们模拟成员国及秘书处外交官，围绕“科创未来·青年赋能”“青年互助、文明交流、命运与共”“以‘智’赋能，以‘合’同行”等年度主题，就文明演进、人类命运、代际公平、全球善治等前沿议题展开深度交流。活动获得上合组织前秘书长诺罗夫、实业家委员会执行秘书长卡纳夫斯基等高级别官员视频致贺，国际影响力持续扩大，已成为连接上合乃至全球青年参与全球治理对话的创新性平台。

The Internet is one of the most dynamic domains of our time, and young people are among the most active participants in cyberspace. In 2023, Anhui University and SCOLAR Network jointly launched the Model SCO Youth Conference. Drawing on the institutional framework of the Shanghai Cooperation Organization and adopting an integrated online-and-offline format, the initiative has created a diverse digital simulation platform for young people from around the world to engage meaningfully in discussions on global governance.

Over the past three years, the conference has brought together hundreds of young delegates from more than ten countries, including China, Russia, India, Pakistan, Belarus, Uzbekistan, and Cambodia. Assuming the roles of diplomats representing SCO member states and the Secretariat, participants have engaged in in-depth dialogue on such forward-looking issues as the evolution of civilizations, a shared future for humanity, intergenerational equity, and good global governance. These discussions have been organized around annual themes such as “Innovating for the Future, Empowering Youth”, “Youth Solidarity, Civilizational Exchange, and a Shared Future”, and “Empowered by Intelligence, Advancing through Cooperation”.

The conference has also received video messages of congratulations from prominent figures, including former SCO Secretary-General Vladimir Norov and SCO Business Council Executive Secretary Sergey Kanavskiy. With its growing international reach and influence, the initiative has developed into an innovative platform connecting young people across the SCO region and beyond and enabling their participation in dialogue on global governance.



▲ 2024年安徽大学第二届“模拟上合组织”青年会议线下合影，各国青年代表齐聚安徽大学，展现多元文化交融与青年对话活力
Group photo from the 2024 Second Model SCO Youth Conference at Anhui University, where young delegates from different countries came together, showcasing vibrant youth dialogue and exchange across diverse cultures.

以技术之新促治理之智——创新“模拟外交+数字传播”普惠模式

Harnessing Technological Innovation for Smarter Governance: An Inclusive Model Integrating Diplomatic Simulation and Digital Communication

本案例的核心创新在于构建了技术与治理深度融合的青年参与机制。一是首创“模拟上合+青年数字外交”模式，将真实多边外交议事规则引入青年教育场景，代表们通过宣读立场文件、自由辩论、投票表决等全流程，最终共同撰写并发布《联合声明》。二是将全球在线直播从技术手段提升为核心创新，通过直播向全球实时开放会议盛况，打破了物理空间的限制，使世界各地的青年都能平等观看和互动，单场线上观看量破万，是推动参与机会普惠化的生动实践。三是构建了跨国青年协作网络，活动汇聚了高校及上合国家青年平台各分社等全球组织的青年代表，并于2025年特设交棒仪式，将象征主办权的“权杖”从安徽大学传递给下一届举办地乌兹别克斯坦塔什干，同年活动在俄罗斯莫斯科、白俄罗斯明斯克等多城联动，形成了常态化、多节点的国际青年交流机制。

The core innovation of this case lies in creating a youth participation mechanism that deeply integrates technology with governance. First, it pioneers a "Model SCO + Youth Digital Diplomacy" model, introducing authentic multilateral diplomatic procedures into youth education. Delegates go through the full process of presenting position statements, engaging in open debate, voting, and jointly drafting and issuing a Joint Statement.

Second, the initiative elevates global livestreaming from a technical tool to a core innovation for inclusive participation. By opening the conference to global audiences in real time through livestreaming, it breaks down the constraints of physical space and enables young people around the world to watch and interact on an equal basis. A single event has attracted more than 10,000 online views, providing a vivid example of how digital technology can make participation opportunities more inclusive and widely accessible.

Third, the initiative has built a cross-border youth collaboration network, bringing together young representatives from universities, SCOLAR hubs, and other international youth organizations. In 2025, a special handover ceremony was held, during which Anhui University passed the symbolic scepter representing hosting rights to Tashkent, Uzbekistan, the next host city. In the same year, related events were also held in cities including Moscow and Minsk, creating a sustained, multi-node mechanism for international youth exchange.



▲ 2025年活动中，安徽大学代表挥动旗帜，进行活动交棒仪式，开启乌兹别克斯坦塔什干青年活动。
At the 2025 event, representatives of Anhui University waved the flag in a symbolic handover ceremony, passing the initiative on to Tashkent, Uzbekistan, and marking the launch of the next round of youth activities there.

以青春之力筑命运之桥——培育全球数字公民，赋能网络空间命运共同体建设

Youth Building Bridges for a Shared Future: Cultivating Global Digital Citizens for a Community with a Shared Future in Cyberspace

三年来，"模拟上合组织"青年会议的影响深远而普惠。在人才培养上，活动被学校视作培养国际视野和全球胜任力的重要平台，致力于培育具备多边外交素养与数字治理视野的青年人才。在文化互鉴方面，直播技术打破时空界限，让不同文明背景的青年能够实时交流数字治理理念，呼应构建和平、安全、开放网络空间的共同愿望。在网络治理上，历届《联合声明》中关于设立数字经济治理委员会、促进跨境基础设施互联互通等共识，为多边治理提供了宝贵的青年视角和政策参考。在数字普惠层面，直播与回放功能让欠发达地区青年平等获取国际交流资源，践行"不让任何人在数字世界掉队"的原则。该模式已形成标准化操作流程，持续为网络空间命运共同体贡献青年智慧与力量。

Over the past three years, the Model SCO Youth Conference has generated broad and inclusive impact. In talent development, the conference is regarded by the university as an important platform for fostering international perspectives and global competence, with a focus on cultivating young people equipped with an understanding of multilateral diplomacy and a global perspective on digital governance.

In cultural exchange and mutual learning, livestreaming has transcended geographical and temporal boundaries, enabling young people from diverse cultural backgrounds to exchange ideas on digital governance in real time and reflecting their shared aspiration for a peaceful, secure, and open cyberspace.

In cyberspace governance, the consensus reflected in successive Joint Statements—including proposals to establish a Digital Economy Governance Committee and promote cross-border infrastructure connectivity—has contributed valuable youth perspectives and policy references to multilateral governance.

In digital inclusion, livestreaming and replay functions enable young people in less developed regions to access international exchange resources on an equal basis, putting into practice the principle of "leaving no one behind in the digital world".

The initiative has developed standardized operating procedures and continues to contribute the perspectives, ideas, and energy of young people to building a community with a shared future in cyberspace.



AHU Declaration of the "Model Shai

On June 7, 2023, the first "Model SCO' conference was jointly organized by t simulation session of the SCO Summit o attended by representatives of the Repub Republic of China, the Kyrgyz Repub Federation, the Republic of Tajikistan, an the meeting. The topic was **"Youth innovations."**

The meeting was also attended by the F Islamic Republic of Afghanistan, the Re Mongolia, as well as representatives ass "Director of the Executive Committee of The Shanghai Cooperation Organizatio organization with eight member states, total area of the SCO member states cove for about three-fifths of the Eurasian co equivalent to 44% of the world's populat the principles of the "Shanghai Spirit," ch *consultation, respect for cultural diver.* moving toward the establishment of a de and economic order.

Many SCO member states have realized world of rapid technological shifts and ha chair of the SCO, the Government of whether through the Start Up India initia youth power to realize its true potential. S of educational exchanges in achieving universities in Kazakhstan are part of th the establishment of mutually beneficial cultivation of young scientific and techn in higher education. In recent years, p increasingly favored by member coun Programme" was introduced by the established the Youth Affairs Agency development of the intellectual potential Although highly praised for these accor common issues confronting most SCO resource gap is still a barrier to coop economic development, including the g which leads to the lack of research equip

AHU Declaration of the "Model Shanghai Cooperation O State Council

On May 22, 2024, "the second "Model SCO" hosted by An offline. The SCOLAR Network and Anhui University co-org simulate a session of the SCO Summit of the Council o Conference was attended by representatives of the Repul Republic of India, the Islamic Republic of the Iran, the People Kyrgyzstan Republic, the Islamic Republic of Pakistan, the Republic of Tajikistan, the Republic of Uzbekistan. The Kaz meeting. The topic of the Conference was "Generation S through Cultural Exchange and Shared Vision".

The Shanghai Cooperation Organization is a perma international organization with 9 member states, 3 observer partners. The total area of the SCO member states is more kilometers, accounting for about three-fifths of the Eurasian c is more than three billion, accounting for 44% of the world's p Cooperation Organization follows the principle of the "Shang by *mutual trust, mutual benefit, equality, consultation, respect, pursuit of common development*, aimed at moving towards democratic, fair, and rational new international political and e Many SCO member states have made efforts to boost cultural region. The 20th meeting of the cultural ministers of SCO mei 2023, reiterated the significance of cultural exchange and civilizational exchanges. As the rotating presidency, Kazakhst technological empowerment of youth cultural exchanges. Th Kazakhstan in 2022 serves as a model activity for integratin cultural exchange. India has been a strong advocate for cultura SCO Summit, India actively promoted the ancient Sanskrit Kutumbkam" as a guiding principle for its diplomatic committed to actively engaging in discussions on cultural benefits within the SCO framework. In 2019, Kyrgyzstan ex cultural exchange with inauguration ceremony of a Chinese L aimed at promoting cross-cultural dialogue and understandin cultural exchanges within the SCO member states, Pakistan cultural interactions with China and Russia, hosting three SC have attracted over 10,000 visitors. As a geo-cultural nexu efforts to restore cultural heritages such as the ancient city of K international recognition and tourism.

Although highly praised for these accomplishments, member s the common issues confronting most SCO countries. Fi geopolitical influence and economic development can result sources among member states, consequently constraining the cultural exchange activities. Secondly, the lack of a sys mechanism among SCO member states has resulted in a limi

Declaration of the AHU 2025 "Model SCO" Heads of State Council

On April 28, Model SCO 2025 Anhui University was held offline in Hefei. Anhui University and SCOLAR Network co-organized the conference as a simulation session of the SCO Summit of the Council of Heads of States. The Conference was attended by delegates of the People's Republic of China, the Republic of Belarus, the Republic of India, the Islamic Republic of Iran, the Republic of Kazakhstan, the Kyrgyzstan Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, the Republic of Uzbekistan and the SCO Secretariat. The Chinese side chaired the meeting. The theme of the conference was **"Empowered by Wisdom, Advancing in Harmony."**

The Shanghai Cooperation Organization is a permanent intergovernmental international organization with 10 member states, 2 observer states, and 14 dialogue partners. The total area of the SCO member states is more than 30 million square kilometers, accounting for about three-fifths of the Eurasian continent; the population is more than three billion, accounting for 44% of the world's population. The Shanghai Cooperation Organization follows the principle of the "Shanghai Spirit", characterized by "mutual trust, mutual benefit, equality, consultation, respect for cultural diversity and pursuit for common development", aimed at moving towards the establishment of a democratic, fair and rational new international political and economic order.

Since its establishment in 2001, the Shanghai Cooperation Organization has encouraged the effective cooperation between the member states in science and technology, culture, education, energy, transport, tourism, environmental protection, etc, striving to promote peace, security, and stability in the region. China has made significant strides in the integration of technology and innovation into its development strategies. Over the past decades, China has demonstrated global leadership in areas such as artificial intelligence (AI), 5G communication, and renewable energy technologies. Belarus is still in the "developing" stage in terms of cybersecurity, and faces challenges in areas such as threat intelligence sharing and the response to cybercrimes. In Belarus, only 58% of SMEs use cloud-based tools, which is far lower than the global average. In India, the Digital India initiative was launched in 2015, India's innovation ecosystem, with over 110 unicorns and 90,000+ startups. Outdated pricing systems-tied to rigid contracts and fixed formulas - are causing 10%–15% inefficiencies and heavy losses. In 2023 alone, Iran lost over $2 billion. Per capita renewable freshwater resources in Kazakhstan stand at approximately 3,259 cubic meters per person per year - well below the global average of 5,429 m^3. Climate change exacerbates this imbalance. The Kyrgyzstan youth unemployment rate (the percentage of the labour force aged 15–24) reached 6.8% in 2024 (based on an International Labour Organization (ILO) model), and the youth NEET rate (percentage of 15–24 year-old Not in Employment, Education, or Training) was 22.6% in 2023. the success rate of local IT start-up projects is below 10%. Pakistan preserves over four millennia of community-based wisdom, as proven by the inclusion of Falconry and Suri Jagek on UNESCO's Representative List of Intangible Cultural Heritage. The Russia's State Hermitage Museum's contribution of 50,000 digitized artifacts, including the "Golden Horde Hoard" accessible via 4K VR. Tajikistan, a mountainous and landlocked country of over 10 million people, stands at a pivotal crossroads for innovation-driven regional cooperation within the SCO region. However, youth unemployment remains high at 20.5% (World Bank, 2023), particularly in rural areas with limited

▲ 2023年至2025年，历届"模拟上合组织"青年会议参会代表共同签署的《联合声明》
Joint Statements signed by delegates at successive Model SCO Youth Conferences from 2023 to 2025.

以平台之实聚青年之力——SCOLAR合肥分社落地安大，构建常态化国际交流机制

Empowering Youth through a Strong Platform — SCOLAR Hefei Hub at Anhui University Establishes a Sustained Mechanism for International Exchange.

2023年6月，上合国家青年平台合肥分社在安徽大学正式揭牌成立，成为全球第13个SCOLAR分社。截止到2026年8月SCOLAR共有17个分社（分布在10个国家）。合肥分社以安徽大学为中心，辐射更多优秀青年，定期举办国际青年交流活动，持续推动"上海精神"在青年群体中的传播与弘扬。这一机制化成果为活动的可持续发展奠定了坚实基础，也为国际青年交流注入了持久活力。

In June 2023, the SCOLAR Hefei Hub was officially inaugurated at Anhui University, becoming the 13th SCOLAR Hub worldwide. As of August 2026, SCOLAR has 17 hubs located in 10 countries. Based at Anhui University, the Hefei Hub reaches a broader community of outstanding young people and regularly organizes international youth exchange activities, continuously promoting the Shanghai Spirit among younger generations. This institutionalized platform has laid a solid foundation for the sustainable development of the initiative and brought lasting momentum to international youth exchange.



▲ 合肥分社交流活动中，跨越国界的青春对话，国际青年代表在轻松融洽的氛围中畅所欲言
At the Hefei Hub exchange event, young delegates from around the world engaged in open and lively dialogue, freely sharing their perspectives in a relaxed and welcoming atmosphere.

第七届“一带一路”百国印记短视频大赛

The Seventh Belt and Road Initiative Short Video Competition



▲ 第七届“一带一路”百国印记短视频大赛
The Seventh Belt and Road Initiative Short Video Competition

申报机构

Applying Institution

环球网
Global Times Online

其他参与机构

Other Participating Organizations

中国公共外交协会、国务院国资委新闻中心、柬埔寨王国驻华大使馆、中国驻保加利亚共和国大使馆、中国驻柬埔寨王国大使馆、中国驻南非共和国大使馆、中国驻塞尔维亚共和国大使馆

Public Diplomacy Association, News Center of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), Embassy of the Kingdom of Cambodia in the People's Republic of China, Embassy of the People's Republic of China in the Republic of Bulgaria, Embassy of the People's Republic of China in the Kingdom of Cambodia, Embassy of the People's Republic of China in the Republic of South Africa, Embassy of the People's Republic of China in Serbia

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖阿尔及利亚、阿富汗、阿根廷、阿联酋、阿曼等133个国家和地区

Covering 133 countries and regions including Algeria, Afghanistan, Argentina, the United Arab Emirates, and Oman

随着数字技术发展，短视频已成为跨文化传播的重要载体。环球网已持续举办七届“一带一路”百国印记短视频大赛，搭建面向全球创作者的影像共创平台，鼓励民众用镜头记录合作与交流故事，推动跨文化理解与文明成果共享。

As digital technologies continue to reshape global communication, short-form video has become an increasingly important medium for cross-cultural engagement. Since 2019, Global Times Online has organized the Belt and Road Initiative Short Video Competition, creating a digital storytelling platform for creators worldwide. The initiative encourages participants to document stories of cooperation, cultural exchange, and everyday life through video, fostering mutual understanding and the sharing of cultural achievements across borders.

汇聚133个国家和地区创作者，构建全球影像共创网络

Bringing Together Creators from 133 Countries and Regions to Build a Global Storytelling Network

2025年赛事进一步拓展国际参与广度，设置全球主赛区以及柬埔寨、南非、中东欧三大国际分赛区，吸引133个国家和地区参与，累计征集作品近2000部。参与主体涵盖各国创作者、高校师生、文化机构、企业员工及青年群体，形成覆盖亚洲、非洲、欧洲等多个区域的国际创作网络。

平台鼓励创作者以本土视角讲述跨文化交流故事。这些来自不同国家和地区的真实故事，通过互联网平台跨越语言和地域限制，让更多人能够了解彼此的发展经验、文化传统与生活方式，逐步形成覆盖全球的数字文化交流网络。

The 7th Belt and Road Initiative Short Video Competition further expanded its international reach in 2025 by establishing a global competition alongside three international divisions in Cambodia, South Africa, and Central and Eastern Europe. The competition attracted participation from 133 countries and regions and received nearly 2,000 submissions.

Participants included content creators, university students and faculty, cultural organizations, business professionals, and young people from around the world, forming an international creative network spanning Asia, Africa, Europe, and beyond.

The platform encourages creators to tell stories of cultural exchange from local perspectives. Through digital platforms, these authentic stories transcend linguistic and geographical boundaries, enabling audiences to learn about different cultures, traditions, development experiences, and ways of life. Together, they contribute to a growing global network of digital cultural exchange.



▲ 第七届“一带一路”百国印记短视频大赛创作者大会
The Seventh Belt and Road Initiative Short Video Competition Creators' Conference

创新全球共创机制，以数字技术拓展文明交流新场景

Fostering Global Co-Creation Through Digital Innovation

项目以数字平台为基础，探索“全球征集、本土创作、多元传播”的运行机制。赛事设置企业、城市、高校及特别竞赛等多个赛道，鼓励不同背景创作者围绕城市发展、文化传承、青年成长等主题开展创作。国际分赛区结合当地文化特色自主设定创作方向，使内容生产更贴近本土语境。

在内容生产环节，鼓励创作者运用数字技术和人工智能工具提升创作效率与表达形式，使跨文化故事更生动、更易传播。赛事通过线上平台实现创作、展示、交流和传播的全流程数字化运作。

赛事依托“公众参与+专业评议”双轨机制，6天吸引超一亿人次参与评审，构建起从创作到互动的完整链路，实现文化交流的全球共创共享。

Built on a digital platform, the competition explores a model of “global participation, local storytelling, and shared dissemination”. Multiple competition tracks—including Enterprise, City, University, and Special Categories—encourage creators from diverse backgrounds to produce content on themes such as urban development, cultural heritage, youth development, and international cooperation.

The international divisions are empowered to develop themes that reflect local cultural contexts, allowing content creation to remain relevant and community-driven. Participants are also encouraged to leverage digital technologies and AI-assisted creative tools to enhance storytelling, improve production efficiency, and broaden audience engagement.

From content creation and exhibition to interaction and dissemination, the entire process is conducted through digital platforms. The competition further combines public participation with expert evaluation, attracting more than 100 million online voting interactions within six days. This approach creates a complete ecosystem that connects creators, audiences, and reviewers, enabling collaborative participation in cultural exchange and digital storytelling.



▲ 投稿AI赛道作品
Entries for the AI-powered Competition Track



▲ 国际分赛区部分获奖作品截图
Award-Winning Works from international Regional Competitions

以民间影像促进文明互鉴，形成普惠共享的国际传播生态

Promoting Mutual Understanding Through People-Centered Stories

赛事联动全球300余家媒体协同传播，全平台内容总传播量突破5亿次，161部获奖短片在全球社交及资讯平台长期展播。

《当中国非遗遇上巴基斯坦的超级工程》记录巴基斯坦青年跟随中国师傅学习传统技艺的经历；《一封手写信》讲述乌干达社区居民因基础设施改善而带来的生活变化；《神奇的“抓光人”》则通过非洲儿童视角呈现新能源技术对日常生活的影响。这些作品以普通人的真实经历为切口，将宏大的国际合作转化为可感知、可共鸣的生活故事。

历经七年运营，项目已发展成为面向全球创作者开放的数字文化交流平台，为各国民众提供展示本土文化与发展故事的机会，也为文化机构、媒体、高校及青年群体搭建跨国交流空间。通过数字影像这一全球共通语言，项目推动文化成果共享与民间交流，为构建开放包容的网上文化交流共享平台提供了具有持续性和普惠性的实践样本。

The competition collaborated with more than 300 media outlets worldwide, generating over 500 million views and impressions across digital platforms. A total of 161 award-winning short films continue to be showcased on social media and online information platforms around the world.

Many of the most impactful works highlight the experiences of ordinary people. When Chinese Intangible Cultural Heritage Meets a Mega Project in Pakistan follows a young Pakistani learning traditional craftsmanship from Chinese artisans. A Handwritten Letter tells the story of an elderly Ugandan resident expressing gratitude for infrastructure improvements that enhanced daily life and created local opportunities. The Light Catchers presents the impact of renewable energy projects through the eyes of African children, showing how technological innovation can transform everyday experiences.

Over seven years of continuous development, the competition has evolved into an open digital platform for global cultural exchange. It provides creators worldwide with opportunities to share local stories, showcase cultural achievements, and engage with international audiences. By using digital video as a universally accessible language, the initiative promotes cultural sharing, people-to-people exchange, and mutual learning, offering a sustainable and inclusive model for building online platforms that foster cross-cultural understanding and dialogue.



▲ 获奖作品展示
Award-Winning Video Exhibition



▲ 获奖作品展示
Award-Winning Video Exhibition

何以文明——中华文明探源工程成果数字艺术大展

Civilization in Archaeology——Digital Art Exhibition of Exploration of the Origins of Chinese Civilization



▲ 何以文明主视觉
Key Visual

申报机构
Applying Institution

央视国际网络有限公司
CCTV International Network Co., Ltd.

央博数字传媒科技有限公司
Yangbo Digital Media Technology Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、秘鲁、肯尼亚、英国、埃及、瑞士、日本、中国香港、中国澳门等9个国家和地区

Covering 9 countries and regions including the United States; Peru; Kenya; the United Kingdom; Egypt; Switzerland; Japan; Hong Kong, China and Macao, China

2023年，央博数字平台推出“何以文明——中华文明探源工程成果数字艺术大展”，并开启国际巡展。展览面向全球用户呈现中华文明早期图景，旨在探索文化遗产在网络空间中的创新传播路径。

In 2023, CMG Meta Museum launched “Civilization in Archaeology — Digital Art Exhibition of Exploration of the Origins of Chinese Civilization” and kicked off its global tour. The exhibition presents early Chinese civilization to global users and explores innovative ways for communicating cultural heritage in cyberspace.

十处文明遗址沉浸式再现，全球巡展推动文化交流互鉴

Immersive Digital Recreation of Ten Archaeological Sites: A Global Tour Advancing Mutual Learning Among Cultures

“何以文明”大展首次在国家范围内利用数字化技术构建移动化、全沉浸、交互式的时空框架，线上复原红山、良渚、三星堆等十处文明遗址，打造贯通古今的文明体验数字空间。2023年6月，“何以文明”全球巡展在纽约联合国总部启幕，先后落地亚洲、欧洲、非洲、美洲多国：肯尼亚国家博物馆特展吸引近万名观众观展互动，埃及卢克索特展则与当地馆藏古埃及文物同台展出，生动诠释世界文明多样性。展览受到全球主流媒体高度关注，联合国官网推出专题报道，权威媒体全程跟进，相关内容被744家国际主流媒体转载，触达全球受众超2.4亿人次，有力促进世界文明交流互鉴，彰显中国共建网络空间命运共同体的责任担当。

The exhibition “Civilization in Archaeology” is the first nationwide initiative to leverage digital technology in constructing a mobile-enabled, fully immersive, and interactive spatio-temporal framework. It virtually reconstructs ten archaeological sites—including Hongshan, Liangzhu, and Sanxingdui—to create a digital space that bridges past and present for experiencing civilization.

In June 2023, the global tour of “Civilization in Archaeology” kicked off at the United Nations Headquarters in New York. It has since been successively launched in multiple countries across Asia, Europe, Africa, and the Americas. As a special exhibition at the National Museum of Kenya, it drew nearly 10,000 visitors who interacted on-site. In Luxor, Egypt, the exhibition was presented alongside ancient Egyptian artifacts, offering a vivid interpretation of the diversity of world civilizations.

The exhibition drew significant attention from global mainstream media, with a special report on the UN official website and continuous coverage by authoritative media outlets. Related content was republished by 744 international mainstream media outlets, reaching a global audience of over 240 million.

The exhibition effectively promotes exchanges and mutual learning among civilizations and demonstrates China's responsibility and commitment to building a community with a shared future in cyberspace.



在“何以文明”全球巡展 · 联合国特展启动仪式上，到场嘉宾手牵手合影留念。
At the launch ceremony of the “Civilization in Archaeology” Global Tour - UN special exhibition, the guests held hands for a group photo.

多元终端融合沉浸体验，创新驱动文化遗产数字表达

Immersive Experience Through Multi-terminal Integration: Innovatively Driving Digital Representation of Cultural Heritage

“何以文明”大展整合3D空间设计、数字虚拟人、文物数字复原、智能资产生成等前沿技术，构建了PC、移动端、VR端多终端适配的沉浸式数字交互空间。用户以“时空旅行者”身份创建数字分身，从序厅进入各遗址复原场景，在严格依据考古成果复现的先民导览员的引导下自由探索，并可在宫殿建设、手工制作、纹饰绘制、道具识别等嵌入式游戏中触发关键剧情，学习文博知识，收获文明守护勋章。展览依托UE5引擎与开放式云渲染架构，将复杂3D场景在远程服务器实时渲染后推流至用户终端，实现了高质量、高精度的沉浸式体验，为数字展览提供了可复用的设计范式与技术解决方案。

The exhibition “Civilization in Archaeology” integrates cutting-edge technologies such as 3D spatial design, digital avatars, digital restoration of cultural relics and intelligent asset generation, to build an immersive digital interactive space compatible with PC, mobile and VR devices. Users create their own digital avatars as “time travelers” to explore the reconstructed scenes of ten archaeological sites. Under the guidance of virtual narrators portraying ancient inhabitants, users can activate key storylines in embedded games such as palace building, craft making, pattern painting and artifact recognition, so as to gain cultural knowledge and earn the “Civilization Guardian Badge”. Powered by the UE5 engine and the open cloud rendering architecture, the exhibition renders 3D scenes in real time on remote servers before streaming them to user terminals. This approach delivers high-quality immersive experiences to users, and offers replicable design paradigms and technical solutions for digital exhibitions.



▲ “何以文明”大展中良渚遗址复原场景
A reconstructed scene of the Liangzhu archaeological site featured in the exhibition “Civilization in Archaeology”.

普惠共享激发文化认同，带动文旅经济与社会教育双向发展

Inclusive Sharing Fosters Cultural Identity: Driving the Coordinated Development of the Cultural and Tourism Economy and Social Education

“何以文明”大展上线后累计访问量达8982.3万次，社会反响热烈。展览以多终端适配模式，实现24小时不间断展出，彻底打破地域与时间的限制。展览通过设置先民导览员互动、趣味游戏等方式，将专业考古成果转化为通俗易懂的沉浸式体验，助力文化教育均等化，增强民族文化自信与认同感。此外，沉浸式线上体验有效激发了观众的实地参观意愿，为良渚等遗址景区及地方文旅精准引流。同时，通过打造“何以文明少年考古队”等联动IP与研学活动，带动了当地文化体验、餐饮及住宿消费，结合文创产品开发与电商运营，成功探索出一条以数字文化产品驱动线下文旅经济、实现社会效益与经济效益双丰收的普惠新路径。

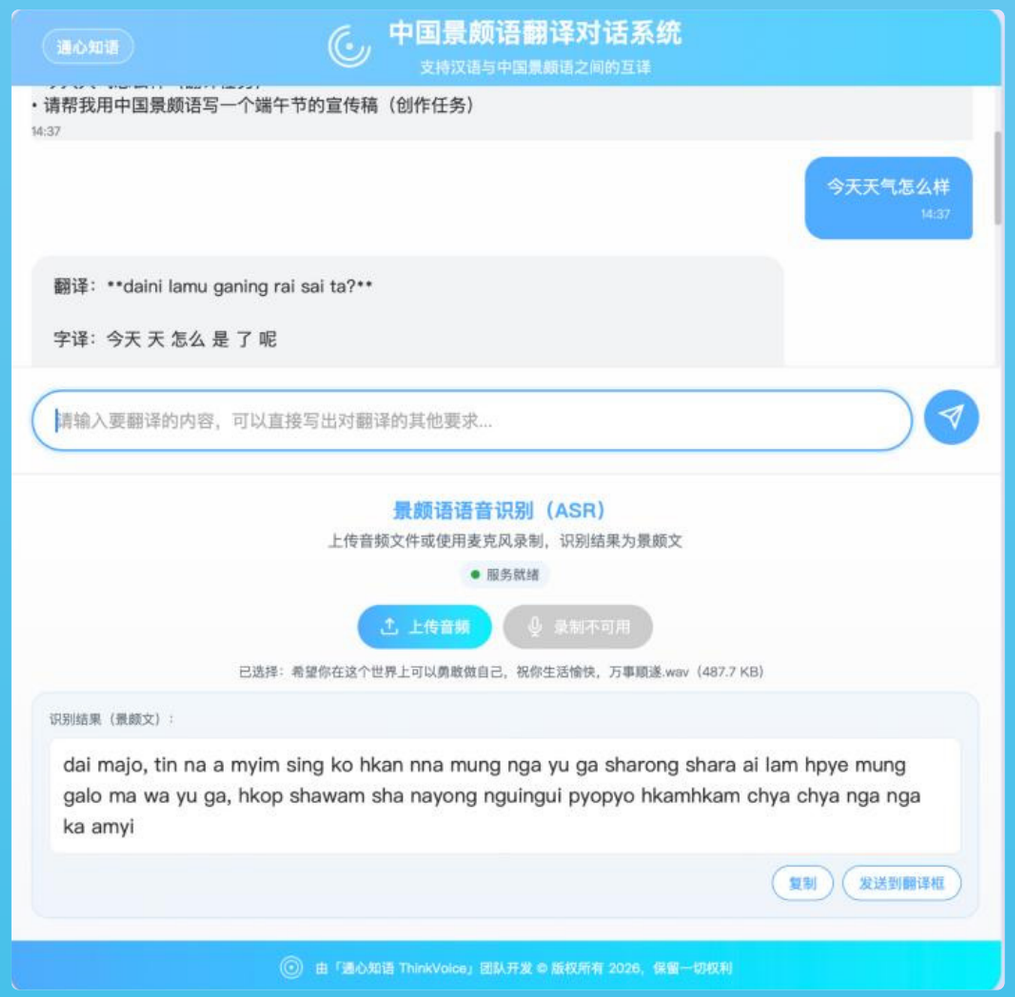
The exhibition “Civilization in Archaeology” has recorded a total of 89.823 million visits since its launch online, earning an enthusiastic public response. With a multi-terminal compatible model, it offers round-the-clock access, completely breaking down geographical and temporal barriers. By featuring interactive sessions with virtual guides modeled on ancient inhabitants and engaging games, the exhibition transforms professional archaeological findings into accessible and immersive experiences, helping to promote equal access to cultural education and enhance cultural confidence and the sense of national identity. Furthermore, the immersive online experience effectively stimulates visitors' willingness to make on-site trips, precisely directing visitors to archaeological sites. By featuring collaborative IP and organizing study tours, the exhibition boosts local spending on cultural experiences, dining, and accommodation. by integrating the development of cultural and creative products with e-commerce operations, it pioneers a new way—leveraging digital cultural products to energize the offline cultural tourism economy and achieve both social and economic benefits.



▲ “何以文明少年考古队”成员参加良渚文化讲座
Members of the “Civilization in Archaeology Junior Archaeology Team” attended a lecture on Liangzhu culture.

澜湄国家跨境语言AI大模型

LANCANG-MEKONG CROSS-BORDER LANGUAGE AI LARGE MODEL



▲ 跨境语言AI翻译系统界面，直观呈现空间与技术能力的交汇：流域内跨境语言通过大模型实现可翻译、可交互、可创作
A cross-border language AI translation system interface, visually illustrating the convergence of geographic space and technological capabilities: cross-border languages within the region can be translated, used for interaction, and leveraged for content creation through large language models

申报机构

Applying Institution

通心知语 THINKVOICE

通心知语科技

ThinkVoice Technology

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖中国、柬埔寨、老挝、缅甸、泰国、越南6个国家和地区

Covering 6 countries and regions including China, Cambodia, Laos, Myanmar, Thailand and Vietnam

澜湄六国山水相连、民族相亲，语言隔阂却长期阻碍交流互鉴。本案例以AI大模型为纽带，让跨境语言成为可翻译、可传播、可再生的数字文化资产。

The six Lancang-Mekong nations are linked by mountains and connected by ethnic affinity, yet language barriers have long hindered communication and mutual learning. With AI large language models as a bridge, this initiative transforms cross-border languages into translatable, disseminable, and regenerable digital cultural assets.

AI大模型跨越语种鸿沟，让澜湄六国20余种民族语言在数字世界交流互鉴

AI large language models bridge the linguistic divide, facilitating exchange and mutual learning among over 20 ethnic languages of the six Lancang-Mekong nations in the digital world.

澜沧江—湄公河流经中国、柬埔寨、老挝、缅甸、泰国、越南六国，跨境语言是多元文化交流的独特纽带，却普遍面临语料稀缺、数字化程度低的困境。项目自2025年1月启动语言记录工程，现已建成覆盖28种语言、总量达7TB的高质量多模态语料库，涵盖哈尼语、苗语、傣语、景颇语、傈僳语等，并研发出仅需少量语料即可实现高质量文本翻译、语音识别和语音合成的AI大模型。目前，11种语言的在线演示系统已面向全球免费开放，自2025年11月上线以来累计服务用户请求超过1万次。项目坚持普惠，景颇语语音识别模型权重等计划开源，计划与流域国家、高校及研究机构共建共享数字资产，形成“语料协同共建—基础模型开源—场景定制服务”的“澜湄模式”，服务于跨境治理、民族文旅、跨境电商、文化传承等场景，为低资源语言所在地区提供可迁移的数字化解决方案。

The Lancang-Mekong River flows through six countries—China, Cambodia, Laos, Myanmar, Thailand, and Vietnam—where cross-border languages serve as a unique bridge for multicultural exchange. Yet these languages widely face the dual challenges of scarce corpora and low digitalization. Launched in January 2025, the project has built a high-quality multimodal corpus covering 28 languages with a total volume exceeding 7TB, including Hani, Miao, Dai, Jingpo, and Lisu. It has also developed AI large language models capable of high-quality text translation, automatic speech recognition, and text-to-speech synthesis using only minimal training data. To date, online demo systems for 11 languages have been made freely available worldwide; since their launch in November 2025, they have served over 10,000 user queries. Committed to inclusive development, the project has planned to open-source the model weights for Jingpo speech recognition. It plans to jointly develop and share digital assets with riparian nations, universities, and research institutions, forming the “Lancang-Mekong Model” of corpus co-development, open-sourced foundational models, and scenario-specific services. This model serves cross-border governance, ethnic cultural tourism, cross-border e-commerce, and cultural heritage preservation, while providing a transferable digital solution for other areas worldwide where low-resource languages are spoken.



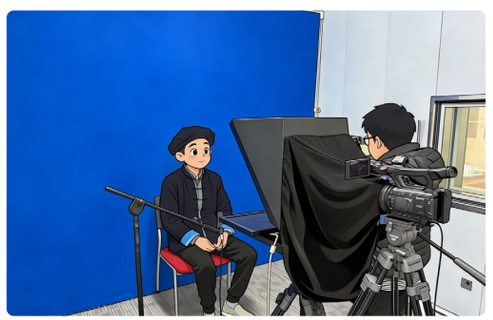
泰国和中国的哈尼族在泰国使用哈尼语阿卡方言交流
Hani people from Thailand and China, communicating in the Akha dialect of Hani in Thailand

项目突破了低资源语言大模型在少量训练语料条件下的技术瓶颈，构建民族语言"数字基因库"

The project overcomes the technical bottleneck of large language models for low-resource languages with limited training data, and builds a "digital gene bank" for ethnic languages.

项目累计投入逾500万元人民币：在录音室里，由语言学家指导采录标注语料，依托自建AI算力中心训练模型。技术架构分四层：数据底座层包含澜湄国家民族语言语料库；核心能力层集成文本翻译、文本创作、语音识别与合成；演示系统层支持11种语言在线实时体验；应用场景层赋能文化旅游、联合执法、跨境电商、公共治理。创新点在于：一是突破了低资源语言大模型在少量训练语料条件下的技术瓶颈，仅需少量语料即可实现高质量文本翻译、语音识别和合成的模型训练；二是以多模态语料构建民族语言“数字基因库”，替代传统纸质词典与录音档案，向大众打开民族语言的认知渠道。

The project has received a cumulative investment of over RMB 5 million. In the acoustic recording studio, linguists guide the recording, collation, and annotation of corpora, while model training is powered by a self-built AI computing center. The technical architecture consists of four layers: the Data Foundation Layer houses a corpus of ethnic languages from Lancang-Mekong countries; the Core Capability Layer integrates text translation, text generation, speech recognition, and speech synthesis; the Demo System Layer supports real-time online trials in 11 languages; and the Application Layer serves sectors such as culture and tourism, joint law enforcement, cross-border e-commerce, and public governance. The key innovations are: first, it overcomes the technical bottleneck of training large language models for low-resource languages under limited corpus conditions—high-quality text translation, speech recognition, and speech synthesis can be achieved with only a small amount of training data. Second, by building a multimodal "digital gene bank" for ethnic languages, it replaces traditional paper dictionaries and audio archives, opening up public access to and understanding of these languages.



▲ 在语言学家指导下录制哈尼语白宏方言语料
Audio recording of the Baihong dialect of Hani language supervised by linguists



▲ 在泰国和当地阿卡哈尼族交流
Communicating with local Akha Hani people in Thailand

从泰国清莱山区到高校课堂，民族语言被AI精准理解

From the mountainous areas of Chiang Rai, Thailand to the university classroom, ethnic languages are being accurately understood by AI.

项目的社会效益已经显现。2026年1月，在泰国清莱省山区，系统将哈尼语阿卡方言书籍译成汉语和泰语，当地群众激动地表示，这是哈尼语阿卡方言首次被AI精准理解。文化工作者用它翻译鲁迅《秋夜》、创作散文，高校师生将其用于哈尼诗会与教学。经济价值同步释放：广东惠州一家企业为600名哈尼族员工通过我们的模型将规章制度译成哈尼语语音；客户通过我们的模型将缅甸克钦语语音进行文字转写和汉语翻译。全球约7000种语言中超6500种为低资源语言，“澜湄模式”为这些低资源语言的AI大语言模型提供了可迁移的解决方案。

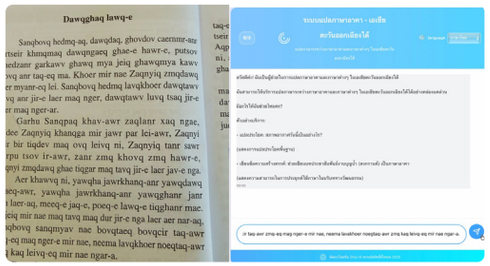
The social benefits of this project have become evident. In January 2026, in the mountainous areas of Chiang Rai Province, Thailand, our system translated books written in the Akha dialect of Hani into Chinese and Thai. Local people expressed their excitement that the Akha dialect of Hani had been accurately understood by AI for the first time. Cultural workers have used the system to translate Lu Xun's Autumn Night and write prose; university teachers and students have used it for Hani poetry gatherings and classroom teaching.

Economic value has also been realized: an enterprise in Huizhou, Guangdong Province used our model to convert regulations into spoken Hani for 600 Hani employees; customers have used our model to transcribe Myanmar Kachin speech into text and translate it into Chinese.

Of the approximately 7,000 languages worldwide, over 6,500 are low-resource languages, and the “Lancang-Mekong model” provides a transferable solution for AI large language model development in these languages.



▲ 云南哈尼族白宏孩童在“六·一儿童节活动”朗诵使用AI系统翻译民族语言版《悯农》
Baihong Hani children in Yunnan reciting an AI-translated ethnic language version of Pity the Peasants (Min Nong) at the June 1st Children's Day event



▲ AI系统将泰国哈尼语阿卡方言书籍翻译成泰语演示（大意：阿卡哈尼人要在农忙时学好文化）
Demonstration of an AI system translating books written in the Akha dialect of Hani from Thailand into Thai (gist: the Akha Hani people should study hard during the farming season)

清华大学全球学术知识交流与服务实践：汇聚全球资源·互联学术生态·普惠知识未来

Tsinghua University’s Global Academic Knowledge Exchange and Service Practice: Pooling Global Resources, Interconnecting Academic Ecosystems and Sharing Knowledge for All



▲ 清华大学全球学术知识交流与服务体系概览
Overview of Tsinghua University Global Academic Knowledge Exchange & Service System

申报机构
Applying Institution

清华大学
Tsinghua University

其他参与机构
Other Participating Organizations

科睿唯安、中国知网、德古意特出版社、美国计算机协会、SAGE出版公司、泰勒弗朗西斯出版集团、中国图书进出口（集团）有限公司、中国高校科技期刊研究会

Clarivate, China National Knowledge Infrastructure(CNKI), De Gruyter, Association for Computing Machinery (ACM), SAGE Publishing, Taylor & Francis Group, China National Publications Import and Export (Group) Co., Ltd., Society of China University Journals (CUJS)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国、德国、澳大利亚、日本等190多个国家和地区

Covering more than 190 countries and regions including China, the United States, Germany, Australia, and Japan

面对全球学术资源商业化、知识鸿沟凸显的挑战，清华大学响应联合国教科文组织开放科学倡议，以建立开放、公平的全球科技发展环境为目标，搭建普惠互联的学术知识交流与服务体系，为全球文明互鉴与知识共享贡献中国实践样本。

Facing the commercialization of academic resources and the widening knowledge gap, Tsinghua University has responded to the UNESCO Recommendation on Open Science. Committed to fostering an open and equitable global environment for science and technology, it has constructed an inclusive and interconnected academic knowledge exchange and service system, providing a practical Chinese model for mutual learning among civilizations and global knowledge sharing.

体系·筑基：以技术与治理双轮推动开放科学国际合作落地
System Foundation: Leveraging Technology and Governance as Twin Drivers to Implement International Cooperation for Open Science

项目以数字技术基建与全球治理政策为基石，联合全球学术科研机构共建四大服务平台。以AI、大数据、姓名消歧算法、API互联能力为支撑，搭建全链路数字化底层环境，推动国际开放获取期刊推荐名录（OARL）、《iLibrary》开放获取期刊、清华学者库、OpenSign公益性学术资源服务平台实现数据互联与协同，汇聚海量学术资源，为全球190余个国家和地区提供服务，累计访问量超3.36亿。

在全球科研治理进程中，清华大学作为中国唯一参与主体签署《科学出版改革：斯德哥尔摩宣言》，在第十七届柏林开放获取会议上向40余国代表阐述中国立场，入选国际图联OSSAC全球专家委员会，深度参与开放科学规则制定等工作，成为连接南北学术对话、支持发展中国家开放科学能力建设的重要桥梁。

Driven by digital technology infrastructure and global governance policies, the project co-builds four interconnected service platforms in partnership with academic and research institutions worldwide: the International Open Access Journal Recommended List (OARL), iLibrary open access journal, Tsinghua Scholar Hub, and Open Science in Global Networks (OpenSign). Supported by AI, big data, proprietary name disambiguation algorithms, and API interconnection, the system establishes a full-chain digital architecture that enables data interconnection and capability synergy. The system has aggregated substantial academic resources, serving over 190 countries and regions, with total visits exceeding 336 million.

In global-governance practices, Tsinghua University, as the sole Chinese participant, has signed the Stockholm Declaration on Reformation of Science Publishing, presented China's stance to delegates from over 40 countries during the 17th Berlin Open Access Conference, and joined the IFLA OSSAC Expert Committee. Deeply engaged in formulating open science principles, it acts as a vital bridge for North-South academic dialogue and supports open science capacity-building in developing countries.



▲ 清华大学参与《科学出版改革：斯德哥尔摩宣言》起草及讨论
Tsinghua University participated in the drafting and discussion of the Stockholm Declaration on Reformation of science publishing



▲ 在第十七届柏林开放获取会议上向40余国代表阐述中国立场
Presented China's stance to delegates from over 40 countries at the 17th Berlin Open Access Conference

生态·互联：以一体化学术服务基础设施赋能开放共享新生态

Ecosystem Interconnection: Harnessing Integrated Academic Service Infrastructure to Empower a New Open Sharing Paradigm

研制国际开放获取期刊推荐名录（OARL），覆盖17个语种、106个学科、1364种期刊，构建科学可信的开创性遴选机制，助力期刊开放、融合与创新发展；创办开放获取期刊《iLibrary》，编委会汇集7国21位跨学科专家，聚焦智慧图书馆与数字知识服务的创新与变革等议题，拓宽前沿交叉学科国际交流渠道；依托学者库，归集清华大学4280位学者、62万余项学术成果，实现学术资源统一组织与精准关联，支撑科研治理与存管；建设OpenSign公益性学术资源服务平台，以“开放资源+商业资源+自建资源”三源融合模式，整合千万级文献，提供智能检索与问答服务，促进优质学术资源传播共享。

各平台数据自动流转，构建“选刊 - 发文 - 存管 - 传播”全链条知识服务体系，持续输出标准化服务能力，形成可复制、可推广的互联网学术服务基础设施范式。

The project has jointly developed the International Open Access Journal Recommendation List (OARL), covering 1,364 journals across 17 languages and 106 disciplines. It has developed a scientific, credible, and pioneering selection mechanism that facilitates the development of academic journals toward greater openness, integration, and innovation.

It has launched the open access journal iLibrary, with an editorial board of 21 interdisciplinary experts from seven countries, focusing on innovation and transformation of smart libraries and digital knowledge services, broadening international exchange channels for cutting-edge interdisciplinary fields.

Leveraging the Tsinghua Scholar Hub, the project consolidates academic outputs from 4,280 scholars at Tsinghua University, totaling over 620,000 scholarly works, enabling unified organization and precise linking of academic resources to support research governance and preservation.

It has also developed Open Science in Global Networks (OpenSign), a public-benefit academic resource platform. Adopting a tri-source integration model of open-access, commercial, and self-built resources, the platform aggregates tens of millions of publications and provides intelligent retrieval and Q&A services to facilitate the inclusive sharing of high-quality academic resources.

All platforms enable automatic data flow, forming a full-chain knowledge service system covering journal selection, publication, preservation, and dissemination, while continuously delivering standardized service capabilities and creating a replicable and scalable paradigm for internet-based academic service infrastructure.



▲ 构建“选刊-发文-存管-传播”全链条知识服务体系
A full-chain knowledge service system spanning journal selection, publication, preservation, and dissemination

价值·普惠：以中国高校智慧共筑全球知识共同体

Value Realization: Constructing a Global Knowledge Community with Chinese University Wisdom

项目秉持公益普惠理念，向185家机构开放资源与技术。在中国帮扶西部高校，与内蒙古、新疆等图工委达成合作，赋能西部10省70所高校，免费提供API接口，支持地方高校将OpenSign资源与自有馆藏深度融合。从1958年援建内蒙古工业大学，到2025年以数字资源填补内蒙古科研资源短板，清华大学跨越近七十年，接力推进教育公平与区域协调发展。

在国际层面，服务版图覆盖六大洲190余个国家和地区。依托亚洲大学联盟多边合作网络，面向13个国家15所成员高校开放资源服务，推动亚洲顶尖高校间的知识共享与人才共育。长效支持南非、巴西及47个非盟成员国科研发展，向全球南方国家共享优质学术资源，有效消弭数字鸿沟。

清华大学全球知识交流与服务体系，以跨地域知识互通促进文明互鉴，用本土化成果赋能全球学术生态，为全球知识共同体建设树立了标志性中国样本。

Guided by the principles of public welfare and inclusiveness, the project provides resources and technological empowerment for 185 institutions. In China, it has advanced inclusive support for western-region universities, establishing special partnerships with the Steering Committee for Academic Libraries in Inner Mongolia, Xinjiang, and other provinces to empower 70 universities across 10 western provinces. Free API interfaces are offered for local universities to deeply integrate OpenSign resources with their native collections. From its 1958 initiative to aid the founding of Inner Mongolia University of Technology to its 2025 efforts to bridge the region's research resource gaps through digital intelligence, Tsinghua University has sustained this nearly 70-year commitment to fostering educational equity and coordinated regional development.

Internationally, its platforms serve more than 190 countries and regions across six continents. Through the Asian Universities Alliance (AUA) multilateral network, the project provides open access to resources and services to 15 member universities in 13 countries, fostering knowledge sharing and joint talent cultivation among top Asian universities. It also provides long-term support to South Africa, Brazil, and 47 African Union member states, ensuring equal access to high-quality academic resources for the Global South and bridging the digital divide.

Tsinghua University's Global Knowledge Exchange and Service System provides a platform for mutual learning among civilizations, empowering the global academic ecosystem with localized achievements and setting a landmark example for building a collaborative global knowledge community.

全球名校“Z世代”青年交流活动

Global Campus Gen-Z Leaders Exchange





▲ 全球青年代表通过线上线下交流与内容共创，分享跨文化体验，增进相互理解。
Young participants from around the world engage in dialogue and co-create digital content, sharing cross-cultural experiences and fostering mutual understanding.

申报机构
Applying Institution

环球网
Global Times Online

其他参与机构
Other Participating Organizations

中国公共外交协会、上海交通大学、同济大学、澳门大学、北京外国语大学

China Public Diplomacy Association, Shanghai Jiao Tong University, Tongji University, University of Macau, Beijing Foreign Studies University

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国、英国、法国、巴西等30个国家和地区
Covering 30 countries and regions including China, the United States, the United Kingdom, France, Brazil

以互联网为纽带，项目汇聚来自30个国家和地区的青年，通过交流、体验与内容共创，推动不同文化背景青年平等对话、相互理解。

Connecting young people through the Internet, the project brought together participants from 30 countries and regions to engage in dialogue, shared experiences, and content co-creation, fostering mutual understanding across cultures.

汇聚全球青年，促进跨文化交流
Bringing Global Youth Together for Cross-Cultural Exchange

在数字化传播不断发展的背景下，项目以互联网为平台，联合多所高校，搭建面向全球青年的线上线下交流与内容共创机制。2025年4月至7月，来自30个国家和地区的143名青年代表及专家参与其中，覆盖亚洲、欧洲、北美、大洋洲等多个区域。

项目不以单向展示为主要方式，而是邀请不同文化背景的青年进入同一交流场景，从文化体验、城市观察到社会议题展开分享与互动。青年以第一视角记录在中国的所见所感，例如体验义乌的商业形态、感受C919等，并通过校园媒体、社交平台和青年社群持续分享。

交流也从线下活动延伸到线上互动。一位来自尼泊尔的学生曾通过社交媒体主动联系项目团队，希望持续参与交流。来自美国、意大利、巴西等国青年的自发分享，让不同文化背景的青年有机会围绕真实经历展开对话。由亲身体验形成的多元叙事，逐步连接起不同国家青年的交流网络。

Against the backdrop of rapidly evolving digital communication, the project used the Internet as a platform to establish an online and offline exchange and content co-creation mechanism for young people worldwide. From April to July 2025, 143 young representatives and experts from 30 countries and regions took part in the project, covering Asia, Europe, North America and Oceania.

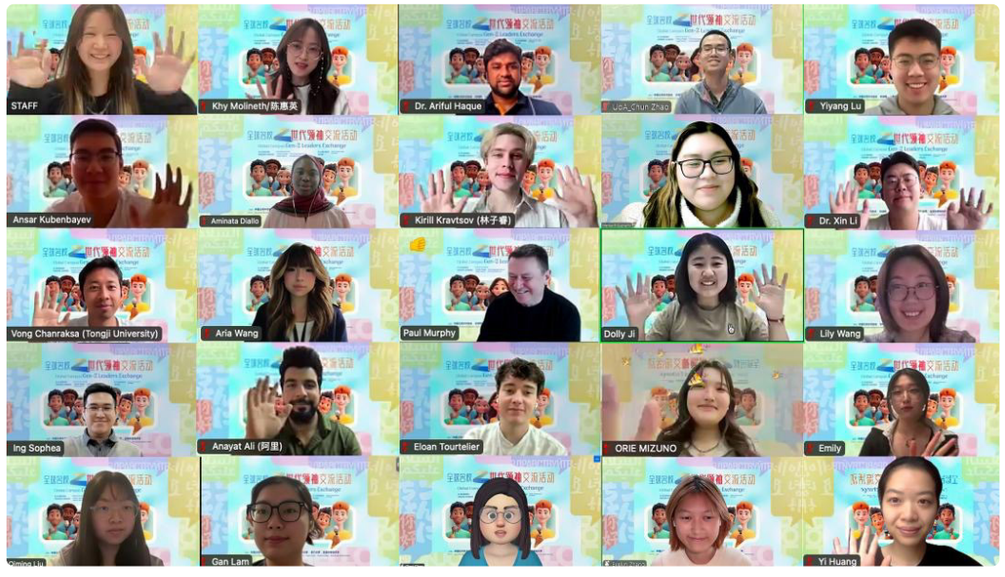
Rather than relying on one-way presentation, the project brought together young people from different cultural backgrounds to share and interact around cultural experiences, observations of cities and social issues. Participants documented what they saw and experienced in China from their own perspectives, including visits to Yiwu's commercial landscape and experiences related to the C919 aircraft, and continued sharing their perspectives through campus media, social platforms and youth communities.

The exchange also extended from offline activities to online interaction. For example, a student from Nepal proactively contacted the project team through social media to express a strong interest in continued participation. Spontaneous sharing by young participants from the United States, Italy, Brazil and other countries created opportunities for dialogue based on first-hand experiences. These diverse personal narratives gradually connected young people across countries and regions.





▲ 青年通过亲身体验观察中国社会，并以第一视角分享所见所感。
Participants explore life and society in China through first-hand experiences and share their perspectives.



▲ 来自不同国家和地区的青年代表共同参与交流活动。
Young participants from different countries and regions take part in the exchange activities.

青年共创，创新数字文化传播

Youth Co-Creation for Innovative Digital Cultural Exchange

项目将“青年共创”作为核心机制，推动青年从传统内容的接收者转变为交流故事的共同定义者、讲述者和传播者。青年与专业媒体团队开展联合采访、直播及多语种协作，围绕文化体验、城市观察和社会议题，共同完成图文、短视频、直播等数字内容。

在传播方式上，项目将校园媒体、社交平台和国际青年社群连接起来，通过多平台同步发布，让不同国家青年能够参与内容生产，也能够在内容传播过程中继续互动。不同文化背景的青年以各自视角讲述同一段经历，形成多元、真实的内容表达。

这一机制改变了传统“单向传播”的模式，形成“共同参与—共同创作—共同传播”的交流闭环。互联网降低了跨地域参与的门槛，使青年能够突破地域限制持续开展互动，也让文化交流从一次性的线下活动延伸为可持续的数字连接。

The project placed youth co-creation at its core, encouraging young people to move beyond being traditional content recipients and become co-definers, storytellers and communicators of exchange. Young participants worked with professional media teams on joint interviews, livestreams and multilingual collaboration, co-producing digital content in the form of articles, short videos and livestreams around cultural experiences, city observations and social issues.

In terms of dissemination, the project connected campus media, social platforms and international youth communities. Content was distributed across multiple platforms, enabling young people from different countries not only to participate in content creation but also to continue interacting during dissemination. Participants from diverse cultural backgrounds shared the same experiences from their own perspectives, creating more diverse and authentic narratives.

This mechanism moved beyond the traditional model of one-way communication and established a cycle of “joint participation, co-creation and shared dissemination”. By lowering the barriers to cross-border participation, the Internet enabled young people to interact beyond geographical boundaries and extended cultural exchange from one-off offline activities into sustained digital connections.



▲ 青年与专业媒体团队共同采访、拍摄并创作数字内容。
Young participants work with professional media teams to produce interviews and digital content.



▲ 项目通过校园媒体、社交平台和青年社群开展多平台、多语种传播。
The project connects campus media, social platforms and youth communities through multilingual, multi-platform communication.

数字连接，推动青年持续交流

Digital Connections for Sustained Youth Exchange

项目累计发布多语种内容2250篇，全球曝光超过2.2亿次，并形成覆盖30个国家和地区青年的交流网络。通过互联网平台，不同国家、不同文化背景的青年能够以较低的参与门槛分享个人经历、表达自身观点，并围绕真实体验开展互动，让更多青年能够参与跨文化交流。

项目注重以青年真实叙事促进理解。相比单向介绍，不同国家青年从各自视角讲述所见所闻，为其他青年提供了更加多元的观察窗口，也为不同文化背景之间的交流创造了更多自然、平等的对话空间。

在项目实施过程中，中国驻联合国代表团、多国使领馆与驻华使馆、世界大学气候变化联盟等参与共建，东方航空、百度、比亚迪等企业也借助项目触达国际青年群体。多元主体的参与进一步拓展了交流网络，使项目兼具社会交流价值与合作价值。

通过数字化方式连接青年、共享内容和促进互动，项目将线下交流产生的影响延伸至更广泛的线上空间，为全球青年开展持续、开放、平等的文化交流提供了实践路径。

The project produced 2,250 pieces of multilingual content, generating more than 220 million global impressions and building an exchange network connecting young people across 30 countries and regions. Through digital platforms, young people from different countries and cultural backgrounds were able to share personal experiences, express their perspectives and interact around first-hand experiences with relatively low barriers to participation, creating more opportunities for youth to engage in cross-cultural exchange.

The project emphasized youth-led storytelling as a way to foster understanding. Rather than relying on one-way introductions, participants from different countries shared what they saw and experienced from their own perspectives, providing broader and more diverse windows into each other's experiences and creating more natural and equal opportunities for dialogue across cultures.

During implementation, the Chinese Mission to the United Nations, embassies and consulates from multiple countries, and Global Alliance of Universities on Climate participated in the project. Companies including China Eastern Airlines, Baidu and BYD also engaged with international young people from through the project. The participation of diverse stakeholders further expanded the exchange network and created opportunities for both social interaction and collaboration.

By connecting young people, sharing content and facilitating interaction through digital platforms, the project extended the impact of offline exchange into a broader online space, providing a practical approach for sustained, open and inclusive cultural exchange among young people worldwide.





▲ 青年通过亲身体验观察中国社会，并以第一视角分享所见所感。
Participants explore life and society in China through first-hand experiences and share their perspectives.

《世界青年说》品牌节目

Global Youth Talk



▲ 青春聚首，文化共鸣：以青年之答回应时代之问
Youth Gather, Cultures Resonate: Young Voices Respond to the Questions of Our Times

申报机构
Applying Institution

央视国际网络有限公司
CCTV International Network Co., Ltd

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖巴基斯坦、俄罗斯、法国、哈萨克斯坦、拉脱维亚等21个国家和地区
Covering 21 countries and regions including Pakistan, Russia, France, Kazakhstan, Latvia

《世界青年说》是央视网自主打造的国际青年对话品牌节目，邀请全球青年代表围绕人工智能发展、科技创新等议题，以生动的视听语言和跨文化视角，讲述交流互鉴故事，为推动构建人类命运共同体贡献青春力量。

Global Youth Talk is an original international youth-dialogue programme developed by CCTV.com. It brings together young representatives from across the globe to discuss topics including artificial-intelligence development and scientific-technological innovation. Through vivid audio-visual narratives and cross-cultural perspectives, the programme shares stories of communication and mutual learning, pooling youthful energy to advance the building of a community with a shared future for mankind.

汇聚全球力量，织就多元交流网络

Synergizing Global Resources to Build an Inclusive Network of Exchange

项目搭建起覆盖全球青年交流矩阵，累计邀请哈萨克斯坦、埃及、法国、委内瑞拉、新西兰等国家和地区的青年代表参与，嘉宾涵盖在体育、文化文艺交流和创新领域中做出突出贡献或带来独特价值的优秀青年运动员、文艺工作者、跨文化交流推进者、知名博主及青年企业翘楚。以圆桌对话的形式，分享多元思考、深入交流成长感悟、共探文明互鉴之道，生动展现新时代青年的全球视野、青春热情与责任担当。

全球青年开展深度协同共创：联合策划节目内容、同场讨论和参与录制；全球青年依托个人社交账号，主动转发、解读节目内容，自发开展二次传播。形成“官方出品+青年自主传播”的双向联动模式，多国青年深度参与、双向互动，国际协作形式灵活、群众基础扎实。

The project has established a global youth engagement network, bringing together young representatives from different countries and regions, including Kazakhstan, Egypt, France, Venezuela, and New Zealand. Participants come from diverse backgrounds, including outstanding young athletes, artists, cross-cultural exchange promoters, well-known content creators and leading young entrepreneurs who have made remarkable contributions or delivered unique value in global sports, art, cultural exchange and innovation-driven fields. Through roundtable dialogues, participants share diverse perspectives, exchange personal experiences, and explore pathways for mutual learning among civilizations. The project vividly showcases the global outlook, youthful vitality, and strong sense of responsibility demonstrated by today's young generation.

Deep collaborative co-creation by global youth. Global young people jointly plan program topics, participate in roundtable discussions and co-host recordings. International participants also actively share and interpret the program through their personal social media accounts, generating organic secondary dissemination among global audiences. This has fostered a two-way communication model that combines officially produced content with voluntary dissemination by international youth. Through in-depth participation and two-way interaction among young people from multiple countries, the project has established a flexible model of international collaboration underpinned by strong public engagement.



2022年—2025年，《世界青年说》圆桌对话在历届中国国际智能传播论坛期间亮相。
From 2022 to 2025, the round-table dialogues of The Global Youth Talk were featured at successive sessions of the China International Intelligent Communication Forum.

创新内容表达，探索文化传播路径

Innovating Narratives and Charting New Paths for Cultural Communication

项目摒弃传统宏大叙事，采用小切口、生活化的内容创作思路，以青年身边话题、个人真实经历切入，让时代议题贴近青年认知、引发情感共鸣，拉近不同文化背景受众的距离。呈现形式丰富多元，包含圆桌对话、城市实地采风、创意短视频、人物专访等，打造轻量化、可视化、易传播的新媒体产品。

项目坚持“亲历者讲述”模式，邀请全球青年以第一视角分享在华生活、见闻与感悟，用真实故事消解文化隔阂。近年来持续扩容嘉宾阵容，吸纳全球网红博主、国际友人参与创作，不断丰富内容形态，强化跨文化传播的亲和力与感染力。

本项目形成的双向联动模式、内容创作方法、立体传播路径及人才培育机制，具有可复制性、可推广性，可作为国际青年文化交流项目的典型范本，为其他跨文化传播项目提供有益参考和经验借鉴。

By drawing on topics that resonate with young people and authentic personal experiences, it makes issues of the times more relatable to youth, fosters emotional resonance, and bridges cultural differences among audiences from diverse backgrounds. The project employs a wide range of content formats, including roundtable discussions, site visits across cities, creative short videos, and one-on-one interviews, thus developing lightweight, visual, and easily shareable new media works.

The project adheres to a first-hand storytelling model, inviting young people from around the world to share their life experiences, observations, and insights in China from a first-person perspective. Their true stories help break down cultural barriers. In recent years, the project has continued to expand its lineup of guests by engaging global influencers and international friends in content creation. With increasingly diverse formats, the project becomes more approachable and compelling for cross-cultural communication.

The project has developed a two-way engagement model, an innovative content creation methodology, a multi-dimensional communication framework, and a sustainable talent development mechanism. These practices are highly replicable and scalable, making the project a model for global youth cultural exchange initiatives and a valuable source of experience and inspiration for other cross-cultural communication programs.



来自哈萨克斯坦、埃及、法国、委内瑞拉、新西兰等国家和地区的青年代表参与世界青年说节目。
The program has brought together young representatives from different countries and regions, including Kazakhstan, Egypt, France, Venezuela, New Zealand, etc.

推动民心相通，讲好文明交流故事

Strengthening People-to-People Bonds through Compelling Stories of Civilizational Exchange

项目以青年为纽带，最大化释放文化交流与国际传播的普惠效应：

受众普惠：除央视网外，同步上线抖音、快手、微博、视频号等社交平台，以及YouTube、Facebook、TikTok等主流社交平台，面向全球免费播出，覆盖亿万全球青少年、普通网民与网络创作者。

参与普惠：不设置职业、身份门槛，普通青年、民间自媒体人、留学生也可参与节目录制与线上互动，让普通民众成为文明交流的主体。以“全球青年实地亲历+平等对话”的独特传播视角，让交流更鲜活、表达更立体、传播更接地气。

价值普惠：依托通俗化、生活化的内容，推动不同国家民众增进相互理解，让文化互鉴、民心相通的成果惠及全球不同圈层、不同地域的普通人。凝聚青春力量，讲好新时代文明交流故事。

The project leverages youth as a bridge to maximize value of the case for cultural exchange and international communication.

Audience Reach: In addition to CCTV.com, the program is available on major social media platforms, including Douyin, Kuaishou, Weibo, and WeChat Channels, as well as mainstream social media platforms such as YouTube, Facebook, TikTok. Freely accessible to audiences worldwide, it reaches hundreds of millions of young people, internet users, and digital content creators across the globe.

Inclusive Participation: The project places no restrictions on participants' professional backgrounds or social identities. Ordinary young people from around the world, independent social media creators, and international students are all welcome to take part in program recordings and online interactions, empowering ordinary people to become active participants in intercultural exchange. By combining first-hand experiences of foreign young people in China with equal dialogue among young people from around the world, the project offers a distinctive approach that makes cultural exchange more authentic, storytelling more multidimensional, and communication more engaging and relatable.

Shared Value: Through accessible, everyday storytelling, the project promotes mutual understanding among people from different countries, ensuring that the benefits of mutual learning among civilizations and closer people-to-people ties are shared by ordinary people across different communities and regions around the world. By harnessing the power of youth, it tells compelling stories of international exchange and friendship in the new era.



▲ 2026年7月，在世界人工智能大会未来青年科创论坛现场策划推出《世界青年说》圆桌对话节目。
In July 2026, the round-table dialogue program Global Youth Talk was curated and launched on-site at the Future Youth Science and Technology Innovation Forum of the World Artificial Intelligence Conference.



▲ 在2026年中国网络文明大会期间，邀请文化博主赵健、演员任璐遥、中国外交国礼瓷获得者埃文·凯尔、自媒体博主拉丁、意大利乡村生活博主美纳斯等青年代表参与节目录制。
During the 2026 China Internet Civilization Conference, young representatives including cultural blogger Zhao Jian, actress Ren Luyao, Evan Kail, recipient of China's state-gift porcelain for diplomatic purposes, content creator Zein Alabdin Ali, and Italian rural-life blogger Khezia Cosani were invited to participate in the program recording.

首尔大学AIIS跨学科AI创新平台：构建韩国人工智能基础研究、产业协同与人才培养枢纽

AIIS at Seoul National University: An Interdisciplinary Platform Linking Fundamental AI Research, Industry Collaboration and Talent Development



▲ AIIS揭牌与合作仪式现场，多国及产业界代表共同见证跨学科人工智能平台的正式运行。
An AIIS inauguration and partnership ceremony, with academic and industry representatives marking the launch of the interdisciplinary AI platform.

申报机构
Applying Institution

首尔大学人工智能研究院（AIIS）
Artificial Intelligence Institute at Seoul National University (AIIS)

其他参与机构
Other Participating Organizations

OpenAI、Cyber Valley（德国）、罗格斯大学、宾夕法尼亚大学（CTIC）、Mila（加拿大）、IVADO（加拿大）、杜伦大学、首尔 AI Hub、三星电子、LG、NAVER、谷歌、Kakao、现代摩比斯、EvidNet、韩国信息通信技术规划评估院（IITP）、韩国国家研究基金会（NRF）

OpenAI, Cyber Valley (Germany), Rutgers University, University of Pennsylvania (CTIC), MILA (Canada), IVADO (Canada), Durham University, Seoul AI Hub, Samsung Electronics, LG, Naver, Google, Kakao, Hyundai Mobis, Evidnet, Institute for Information & Communications Technology Planning & Evaluation (IITP), National Research Foundation of Korea (NRF)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖韩国、美国、德国、加拿大、英国等12个国家和地区
Covering 12 countries and regions including South Korea, the United States, Germany, Canada, and the United Kingdom

全球人工智能竞争加剧，单一学科或孤立机构难以应对复杂技术挑战。首尔大学人工智能研究院汇聚62个学科、300余名教授和2,000余名研究人员，搭建连接基础研究、产业应用与全球人才流动的协作平台，是韩国规模最大的跨学科人工智能研究机构之一。

As global competition in artificial intelligence intensifies, no single discipline or isolated institution can address the full complexity of the field. The Artificial Intelligence Institute at Seoul National University (AIIS) brings together more than 300 professors and 2,000 researchers across 62 disciplines to connect fundamental research, industrial application and global talent mobility, forming one of Korea's largest interdisciplinary AI institutes.

多国协同的跨学科人工智能创新网络

A Multi-Country Interdisciplinary Network for AI Innovation

首尔大学人工智能研究院（AIIS）成立于2019年12月，已与多国机构建立实质性合作。2025年9月，OpenAI与AIIS签署战略合作备忘录，推进生成式人工智能研究并规划加入NextGenAI联盟；美国罗格斯大学与AIIS人工智能半导体研究生院开展访问研究生项目，宾夕法尼亚大学CTIC与AIIS可信人工智能中心开展联合研究。德国Cyber Valley与AIIS、Seoul AI Hub签署三方备忘录，搭建亚欧创新桥梁；加拿大MILA、IVADO通过Seoul AI Hub与AIIS建立协作。东京大学、北京大学、清华大学、新加坡国立大学、阿尔托大学等亦与首尔大学保持学术交流与研究合作。国际网络因此覆盖北美、欧洲和亚太主要人工智能枢纽，而不是单一双边项目。

Established in December 2019, AIIS has built substantive partnerships worldwide. In September 2025, OpenAI signed a strategic memorandum with AIIS on generative AI research and planned participation in the NextGenAI consortium; Rutgers University runs a visiting graduate programme with the AI Semiconductor Graduate School, and the University of Pennsylvania's CTIC collaborates with the AIIS Center for Trustworthy AI. Cyber Valley signed a tripartite memorandum with AIIS and Seoul AI Hub, creating an Asia–Europe bridge; MILA and IVADO connect through Seoul AI Hub. Academic exchange also continues with the University of Tokyo, Peking University, Tsinghua University, the National University of Singapore and Aalto University. The international network therefore covers major AI hubs in North America, Europe and the Asia-Pacific, rather than a single bilateral project.



▲ AIIS揭牌/合作仪式现场，多国与产业界代表共同见证跨机构协作的正式启动。
An AIIS inauguration or partnership ceremony, with academic and industry representatives marking the launch of cross-institutional collaboration.



▲ 实验室中的人形机器人运动测试，对应AIIS在机器人与具身智能方向的研究布局。
A humanoid robot in laboratory motion testing, corresponding to AIIS research on robotics and embodied intelligence.

数据、算法与生态一体的闭环实施路径

A Closed-Loop Pathway Integrating Data, Algorithms and Ecosystem

本案例的核心创新，在于构建“基础研究—产业验证—全球协同—人才迭代”的闭环。AIIS实行Core AI与X+AI双轮架构，覆盖推理学习、语言认知、视觉感知、人工智能半导体、机器人以及医疗、金融等应用，并依托跨学科数据平台整合数十个学科的研究资源。2024年6月，AIIS与三星电子建立联合人工智能研究中心；2026年7月，与NVIDIA建立NVAITC联合实验室。国际合作采取“研究驻留+联合实验室+学术交换”的组合方式，产业侧则以定期“AI Retreat”对接三星、LG、Naver等企业，已有多位教授完成成果转化创业。实施路径把大学治理、产业出题和全球驻留写成可运转的制度，而不是临时性合作清单。

The case's core innovation is a closed loop of fundamental research, industrial validation, global collaboration and talent renewal. AIIS runs a dual architecture of Core AI and X+AI, covering reasoning, language, vision, AI semiconductors, robotics and applications in healthcare and finance, supported by a cross-disciplinary data platform. In June 2024 it established a joint AI research center with Samsung Electronics; in July 2026 it launched an NVAITC laboratory with NVIDIA. International work combines research residencies, joint laboratories and academic exchange, while biannual AI Retreats connect the institute with Samsung, LG and Naver; several professors have already created spin-off ventures. The implementation path is a working institution that joins university governance, industrial problem-setting and global residencies, not an ad hoc list of partnerships.



▲ K-Humanoid 相关活动合影，呈现人工智能、机器人与产业界联合推进人才与生态建设的场景。
A group photograph from a K-Humanoid-related event, showing joint work among AI, robotics and industry on talent and ecosystem building.



▲ 研究团队在实验室围绕人形机器人开展讨论，体现“基础研究—工程验证—产业对接”的实施路径。
Researchers discuss a humanoid platform in the laboratory, illustrating the path from fundamental research and engineering validation to industry engagement.

全球人工智能生态的示范与普惠价值

A Global Demonstration of Inclusive Value in the AI Ecosystem

AIIS推动的产学研合作，直接服务三星、LG、现代等企业的人工智能产品化。研究院与韩国国税厅、信用保证基金等公共机构合作，将人工智能应用于税务行政和金融担保等公共服务，并与Evidnet推进覆盖50余家医院的医疗人工智能联合学习。面向社会，“AI for All”系列内容免费开放人工智能教育；Seoul AI Hub支持360余家人工智能初创企业成长。这一跨学科治理结构，为大学人工智能机构打破学科壁垒、对接产业需求与全球资源提供了可参照的组织方式。普惠价值同时体现在公共部门应用、开放教育和初创企业支持：技术能力不被收束在单一实验室或单一企业，而能够进入税务、医疗、教育和创业现场。

Industry–academia work at AIIS supports AI productization at firms such as Samsung, LG and Hyundai. Partnerships with public institutions apply AI to tax administration and financial guarantees, while collaboration with Evidnet advances medical federated learning across more than 50 hospitals. The “AI for All” series offers free public education, and Seoul AI Hub supports more than 360 AI startups. The interdisciplinary governance model gives university AI institutes a reference for crossing disciplinary boundaries and connecting industrial demand with global resources. Inclusive value appears at the same time in public-sector applications, open education and startup support: technical capacity is not confined to one laboratory or one firm, but can enter tax administration, hospitals, classrooms and new ventures.



▲ 学者与服务/协作机器人合影于实验室，显示人工智能成果向公共与产业场景延伸的可能。
A researcher with collaborative robots in the laboratory, indicating how AI results may extend into public and industrial settings.



▲ AI Seoul 2025公开活动现场，体现面向社会的人工智能交流、科普与生态开放。
The public programme AI Seoul 2025, illustrating open exchange, public communication and ecosystem building around AI.

用影像记录伟大时代 让西藏更好走向世界——“扎西德勒”西藏网络影像节

Recording the Times with Images and Let Xizang better Embrace the World--"Tashi Delek" Xizang Internet Photography & Video Festival



“扎西德勒”第六届西藏网络影像节概念海报
"Tashi Delek" The 6th Xizang Internet Photography & Video Festival

申报机构
Applying Institution

西藏自治区互联网信息办公室
Cyberspace Administration of Xizang

其他参与机构
Other Participating Organizations

新华网
Xinhuanet

中国互联网新闻中心
China Internet Information Center

人民网
People's Daily Online

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、印度、巴基斯坦等180多个国家和地区
Covering more than 180 countries and regions including the United States, India, and Pakistan

“扎西德勒”西藏网络影像节以大美西藏、幸福西藏、和谐西藏为视觉和听觉出口，以时代议题凝聚精神力量，将伟大奇迹浓缩在影像里，以影像传递美丽幸福西藏为切入点，讲好西藏故事，传播西藏好声音。

The "Tashi Delek" Xizang's Internet Photography & Video Festival takes Beautiful Xizang, Happy Xizang and Harmonious Xizang as its audio-visual themes. Drawing on contemporary themes to foster spiritual strength, it showcases remarkable achievements through photos and videos, helping tell compelling Xizang stories and spread its positive voice.

遇见西藏，扎西德勒
Meeting Xizang · Tashi Delek

2020年以来，西藏连续举办六届网络影像节，依托人民网、新华网、中国网等媒体机构强大传播矩阵，在全球全平台发布征集公告，多平台贯通，最大范围拓宽作品来源，评选全球优质涉藏影像作品，致力于搭建网络国际传播新平台、讲好西藏故事新阵地、展示西藏形象新窗口。

六年来，“扎西德勒”西藏网络影像节累计征集反映西藏发展变化的影像作品47.48万余件，其中，国际网友投稿作品1.7万余件，活动资讯覆盖美国、印度、巴基斯坦等180多个国家和地区，在人民网、新华网、雅虎、FOX电视网、NBC、ABC等全球1100多家媒体广泛推送，微博、微信、抖音、Facebook、X、YouTube等全球社媒平台同向发力、同频共振，优质影像作品及资讯多次亮相美国纽约时代广场大屏，全网传播量近70亿次。

Since 2020, six editions of the "Tashi Delek" Xizang Internet Photography & Video Festival have been held. Leveraging the robust communication matrix of media outlets, including People's Daily Online, Xinhuanet and China.org.cn, the festival has issued global open-call announcements across international platforms. Through multi-platform coordination, it expands sources of entries on the widest possible scale and selects high-quality Xizang-themed video and photograph works submitted worldwide. The festival is committed to building a new platform for international online communication, a new front for telling Xizang's stories and a new window for presenting Xizang's image to the world.

Over the past six years, the festival has collected more than 474,800 image works documenting Xizang's development and transformation, among which over 17,000 works were submitted by global internet users. News of the event has reached over 180 countries and regions, such as the United States, India and Pakistan, and has been widely reported by more than 1,100 media organizations across the globe, including People's Daily Online, Xinhuanet, Yahoo, FOX, NBC and ABC. Global social-media platforms such as Weibo, WeChat, Douyin, Facebook, X and YouTube have formed synergy to amplify its influence. High-quality works and related news have appeared many times on giant screens at Times Square in New York, the United States. The festival has racked up a total online view count of nearly 7 billion.



▲ 优质作品《世外桃园》
“Blooming Peach Blossoms”Of High Quality Work



▲ 第五届西藏网络影像节优质作品展览展示
Exhibition of High-Quality Works from The 5th China Xizang Internet Photography & Video Festival

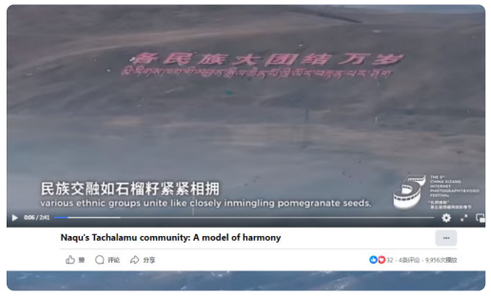
以影像为媒，讲好西藏故事

Using Photos and Videos as the Mediums to Tell Attractive Stories of Xizang

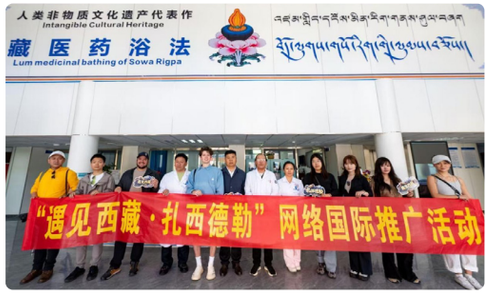
西藏网络影像节以影像为媒，以网络为介，立足国际社会关注点和西藏特点，采用移动化、社交化、可视化的传播手段，在全球范围内征集图片、短视频、动漫动画、网络音乐等作品，鼓励网友自主创作、深度参与、主动表达，让受众在鲜活的画面、真实的场景、走心的话语中真切看到西藏的发展变化，感受雪域儿女的奋进热情，引起全球网友的情感共鸣。

西藏网络影像节坚持创新活动形式，进一步拓宽影像征集活动的内涵和外延，先后开展“遇见西藏·扎西德勒”网络国际传播活动、“乡见光影·扎西德勒”美丽乡村影像计划驻地创作活动，举办“你好，西藏”圆桌论坛及优质作品线下展览展示等活动，丰富涉藏网络国际传播产品形态，扩大活动辐射范围和覆盖面。

The Xizang Internet Photography & Video Festival leverages photos, videos and the internet as its media. Grounded in international concerns and Xizang's unique characteristics. Adopting mobile friendly, social oriented and visual communication approaches, it calls for global submissions of photographs, short videos, animations, cartoons, online music and other works. It encourages internet users to create independently, participate deeply and express themselves actively. Through vivid footage, authentic scenes and heartfelt narratives, audiences can witness Xizang's development and changes firsthand, feel the enterprising spirit of people on the snowy plateau, and evoke emotional resonance among netizens worldwide. The Xizang Internet Photography & Video Festival keeps innovating its activity formats to further expand the connotation and extension of its image soliciting campaigns. It has successively carried out “Meeting Xizang · Tashi Delek” international online communication events, “Seeing the Countryside with Light and Shadow·Tashi Delek” beautiful countryside photography&video project residency creation activity, as well as the “Hello, Xizang” round-table conference and offline exhibitions of high quality works. These efforts enrich the forms of international online communication products related to Xizang and expand the reach and coverage of the festival.



▲ 国际社交平台发布截图
Screenshots of global Media' Report



▲ “遇见西藏·扎西德勒”网络国际传播活动现场
“Meeting Xizang · Tashi Delek” international online communication event

让西藏走向世界，让世界了解西藏

Let Xizang Be Internationally Recognized and Let the World Understand Xizang

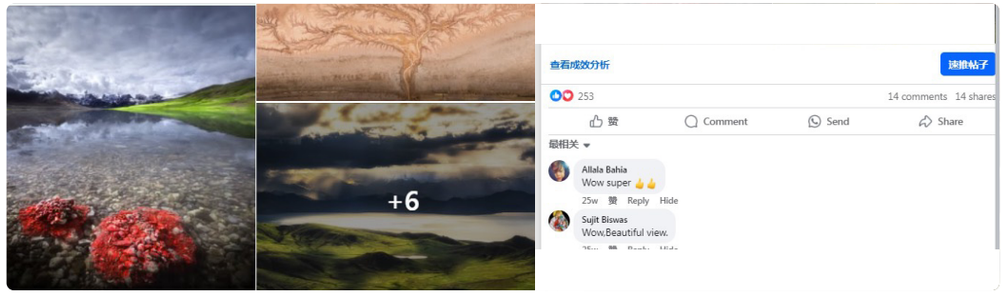
西藏网络影像节举办以来，参与人数越来越多、传播范围越来越广、辐射影响越来越大，不断获得全球网友的点赞支持和积极评价，也获得了多项荣誉肯定。中国外交部原新闻司副司长、发言人汪文斌在国际社媒账号转发西藏网络影像节优质作品，推介西藏古建筑和美景；美国媒体人上官杰文评论相关作品称：“看到了阳光明媚、人民繁荣兴旺的地方，感觉真棒”；X平台网友Zuri Silva说“西藏原来是这样美好，和我之前在网上看见的太不一样了，有机会我一定要去看看”。YouTube网友Velvet Rubee说“我也想像那个获奖的司机一样，拍很多西藏的照片”。

时代发展需要用镜头深情记录，西藏巨变需要借网络精彩远播，“扎西德勒”西藏网络影像节已逐步成为展示发展成就、传播中华文化、促进文明交流互鉴的新载体新平台。

Since the Xizang Internet Photography & Video Festival, it has attracted a growing number of participants and gained an ever-wider reach and influence. It has won praise and positive comments from netizens across the globe and received numerous honors and recognitions.

Wang Wenbin, former Deputy Director-General and Spokesperson of the Department of Information of the Ministry of Foreign Affairs, reposted selected works from the festival via his official global social media accounts, highlighting Xizang's ancient architecture and scenic landscapes. American journalist Shangguan Jiewen commented on related works, saying, “It's amazing to see such a sunny, prosperous place”. X user Zuri Silva remarked, “Xizang is so beautiful-it's so different from what I've seen online before. I definitely have to go see it for myself if I get the chance”. YouTube user Velvet Rubee said, “I want to take lots of photos of Xizang just like that award-winning driver did”.

The progress of our era calls for heartfelt documentation through the lens, and the profound transformation of Xizang deserves to be shared widely through digital platforms. The “Tashi Delek” Xizang Internet Photography & Video Festival has steadily evolved into a new vehicle and platform for showcasing developmental achievements, disseminating Chinese culture, and fostering mutual learning among civilizations.



▲ 国际社交媒体网友留言截图
Screenshot Of Comments From international Social Media Users

中国海事航海图书在线服务

Maritime Safety Administration of The People's Republic of China Nautical Publications Online Service



▲ 中国海事航海图书在线服务网站提供中英文页面，全球船舶用户可在此一站式获取中国沿海权威航海图书资料。
The Maritime Safety Administration of The People's Republic of China(China MSA) Nautical Publications Online Service(CMNPOS) provides both Chinese and English interfaces, serving as a one-stop platform to global maritime users to access authoritative nautical charts and publications for China's coastal waters.

申报机构

Applying Institution

中华人民共和国交通运输部海事局
Maritime Safety Administration of the People's Republic of China (China MSA)

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国、德国、日本、澳大利亚、巴西等200多个国家和地区
Covering more than 200 countries and regions, including China, the United States, Germany, Japan, Australia, Brazil

航海图书资料是保障海上航行安全的关键依据。传统纸质海图发行模式难以满足全球船舶对实时、精准航海信息的需求。中国海事局依托互联网技术，打造航海图书在线服务平台，推动航海文化产品的数字化生产与网络化传播，开启全球航运知识共享新篇章。

Nautical charts and publications are fundamental to maritime navigation safety. Traditional paper chart distribution models struggle to meet the global demand for real-time, accurate nautical information. The China MSA has developed an online platform, enabling the digital production and online dissemination of maritime products and opening a new chapter in global maritime knowledge sharing.

以数字化航海图书服务，搭建全球航运文化交流与知识共享平台

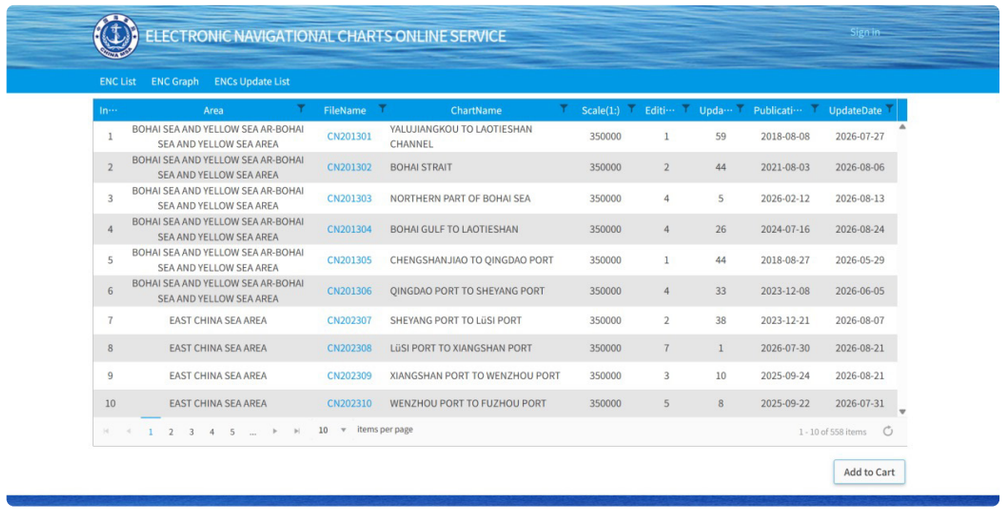
Establishing a global platform for maritime cultural exchange and knowledge sharing through digital nautical publication services

航海图书资料承载着人类探索海洋、保障航行安全的文化与技术结晶。作为国际海事组织（IMO）成员国和《国际海上人命安全公约》（SOLAS）缔约国，中国海事局积极履行国际义务，于2019年正式上线"中国海事航海图书在线服务"网站（https://www.chart.msa.gov.cn），为全球船舶用户提供中国沿海及周边海域权威航海图书资料。

平台整合了571幅纸海图、555幅电子海图以及航行指南、潮汐表等出版物，覆盖中国全部沿海港口及重要航道。网站支持中英文双语服务，注册用户已超过1万个，涵盖海事机构、航运公司及代理服务商等多元主体，年均用户登录近200万次、电子海图发行超500万幅次。服务范围已覆盖全球多个国家和地区，显著提升了中国航海图书资料的国际可获取性与影响力，体现了网络空间命运共同体中知识共享与能力共建的精神。

Nautical charts and publications embody the cultural and technological heritage of ocean exploration and navigational safety. As a member of the International Maritime Organization (IMO) and a contracting party to the SOLAS Convention, the China MSA launched the CMNPOS website (www.chart.msa.gov.cn) in 2019, providing authoritative nautical chart and publication services for vessels navigating China's coastal and adjacent waters.

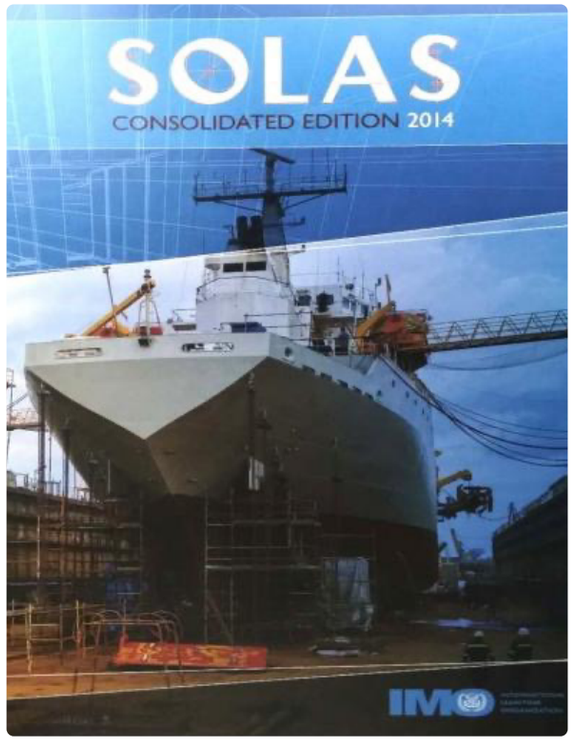
The platform integrates 571 paper charts, 555 electronic navigation charts (ENCs), sailing directions, tide tables, and other publications, covering all major ports and key navigation routes along China's coast. The website supports both Chinese and English interfaces. It has registered over 10,000 users, including maritime authorities, shipping companies, and chart agents. The platform records approximately 2,000,000 user logins annually and distributes over 5,000,000 ENC units per year. Its services cover multiple countries and regions worldwide, significantly enhancing the international accessibility and influence of China's nautical publications, embodying the spirit of knowledge sharing and capacity building in a shared future in cyberspace.



In…	Area	FileName	ChartName	Scale(1:)	Editi…	Upda…	Publicati…	UpdateDate
1	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201301	YALUJIANGKOU TO LAOTIESHAN CHANNEL	350000	1	59	2018-08-08	2026-07-27
2	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201302	BOHAI STRAIT	350000	2	44	2021-08-03	2026-08-06
3	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201303	NORTHERN PART OF BOHAI SEA	350000	4	5	2026-02-12	2026-08-13
4	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201304	BOHAI GULF TO LAOTIESHAN	350000	4	26	2024-07-16	2026-08-24
5	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201305	CHENGSHANJIAO TO QINGDAO PORT	350000	1	44	2018-08-27	2026-05-29
6	BOHAI SEA AND YELLOW SEA AR-BOHAI SEA AND YELLOW SEA AREA	CN201306	QINGDAO PORT TO SHEYANG PORT	350000	4	33	2023-12-08	2026-06-05
7	EAST CHINA SEA AREA	CN202307	SHEYANG PORT TO LüSI PORT	350000	2	38	2023-12-21	2026-08-07
8	EAST CHINA SEA AREA	CN202308	LüSI PORT TO XIANGSHAN PORT	350000	7	1	2026-07-30	2026-08-21
9	EAST CHINA SEA AREA	CN202309	XIANGSHAN PORT TO WENZHOU PORT	350000	3	10	2025-09-24	2026-08-21
10	EAST CHINA SEA AREA	CN202310	WENZHOU PORT TO FUZHOU PORT	350000	5	8	2025-09-22	2026-07-31

1 2 3 4 5 … 10 items per page 1 - 10 of 558 items

▲ 船舶用户通过发行网站在线下载电子海图的操作界面
Mariners downloading electronic navigation charts online via the CMNPOS website.



通过POD按需打印与电子海图自动更新技术，实现航海图书产品创新性数字化生产与传播

The platform utilizes Print-on-demand(POD) and automatic ENC updating technologies to achieve innovative digital production and dissemination of nautical charts.

中国海事航海图书在线服务实现了两大技术创新。一是纸海图POD按需打印机制，颠覆了传统大批量预印库存模式。用户在线下单后，系统自动调用最新版海图数据，驱动分布式打印节点即时印刷，确保每一张海图均为最新版本，彻底消除了小改正滞后带来的安全隐患，同时大幅降低了资源浪费和库存成本。二是电子海图安全发行与在线更新体系。平台严格遵循国际海道测量组织（IHO）S-63国际标准，采用Blowfish加密与双重验证机制，实现"一图一密、一设备一许可"，有效杜绝了非法复制与盗版行为。同时开发了在线自动更新功能，支持船载终端一键获取增量更新包，实现无人值守式数据同步，确保船舶在任何海域都能获得最新海图数据。此外，平台还通过微信公众号、二维码等多渠道推送航海信息服务，推动科技与人文交汇交融，使航海文化产品实现高效、安全、绿色的网络化传播。

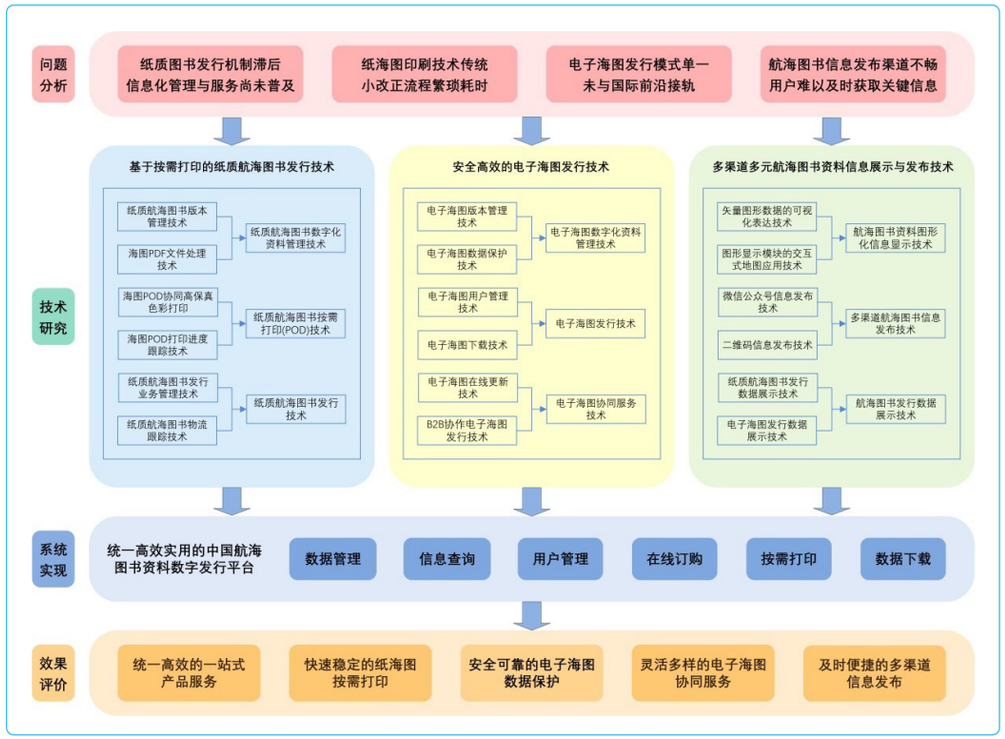
The China MSA Nautical Publications Online Service has introduced two major innovations. First, the nautical chart Print-on-Demand (POD) mechanism, which replaces traditional mass printing and inventory models. After a user places an order online, the system automatically retrieves the latest chart data and drives distributed printers to produce charts instantly, ensuring that every chart is the most up-to-date version, eliminating safety risks caused by delayed manual corrections, and significantly reducing resource waste and inventory costs.

Second, the secure ENC distribution and online update system strictly follows IHO S-63 international standards. It employs Blowfish encryption and a dual-layer verification mechanism to achieve "one chart, one key; one device, one permit", effectively preventing unauthorized copying and piracy. The platform also provides an online automatic update function, allowing onboard terminals to download and install incremental updates with one click for unattended data synchronization, ensuring vessels have access to the latest chart data regardless of their location..

In addition, the platform disseminates nautical information through multiple channels such as WeChat official accounts and QR codes, promoting the intersection of technology and humanities, and enabling efficient, secure, and green online dissemination of maritime cultural products.



上海海图中心纸海图POD印制车间
POD Printing Workshop for Paper Charts at Shanghai Chart Center



中国海事航海图书在线服务网站主要功能创新
Key Functional Innovations of China MSA Nautical Publications Online Service Website

惠及全球航运用户，有效提升海上航行安全与效率

Benefiting Maritime Users Worldwide and Effectively Improving Maritime Safety and Efficiency

中国海事航海图书在线服务为全球船舶用户提供了稳定、权威、及时的航海图书保障，有效守护了海上航行安全。平台每年为中小航运企业电子海图终端设备提供免费电子海图服务，切实降低了全球航运业获取权威航海信息的门槛，体现了数字服务的普惠价值。

截至2026年8月，平台年均销售额近3000万元人民币，POD打印纸海图超过13万张，经济效益显著。该服务不仅提升了中国在国际航海图书领域的服务能力与话语权，更通过数字化手段促进了航海文化的全球共享，有力助推了联合国2030可持续发展议程中关于基础设施、创新与伙伴关系的目标实现。

Since the launch of the CMNPOS, it has provided stable, authoritative, and timely nautical publication services to maritime users worldwide, effectively safeguarding maritime navigation safety. The platform provides free ENC services every year to ECS devices of small and medium-sized shipping enterprises, effectively lowering the threshold for the global shipping industry to obtain authoritative nautical information and demonstrating the inclusive value of digital services.

As of August 2026, the platform's average annual sales revenue is nearly 30 million RMB, with over 130,000 POD nautical charts printed each year, demonstrating significant economic benefits. This service not only enhances China's service capacity and voice in the international nautical chart field but also promotes the global sharing of maritime culture through digital means. It contributes to the UN 2030 Sustainable Development Agenda, particularly goals related to infrastructure, innovation, and partnerships.



▲ 国际航标组织（IALA）海上导助航高级管理人员培训班在上海开班
The International Organization for Marine Aids to Navigation(IALA) Advanced Training Course for Senior Executives Commences in Shanghai



▲ 中国代表出席国际海道测量组织（IHO）第四届大会
Chinese Representatives Attending the 4th Assembly of the International Hydrographic Organization (IHO)

聚焦中国：打造中国与世界交流互鉴、共同发展的平台

China Focus: Building a Platform for Exchanges, Mutual Learning, and Shared Development Between China and the World



▲ 聚焦中国 / China Focus

申报机构
Applying Institution

中国互联网新闻中心
China Internet Information Center

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、英国、法国、德国、俄罗斯等40多个国家和地区
Covering more than 40 countries and regions including the United States, United Kingdom, France, Germany, Russia

当今世界瞬息万变，亟需构建平等互信的跨国对话机制。作为中国外文局深度传播统一品牌，“聚焦中国ChinaFocus”致力于搭建连接中国与世界的桥梁，全面阐释中国方案与中国道路，促进文明交流互鉴，携手实现共同发展。

In today’s fast-changing world, creating an international dialogue mechanism built on equality and trust is more important than ever. China Focus, a brand from China International Communications Group (CICG) specializing in in-depth communication, is dedicated to connecting China with the rest of the world. The platform explains China’s approaches and development path, encourages mutual learning among cultures, and works toward shared global progress.

打造精品视频栏目，以独特视角讲述中国故事
Creating Content that Tells China’s Story Through Unique Perspectives

集中优势资源，精心打造“在中国寻找答案”“第三只眼见中国”“智见”等精品节目。其中，“在中国寻找答案”采用国际主持人“跟访+纪录”的沉浸式视角，深入企业、校园、城市、乡村等多元场景，与各界代表深度对话，讲述真实中国。

第四季节目中，叙利亚主持人对话德国企业创始人，借其扎根中国、见证北仑港发展及宁波营商环境优化的故事，生动展现中国以开放友好的法治化营商环境，为国际企业提供发展机遇，助其成长壮大。

第五季的受访嘉宾在COP30能源主题活动上推荐《从濒危走向独立亚种：神农架金丝猴如何借能源转型“逆天改命”？》，使视频在更高的国际舞台上得到展示。同时，该视频也在联合国纽约总部作了展播。

节目通过真实生动的案例与国际化表达，让中国故事更易于被世界理解，让中国声音传得更远。

We have focused its resources on creating a series of branded programs, such as “Finding Answers in China”, “My China Eye”, and “To The Point”. “Finding Answers in China” uses an immersive, documentary-style approach led by international hosts. They delve into diverse settings, including businesses, universities, cities, and rural communities, to engage in in-depth conversations with people from different fields, sharing their first-hand experiences of the real China.

In the fourth season, a host spoke with the founder of a German company. Through his story of living in China, witnessing the development of Beilun Port, and experiencing Ningbo’s improving business environment, the episode showed how international companies can find a welcoming, law-based business environment and opportunities to grow in China.

In the fifth season, the documentary “How Clean Energy Fuels the Comeback of Shennongjia’s Golden Snub-nosed Monkeys” was highlighted at a COP30 energy-themed event, significantly enhancing its international visibility. The documentary was also shown at the United Nations Headquarters.

By sharing real stories with a global perspective, the programs make Chinese stories easy to understand and thus more influential worldwide.



▲ 视频节目《在中国寻找答案（第五季）》
Video program “Finding Answers in China” (Season V)



▲ 视频《从濒危走向独立亚种：神农架金丝猴如何借能源转型“逆天改命”？》在纽约联合国总部展播
Documentary “How Clean Energy Fuels the Comeback of Shennongjia's Golden Snub-nosed Monkeys” was shown at the United Nations Headquarters

汇聚全球高端人脉力量，在理性对话中促进共同发展

Working with Global Experts to Promote Shared Development Through Dialogue

“聚焦中国”平台汇聚了包括法国前总理拉法兰、吉尔吉斯斯坦前总理卓奥玛尔特·奥托尔巴耶夫、联合国前副秘书长索尔海姆、英国经济学家罗思义等百余名国际知名人士，组成了一支具有广泛代表性和国际影响力的专家评论员队伍。通过成体系、有深度的观点输出，为国际社会搭建了理性探讨中国发展的公共空间，更将中国经验转化为可供其他国家参考的方案，推动各方在交流互鉴中迈向共同发展。例如，通过专家解读中国在数字经济领域的成就，让国际受众进一步了解数字人民币如何使贸易更加便利，并帮助发展中国家更顺畅地参与全球经济。

We have established a strong network of expert commentators with broad representation and international influence. The team includes over a hundred well-known figures worldwide, such as former French Prime Minister Jean-Pierre Raffarin, former Kyrgyz Prime Minister Djoomart Otorbaev, former UN Under-Secretary-General Erik Solheim, and British economist John Ross. Through their insights, we offer a platform for international discussion about China’s development and share China’s experiences as useful references for other countries. For instance, articles by experts on China’s digital economy have shown how the e-CNY makes trade easier and helps developing countries participate in the global economy more easily.



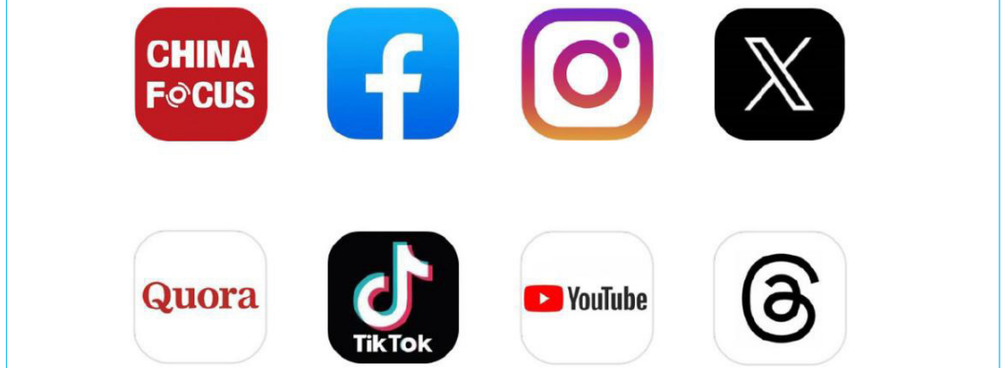
▲ 高端访谈节目《第三只眼见中国》
In-depth interview program“My China Eye”

坚持普惠包容理念，促进文明交流互鉴

Being Inclusive by Developing Cultural Exchange and Mutual Learning

精心构建涵盖Facebook、Instagram、X、Quora、TikTok等主流国际社交媒体平台的矩阵，积累了逾500万高黏性粉丝，受众遍及美国、英国、法国、德国、俄罗斯、澳大利亚、巴西、巴基斯坦等40多个国家和地区。近年来年均阅读量逾2亿次，互动量逾600万次。我们始终坚持开放包容的价值导向，致力于让不同背景的受众都能客观了解中国发展，在交流互鉴中展现中国的发展成就。

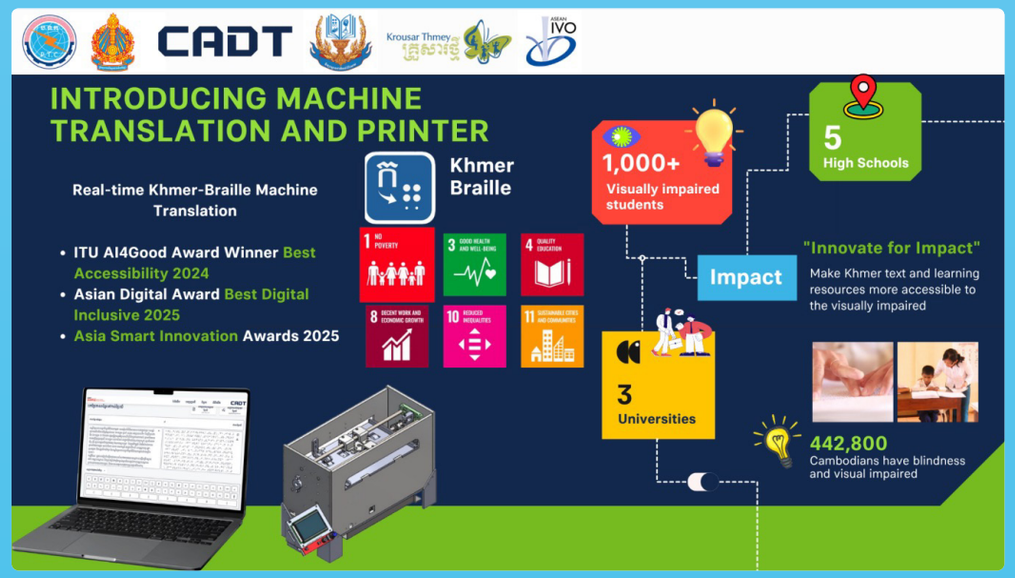
we have built a strong presence across popular social media platforms such as Facebook, Instagram, X, Quora, and TikTok, bringing together over 5 million followers across more than 40 countries and regions, including the United States, the United Kingdom, France, Germany, Russia, Australia, Brazil, and Pakistan. The channels have averaged more than 200 million views and over 6 million interactions annually in recent years. Driven by openness and inclusivity, we aim to help people from all backgrounds understand China’s development and to present its progress through dialogue and visual learning.



▲ 媒体矩阵
Social media accounts

用于无障碍学习和包容性教育的综合高棉语盲文翻译及低成本盲文印刷解决方案

Integrated Khmer Braille Translation and Low-Cost Braille Printing Solution for Accessible Learning and Inclusive Education



▲ 一款面向柬埔寨视障学习者、旨在提升教育资源可获取性的高棉语盲文机器翻译与印刷一体化系统
An integrated Khmer Braille machine translation and printing system designed to improve accessibility to educational resources for visually impaired learners in Cambodia.

申报机构
Applying Institution

柬埔寨数字技术学院
Cambodia Academy of Digital Technology (CADT)

其他参与机构
Other Participating Organizations

柬埔寨邮电部、Krousar Thmey 公益组织、国家特殊教育学院（NISE）、东盟国家信息通信技术虚拟组织（ASEAN IVO）、缅甸仰光计算机大学（UCSY）、老挝国立大学、马来西亚理工大学（UTM）

Ministry of Post and Telecommunications; Krousar Thmey Organization; National Institute for Special Education (NISE), Ministry of Education, Youth and Sport; ICT Virtual Organization of ASEAN Institutes and NICT (ASEAN IVO); University of Computer Studies, Yangon (UCSY); National University of Laos; Universiti Teknologi Malaysia (UTM)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

柬埔寨、老挝、缅甸和马来西亚
Cambodia, Laos, Myanmar, and Malaysia

在许多东盟国家，尤其是柬埔寨，获取盲文资料的机会极为有限。目前，大多数高棉语盲文的制作依赖于昂贵的专有软件、人工转录或进口的盲文打印机，这些因素都导致运营成本高昂、产量低，且经常出现排版或显示错误。根据我们的内部研究，柬埔寨的盲人学校面临以下困境：(1) 授权软件成本高昂；(2) 由于高棉文字结构复杂，导致其戳写呈现不准确；(3) 盲文打印机供应有限。这些挑战使得许多视障人士无法获得充足的学习资料，特别是在公立学校和农村地区。为解决这些限制，我们致力于为高棉语及东盟其他资源匮乏的语言，创建一套全面、自动化且易于使用的文本转盲文翻译与打印系统。

Access to Braille materials in many ASEAN countries, especially Cambodia is extremely limited. Currently, most Khmer Braille production relies on expensive proprietary software, manual transcription, or imported braille printers, all of which contribute to high operating costs, low production volume, and frequent formatting or display errors. According to our internal research, Cambodian schools for the visually impaired struggle due to (1) costly licensed software, (2) incorrect Khmer script rendering due its complicated, and (3) limited available of Braille printers. These challenges prevent many visually impaired individuals from receiving adequate learning materials, especially in public schools and rural areas. To address these limitations, we aim to create a comprehensive, automated, and accessible Text-to-Braille translation and printing system for Khmer and other low-resource languages in ASEAN.

为东盟资源匮乏语言构建经济实惠的盲文翻译与印刷生态系统：高棉语盲文的案例分析

Building an affordable Braille translation and printing ecosystem for low-resource languages in ASEAN: Use case from Khmer Braille

高棉语盲文机器翻译项目是由柬埔寨数字技术学院（CADT）与国家特殊教育学院（NISE）共同开发的包容性数字创新项目。该项目将基于万维网的开源高棉语-盲文翻译平台与价格实惠的盲文打印机相结合，为无障碍教育资料提供了端到端的解决方案。该平台支持高棉语与盲文的双向翻译，并允许用户将材料导出，使用经济实惠的打印机和低成本打印耗材进行打印。该系统和打印机已在NISE部署并经过测试，持续收集的用户反馈将支持后续的改进。除柬埔寨外，该项目正在老挝、缅甸和马来西亚等拥有资源匮乏语言和复杂文字系统的其他东盟国家进行探索。通过东盟国家信息通信技术虚拟组织的区域合作，该项目将促进数据集共享、多语言翻译研究以及跨国无障碍标准协调。该倡议直接支持包容性教育、数字无障碍以及联合国可持续发展目标（SDG 4：优质教育；SDG 10：减少不平等），同时推动东盟在信息通信技术领域赋能社区和辅助技术方面的优先事项。

The Khmer Braille Machine Translation Project is an inclusive digital innovation jointly developed by the Cambodia Academy of Digital Technology (CADT) and the National Institute for Special Education (NISE). It integrates an open-source web-based Khmer-to-Braille translation platform with an affordable Braille printer, providing an end-to-end solution for accessible educational materials. The platform supports bidirectional Khmer and Braille translation and enables users to export materials for printing with affordable printers and low-cost printing material. The system and printer have been deployed and tested at NISE, with continuous feedback supporting further improvement. Beyond Cambodia, the project is being explored in other ASEAN countries with low-resource languages and complex scripts such as Laos, Myanmar, and Malaysia. Through regional collaboration in the ASEAN IVO (ICT Virtual Organization of ASEAN Institutes and NICT), the project will enable dataset sharing, multilingual translation research, and cross-country accessibility alignment. This initiative directly supports inclusive education, digital accessibility, and the United Nations Sustainable Development Goals (SDG 4: Quality Education; SDG 10: Reduced Inequalities) while advancing ASEAN priorities in ICT for community empowerment and assistive technologies.



在柬埔寨构建包容性学习机会
Building Inclusive Learning Opportunities in Cambodia

通过盲文翻译和低成本印刷推动高棉语数字无障碍发展

Advancing Khmer Digital Accessibility through Braille Translation and Low-Cost Printing

该项目研究了多种机器翻译方法，包括神经机器翻译（NMT）、统计机器翻译（SMT）、基于Transformer的模型以及基于规则的映射技术。实验结果表明，在高棉语到盲文的翻译中，基于规则的词典方法实现了最高的准确率和可靠性。所提出的方法首先对高棉语的语言结构进行分析，并开发了一套将高棉文字映射到相应ASCII码的词典。翻译流程以高棉语文本输入为起点，随后使用Khmer-NLTK工具包对高棉语进行分词。分词后的文本再根据高棉语盲文书写规则进行GCC分段和重新排序。最后，利用开发的字典映射系统，将处理后的文本翻译成高棉语盲文。基于该方法，开发了一个基于网页的高棉语至盲文翻译平台，旨在为教育工作者、学生和盲文使用者提供便捷且用户友好的翻译服务。

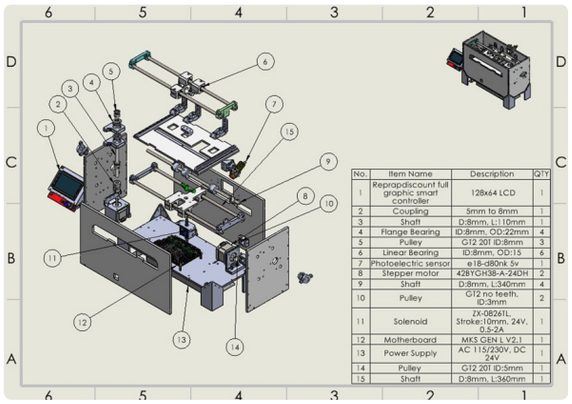
The project investigates several machine translation approaches, including Neural Machine Translation (NMT), Statistical Machine Translation (SMT), Transformer-based models, and rule-based mapping techniques. Experimental results indicate that the rule-based dictionary approach achieves the highest accuracy and reliability for Khmer-to-Braille translation. The proposed approach begins with an analysis of Khmer linguistic structures and the development of a dictionary that maps Khmer characters to corresponding ASCII codes. The translation pipeline starts with Khmer text input, followed by Khmer word segmentation using the Khmer-NLTK toolkit. The segmented text then undergoes GCC segmentation and reordering based on Khmer Braille writing rules. Finally, the processed text is translated into Khmer Braille using the developed dictionary mapping system. Based on this approach, a web-based Khmer-to-Braille translation platform was developed to provide accessible and user-friendly translation services for educators, students, and Braille users.

此外，还开发了一款设计简单、易于维护且可扩展的低成本盲文打印机，以方便在资源有限的环境中部署。该机械原型设计灵感源自BrailleRap。该打印机利用电磁铁压印盲文点，通过步进电机控制打印头和纸张的移动，并借助传感器检测纸张以提高可靠性。为便于操作，打印机还配备了液晶控制面板。该打印机运行于Marlin固件之上，同时基于Python的转换器将盲文Unicode转换为G代码命令，以实现精准打印。该原型机已由NISE教师进行测试，最新版本致力于让教师和学生都能简单便捷地进行盲文打印。这一由翻译系统和打印机两部分组成的解决方案，为制作高棉语盲文学习材料提供了经济实惠的端到端解决方案。这款低成本盲文打印机通过减少对昂贵进口设备的依赖，使学校和教育机构能够以更实惠的价格制作盲文文档，从而进一步提升了无障碍访问水平。翻译平台与打印机解决方案相结合，有助于消除信息获取和教育参与方面的关键障碍。

In addition, a low-cost Braille printer featuring a simple, maintainable, and scalable design was developed to facilitate deployment in resource-limited environments. The mechanical prototype design inspired by BrailleRap. The printer uses an electromagnet to emboss Braille dots, stepper motors to control the print head and paper movement, and sensors to detect paper and improve reliability. An LCD control panel was added to make the printer easier to operate. The printer runs on Marlin firmware, while a Python-based converter transforms Braille Unicode into G-code commands for precise printing. The prototype was tested with NISE teachers, and the latest version focuses on making Braille printing simple and convenient for both teachers and students. These two-parts translation system and printers provide an affordable end-to-end solution for producing Khmer Braille learning materials. The low-cost Braille printer further enhances accessibility by reducing reliance on expensive imported equipment and making Braille document production more affordable for schools and educational institutions. Together, the translation platform and printer solution help address critical barriers to information access and educational participation.



高棉语盲文机器翻译网页应用程序
Khmer Braille Machine Translation Web Application



盲文打印机原型的组成部分
Braille Printer Prototype Components

促进柬埔寨及东南亚地区的包容性数字接入，推动资源匮乏地区的语言创新

Empowering Inclusive Digital Access and Advancing Low-Resource Language Innovation for Cambodia and Southeast Asia

“高棉语盲文翻译”计划通过促进视障人士平等获取数字信息，同时解决高棉语作为一种资源匮乏语言所面临的技术挑战，从而创造了巨大的社会和经济价值。该计划将高棉语技术与经济实惠的盲文打印解决方案相结合，既能减少对昂贵进口无障碍技术的依赖，又能让学校、公共机构和社区更便捷地获得辅助解决方案。目前，该项目已为四个省份的四所特殊教育高中和20所融合教育高中提供支持，惠及1,000多名视障学生。通过将高棉语文本自动转换为盲文，该系统显著减少了制作盲文学习材料所需的时间、精力和成本。这使教师能够为视障学生提供更及时、更易获取且更具包容性的教育资源。此举可增强当地的技术能力，为本地研发创造机遇，并促进柬埔寨无障碍数字产品与服务的发展。从更广泛的角度来看，该倡议展示了对资源匮乏语言技术的投资如何既能促进数字包容，又能为创新、教育、技能发展以及未来的商业化创造机遇。通过与在开发资源匮乏语言技术方面面临类似挑战的东南亚国家开展合作，该倡议的影响力已超越柬埔寨。共享语言资源、研究专长、数据集和技术方法，有助于在整个地区开发包容性解决方案。归根结底，该倡议表明，满足服务不足的语言社区的需求既能产生社会影响，又能创造经济机遇，同时使柬埔寨成为东南亚包容性、本土驱动型数字创新的重要贡献者。该项目通过改善视障教育工作者和学习者获取教育材料的途径，展现了显著的社会影响。

The Khmer Braille Translation initiative creates significant social and economic value by promoting inclusive access to digital information for people with visual impairments while addressing the technological challenges faced by Khmer as a low-resource language. By combining Khmer language technology with an affordable Braille printing solution, the initiative can reduce dependence on costly imported accessibility technologies and make assistive solutions more accessible to schools, public institutions, and communities. Currently supports four special education high schools and 20 inclusive high schools across four provinces, benefiting more than 1,000 visual impaired students. By automating the conversion of Khmer text into Braille, the system significantly reduces the time, effort, and cost required to produce Braille learning materials. This enables teachers to provide more timely, accessible, and inclusive educational resources for students with visual impairments. This can strengthen local technological capacity, create opportunities for local research and development, and encourage the growth of accessible digital products and services in Cambodia. More broadly, the initiative demonstrates how investment in low-resource language technologies can contribute to digital inclusion while generating opportunities for innovation, education, skills development, and future commercialization. Its potential extends beyond Cambodia through collaboration with Southeast Asian countries that face similar challenges in developing technologies for under-resourced languages. Sharing linguistic resources, research expertise, datasets, and technology approaches can support the development of inclusive solutions across the region. Ultimately, the initiative illustrates how addressing the needs of underserved language communities can create both social impact and economic opportunities, while positioning Cambodia as a contributor to inclusive and locally driven digital innovation in Southeast Asia. The project has demonstrated significant social impact by improving access to educational materials for visually impaired educators and learners.



NISE开展的高棉语盲文翻译与打印机测试活动
Khmer Braille Translator and Printer Testing Activity at NISE

该项目在国际电信联盟（ITU）于中国上海举办的 2024 年世界人工智能大会上，荣获“AI for Good Innovate for Impact”活动颁发的“最佳无障碍奖”；并在泰国举办的 2025 年东盟数字大奖以及 2025 年亚洲智能创新大奖中，分别荣获“数字包容性”类别的金奖。总体而言，该项目为柬埔寨视障群体的包容性教育、数字无障碍及社会公平的进步做出了贡献，并支持了确保所有人享有平等学习机会的更广泛努力。

This project has been awarded internationally of the Best Accessibility Award in the AI for Good Innovate for Impact hosted by ITU at the 2024 World Artificial Intelligence Conference in Shanghai China, and the gold medal in Digital Inclusivity Category at the 2025 ASEAN Digital Awards in Thailand and Asia Smart Innovation Awards 2025. Overall, the project contributes to the advancement of inclusive education, digital accessibility, and social equity for visually impaired communities in Cambodia, supporting broader efforts to ensure equal learning opportunities for all.



▲ “最佳无障碍奖”——国际电信联盟（ITU）“AI for Good”会议，2024年7月，上海
“Best Accessibility Award” AI for Good Conference of ITU Shanghai, July 2024



▲ “数字包容性”东盟数字奖（泰国），2025年1月“Digital Inclusivity” ASEAN Digital Award Thailand, January 2025

通过数字研究基础设施重建支离破碎的书面遗产

Reconstructing fragmented written heritage through a digital research infrastructure



▲ 策展人和修复师在灯箱上研究纸莎草纸碎片
Curator and restorer study papyrus fragments on a light table

申报机构
Applying Institution

都灵埃及博物馆
Museo Egizio

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、意大利、丹麦、德国、法国等10个国家和地区
Covering 10 countries and regions including the United States, Italy, Denmark, Germany, France

埃及纸草学处于语言学、文物保护与数字人文的交叉领域。由于数千份手稿分散在世界各地的馆藏中，该领域亟需建立共享且互操作的数字基础设施。

Egyptian papyrology sits at the crossroads of philology, conservation, and digital humanities. With thousands of manuscripts fragmented across collections worldwide, the field urgently needs shared, interoperable digital infrastructure.

“都灵纸草在线平台”：为支离破碎的文化遗产打造一个全球数字家园

The Turin Papyrus Online Platform: Building a Global Digital Home for Fragmented Heritage

都灵埃及博物馆收藏了世界上规模最大的古埃及文献藏品之一，拥有跨越三千年的1,000余份手稿和30,000余块碎片。TPOP平台的建立旨在通过开放标准、持久标识符和关联开放数据来记录和分享这一文化遗产，将都灵与主要的国际数据库相连，让全球研究人员能够共同访问、标注和贡献内容，其远大目标是最终将世界各地文化机构所藏的纸莎草纸藏品相互关联起来。

The Museo Egizio in Turin holds one of the world's largest collections of ancient Egyptian written material with over 1,000 manuscripts and 30,000 fragments spanning three millennia. TPOP was built to document and share this heritage through open standards, persistent identifiers, and linked open data, connecting Turin to major international databases and letting researchers worldwide access, annotate, and contribute together, with an ambition to eventually link papyrus collections held in cultural institutions across the world.



▲ “金矿纸草”（P. Turin Cat. 1879++）
The so-called “Goldmine Papyrus” (P. Turin Cat. 1879++)

从孤立的碎片到共享的知识：一个以人为本、由人工智能辅助的生态系统

From Isolated Fragments to Shared Knowledge: A Human-Centred, AI-Assisted Ecosystem

TPOP的数据模型将内容分为三个层次：物理碎片（对象）、学者据此提出的重建单元（文献），以及从这些重建中得出的文本解读（证本），从而允许多种假说并存，而非强制采用单一版本。在完成保护、数字化和元数据处理工作后，协作环境使不同国家的学者能够将碎片进行虚拟比对，测试不同的拼接方案，并记录其推理过程。如今，机器学习技术能够从数千块碎片中标记出可能的符号匹配点和潜在拼接点。在专家验证之前，每项建议都仅作为一种假设存在，从而确保人类始终参与其中。

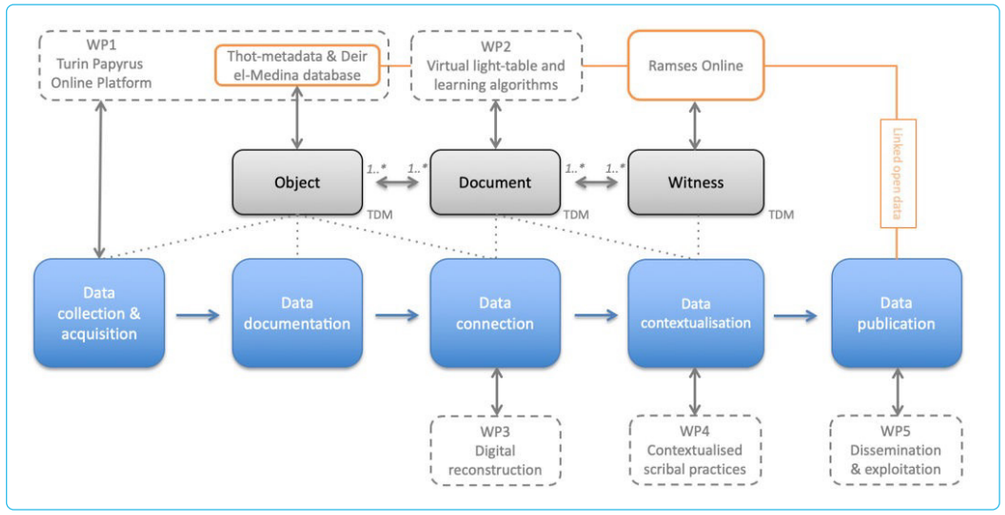
该项目启动之初，来自代尔·埃尔·梅迪纳的数千片纸莎草纸碎片被分别存放在埃及博物馆的文件夹中。其中许多碎片近两个世纪以来一直未被公布，且彼此之间缺乏关联。通过在“都灵纸莎草纸在线平台”（TPOP）上进行系统的保护、数字化处理和记录工作，研究人员得以发现这些碎片之间此前从未被认知的关联。其中一个特别引人注目的案例涉及拉美西斯九世统治时期一份关于鱼类交付的行政记录的纸莎草纸碎片。通过综合分析笔迹、纤维纹理、日期序列和文本排版等证据，研究团队证实，存放在不同文件夹中的碎片曾是同一份大型文书的组成部分。这些原本看似孤立的纸莎草碎片，突然间组成了完整的行政记录，为了解皇家陵园社区的经济生活提供了新的见解。这一案例展示了数字方法如何恢复已丢失的档案背景，并将支离破碎的藏品转化为具有重要意义的历史资料。

TPOP's data model separates three layers: physical fragments (object), the reconstructed units scholars propose from them (document), and the textual readings drawn from those reconstructions (witness), allowing multiple hypotheses to coexist rather than forcing one version. After conservation, digitisation, and metadata work, a collaborative environment let scholars in different countries virtually juxtapose fragments, test alternative joins, and document their reasoning. Machine learning now flags likely sign matches and possible joins across thousands of pieces. Every suggestion remains a hypothesis until an expert validates it, keeping humans firmly in the loop.

When the project began, thousands of papyrus fragments from Deir el-Medina were stored separately in folders in the Museo Egizio. Many had remained unpublished and disconnected for nearly two centuries. Through systematic conservation, digitisation, and documentation in the Turin Papyrus Online Platform (TPOP), researchers were able to identify relationships between fragments that had never before been recognised. One particularly striking case involved fragments belonging to an administrative record of fish deliveries from the reign of Ramesses IX. By combining evidence from handwriting, fibre patterns, date sequences, and text layout, the team demonstrated that fragments stored in different folders once formed parts of the same larger document. What had appeared to be isolated scraps of papyrus suddenly became a coherent administrative record, offering new insights into the economic life of the royal necropolis community. This example demonstrated how digital methods can recover lost archival contexts and transform fragmented collections into meaningful historical sources.



A record of fish deliveries. P. Turin Cat. 1933 + Provv. 6259 + CP041, and CP057 (verso).



▲ TPOP 工作流程和工作包 / TPOP workflow and work packages

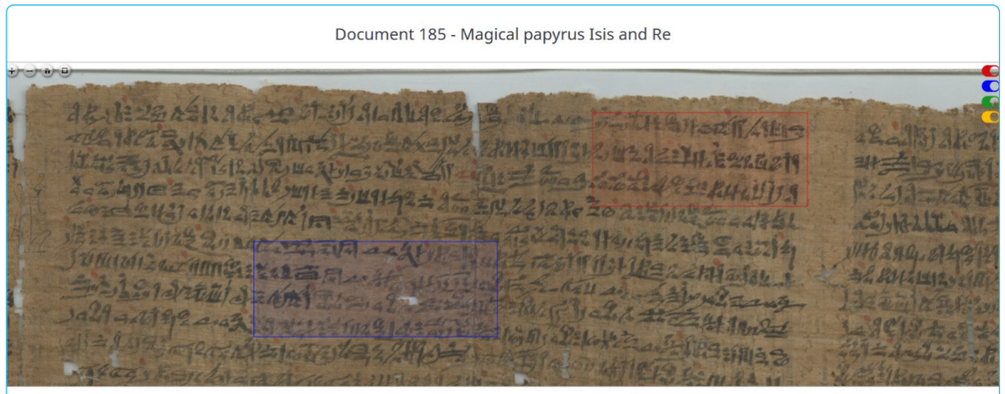
向世界展现“古之声”：包容性获取，共享效益

Opening Ancient Voices to the World: Inclusive Access, Shared Benefit

近两个世纪以来，埃及博物馆（Museo Egizio）收藏的数千片纸莎草纸碎片，仅限于少数能够亲赴都灵直接研究该馆藏的专家查阅。通过“都灵纸莎草纸在线平台”（TPOP），该项目将这些长期不为人知的资料转化为数字研究资源。这些碎片经过保护、数字化、记录，并补充了详细的元数据，随后通过一个专为专家和更广泛受众设计的在线平台向公众开放。因此，世界各地的学者、学生和文化遗产从业者现在可以查阅和探索这些过去难以获取的资料。通过采用开放标准和关联开放数据原则，该平台促进了国际合作，并提供了一个可复用的模型，供其他机构根据自身馆藏进行调整。这一最初作为地方性保护工作的项目，由此演变为一项共享的数字资源，将古埃及文化遗产的影响力延伸到了博物馆的围墙之外。

For nearly two centuries, thousands of papyrus fragments in the Museo Egizio remained accessible only to a small number of specialists who could work directly with the collection in Turin. Through the Turin Papyrus Online Platform (TPOP), the project transformed these largely hidden materials into a digital research resource. Fragments were conserved, digitized, documented, and enriched with detailed metadata before being made available through an online infrastructure designed for both specialists and wider audiences.

As a result, scholars, students, and cultural heritage professionals around the world can now access and explore materials that were previously difficult to consult. By adopting open standards and linked open data principles, the platform enables international collaboration and provides a reusable model that other institutions can adapt to their own collections. What began as a local preservation effort has thus evolved into a shared digital resource, extending the reach of ancient Egyptian cultural heritage far beyond the museum walls.



▲ 摘自 TPOP 中的图像导航器
Excerpt from the image navigator in TPOP

TPOP荣获2020年欧洲遗产奖（Europa Nostra Award）“研究”类奖项，并在2018年欧洲年度博物馆奖（EMYA）评选中获得“可持续发展”特别嘉奖。

TPOP received the European Heritage Award / Europa Nostra Award 2020 in the Research category, and a Special Commendation for Sustainability at the European Museum of the Year Award (EMYA) 2018.

YOUTH X UNI全球青年数字社区

YOUTH X UNI Global Youth Digital Community



▲ 图片展示新加坡青年社区围绕YOUTH AI OS建立的AI合作与青年引入网络，连接多国机构、区域资源、AI能力与青年场景。
The image shows Singapore Youth Community's global AI cooperation and youth-attraction network around YOUTH AI OS, connecting international institutions, regional resources, AI capabilities and youth-development scenarios.

申报机构
Applying Institution

新加坡青年社区
Singapore Youth Community

其他参与机构
Other Participating Organizations

Youth AI OS、YOUTH UNI、YOUTH X UNI、浙江中数引擎科技有限公司（中国区合作与运营主体），以及持续拓展中的全球青年组织、城市、创新中心与社区伙伴。

Youth AI OS, YOUTH UNI, YOUTH X UNI, Zhejiang Zhongshu Yinqing Keji Youxian Gongsi as the China cooperation and operations partner, and an expanding network of youth organizations, cities, innovation centers and community partners.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、新加坡、美国、英国、阿联酋等36个国家和地区
Covering 36 countries and regions including China, Singapore, the United States, the United Kingdom, and the United Arab Emirates

在全球青年跨区域流动、数字技能差距与城市社区转型并存的背景下，YOUTH X UNI以AI和真实社区网络连接青年、城市与机会，并通过www.youthx.uno开放合作入口。

Against the backdrop of cross-border youth mobility, digital skills gaps, and urban-community transformation, YOUTH X UNI connects young people, cities, and opportunities through AI and real community networks, with www.youthx.uno serving as an open cooperation entry point.

从线上连接到真实社区，构建全球青年数字协作入口
From online connection to real communities: building a digital gateway for global youth collaboration

YOUTH X UNI由新加坡青年社区发起，面向全球青年、城市、创新机构和社区空间，提供以AI为核心的机会发现与协作连接平台。项目把青年组织、城市节点、大学资源、创新空间、数字游民社区、AI工具和本地服务连接起来，帮助青年从“看到机会”走向“理解机会、匹配路径、进入社区并形成合作”。目前，项目已围绕36个国家和地区、47个合作节点和516个以上空间/社区建立合作框架，并与芬兰、爱尔兰、斯洛伐克、英国、意大利、加拿大、新西兰、西班牙、欧盟、中东机构对接。

Initiated by Singapore Youth Community, YOUTH X UNI serves young people, cities, innovation institutions and community spaces worldwide. It links youth organizations, city nodes, university resources, innovation spaces, digital-nomad communities, AI tools and local services, helping young people move from seeing opportunities to understanding them, matching pathways, entering communities and forming cooperation. The project has built a framework across 36 countries and regions, 47 partner nodes and more than 516 spaces or communities, and is engaging institutions in Finland, Ireland, Slovakia, the UK, Italy, Canada, New Zealand, Spain, the EU, and the Middle East.

以AI匹配和线下空间为桥梁，让青年跨越地域参与共创
Using AI matching and physical spaces as bridges for cross-border youth co-creation

项目的核心创新在于把数字平台和线下社区结合起来。Youth AI OS承担智能入口功能，接入多类AI模型和工具，支持青年提交需求、理解城市和机会、匹配合作伙伴、发现项目路径并获得资源建议；YOUTH UNI偏重机会发现、城市匹配和路径规划；YOUTH X UNI把数字身份和机会匹配带入真实空间，连接共居、共创、共享办公、青年社区、本地活动和跨文化交流。通过“AI匹配+真实空间+伙伴协作”，青年可进入城市、社区和项目，参与AI应用、区域发展、文化传播与创业合作。

The core innovation is the combination of a digital platform with offline communities. Youth AI OS functions as the intelligent entry point, integrating multiple AI models and tools to help young people submit needs, understand cities and opportunities, match partners, discover project pathways and receive resource recommendations. YOUTH UNI focuses on opportunity discovery, city matching and future-pathway planning. YOUTH X UNI brings digital identity and opportunity matching into real spaces, connecting co-living, co-creation, co-working, youth communities, local events and cross-cultural exchange. Through an AI matching plus real spaces plus partner collaboration model, young people can enter specific cities, communities and projects and participate in AI applications, regional development, cultural communication, entrepreneurship and public-issue co-creation.

让数字机会更普惠，让城市与青年双向受益

Making digital opportunities more inclusive and creating mutual value for cities and youth

YOUTH X UNI的普惠价值体现在三个层面。第一，它降低青年获取国际机会的门槛，通过AI辅助理解、匹配和路径规划，使不同国家、专业和背景的青年更容易发现学习、创业、就业、志愿服务和社区参与机会。第二，它帮助城市和区域以低成本方式接触全球青年人才，尤其适用于探索AI青年引入、数字游民、区域创新和社区活化的地区。第三，它推动跨区域青年合作从线上信息走向真实项目。例如，中东以阿拉伯青年中心等资源为连接场景，探索把青年合作、创新生态、数字能力和区域连接结合起来。

YOUTH X UNI creates inclusive value in three ways. First, it lowers barriers to international opportunities. With AI-assisted understanding, matching and pathway planning, young people from different countries, disciplines and backgrounds can find suitable learning, entrepreneurship, employment, volunteering and community-participation opportunities. Second, it helps cities and regions reach global youth talent at low cost, especially places exploring AI-enabled youth attraction, digital nomads, regional innovation and community activation. Third, it turns cross-regional youth cooperation from online information into real projects. In the Middle East, cooperation resources such as the Arab Youth Center provide a scenario for linking youth collaboration, innovation ecosystems, digital capabilities and regional connectivity.



▲ 中东YOUTH X合作场景展示了项目与阿拉伯青年中心等区域资源连接青年合作、AI应用和创新生态的方向。
The Middle East YOUTH X cooperation scenario shows how the project connects youth collaboration, AI application and innovation ecosystems with regional resources such as the Arab Youth Center.

以开放合作机制持续拓展网络空间命运共同体实践

Expanding shared-future practices in cyberspace through open collaboration

项目持续面向全球伙伴开放合作，重点拓展AI青年引入、区域人才匹配、创业生态、数字游民与国际传播、跨国项目共创等场景。YOUTH AI OS（Youth X UNI）系统已入选英国皇家工程院Leaders in Innovation Fellowships创新项目，并且受英国皇家工程院的邀请和资助作为唯一的中国代表前往土耳其参加由20个国家代表共同参与的“全球领导力论坛”，显示其在AI青年发展和国际合作方向的潜力。依托新加坡青年社区网络、联合国青年创新经验以及中国多地数字治理和社区实践，YOUTH X UNI正在探索可复制的青年数字社区模式。

The project remains open to global partners and continues to expand use cases in AI-enabled youth attraction, regional talent matching, entrepreneurship ecosystems, digital-nomads and international communication, and cross-border project co-creation. YOUTH AI OS has been selected as an innovation project under the Royal Academy of Engineering Leaders in Innovation Fellowships, Invited and funded by the Royal Academy of Engineering, I participated in the Global Leadership Forum in Turkey as the only Chinese representative with representatives from 20 nations.

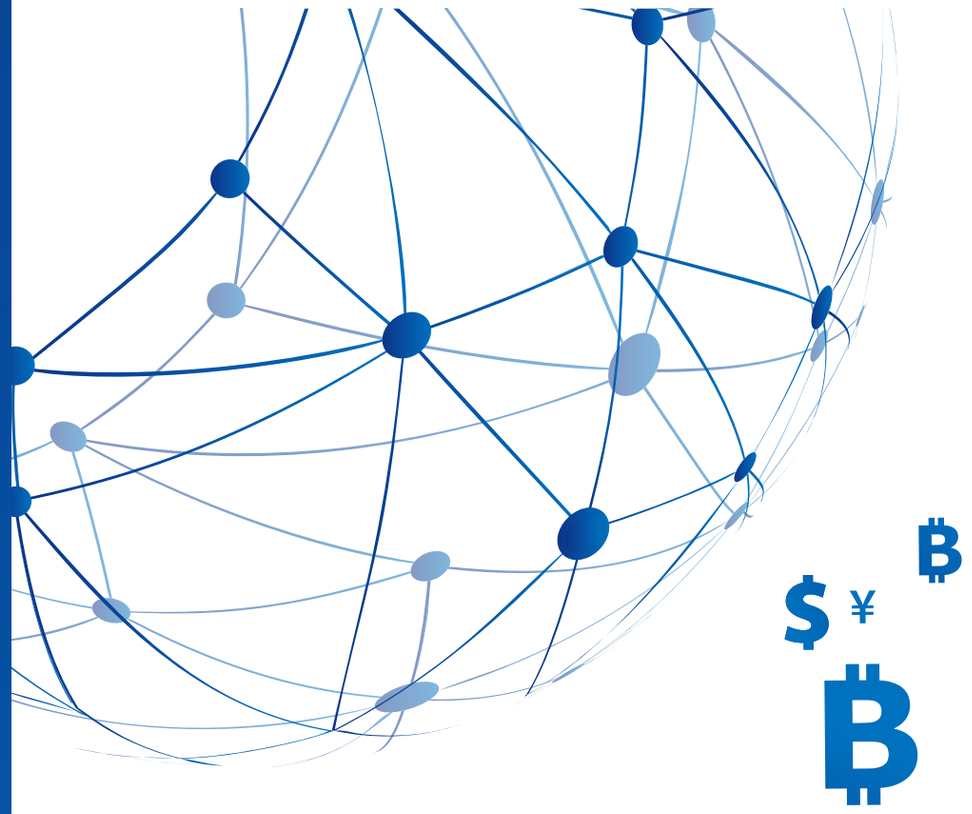
reflecting its potential in AI-enabled youth development and international cooperation. Drawing on Singapore Youth Community's network, youth cooperation resources related to UN youth innovation experience, and digital governance and community-operation practices in China, YOUTH X UNI is exploring a replicable youth digital community model.

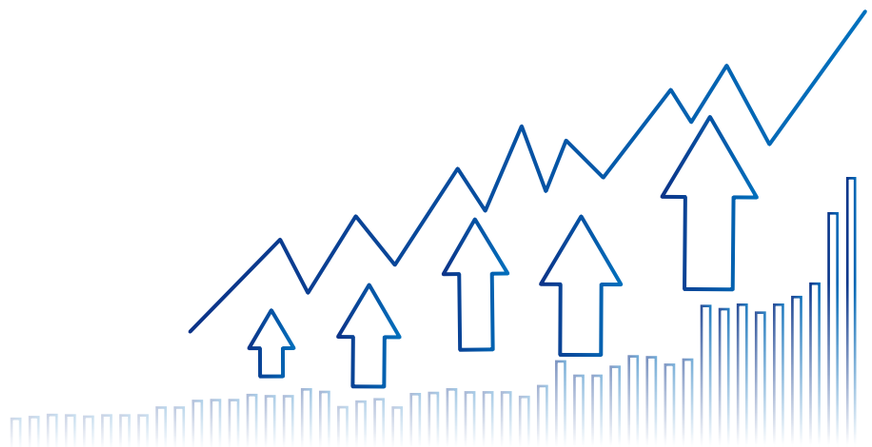
03

数字经济创新发展
Innovative Development of Digital Economy

推动数字经济创新发展，促进共同繁荣

Promoting Innovative Development of the Digital Economy
for Common Prosperity





精品案例

智联寰壤·康通全球——沃达丰赋能医疗跨境全域数字化互联

Connecting Healthcare Beyond Borders — Intelligent Global Connect, Healthcare Without Boundaries—Vodafone IoT Enables global digitalization for Medical industry



▲ 沃达丰物联网，以可靠连接支持医疗设备全球部署
Vodafone IoT Supports Global Medical Device Deployment Through Reliable Connectivity

申报机构
Applying Institution

沃达丰物联网
Vodafone IoT

其他参与机构
Other Participating Organizations

江苏鱼跃医疗设备股份有限公司
Jiangsu Yuyue Medical Equipment & Supply Co.,Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、英国、德国、美国等180多个国家和地区
Covering more than 180 countries and regions including China, the United Kingdom, Germany, and the United States

随着医疗健康产业数字化进程加快，医疗设备和相关服务的跨境运营需求不断增长。不同市场的网络、监管与运营环境存在差异，让全球部署更趋复杂。沃达丰物联网以全球托管连接服务，支持医疗设备企业顺畅构建面向全球运营的连接服务体系，实现规模化拓展。

As healthcare becomes more digital, medical devices and services increasingly need to operate across borders. Yet differences in networks, regulation and operating environments can make global deployment complex. Vodafone IoT provides managed global connectivity that helps medical device companies deploy, manage and scale connected services across markets.

全球连接，延展医疗服务边界

Global Connectivity, Extending the Reach of Healthcare Services

作为全球领先的物联网服务提供商，沃达丰物联网正以全球连接网络、专业SIM技术和托管物联网连接平台，为医疗设备、家用患者监测及相关数字医疗场景提供安全、可扩展的连接基础，支持企业开展跨市场部署与服务运营。

沃达丰物联网自2009年推出托管物联网连接服务，现已支持超过2.4亿个物联网连接，业务覆盖180多个国家和地区，可接入760多个网络。全球覆盖、本地接入与统一管理能力，使企业能够在不同市场保持更连贯的设备连接与运营模式。

以全球领先的家庭医疗监测及医疗设备企业鱼跃为例，鱼跃与沃达丰物联网合作，为亚洲、欧洲和美洲多个区域的数千台家用患者监测及医疗设备建立全球连接基础，支持设备跨市场部署与管理。

As a leading global IoT service provider, Vodafone IoT combines global connectivity networks, specialist SIM technology and its Managed IoT Connectivity Platform to provide a secure, scalable connectivity foundation for medical devices, homecare patient monitoring and related digital healthcare applications. This supports enterprises in deploying devices and operating services across markets.

Vodafone IoT launched its managed IoT connectivity service in 2009. It now supports more than 240 million IoT connections across more than 180 countries and regions, with access to over 760 networks. Its combination of global coverage, local access and unified management helps enterprises maintain more consistent device connectivity and operating models across markets.

Yuwell, a global leader in medical monitoring devices, uses Vodafone IoT connectivity to support thousands of homecare monitoring and medical devices across Asia, Europe and the Americas. This helps Yuwell deploy and manage connected devices more consistently as it expands into new markets.



▲ 沃达丰物联网依托全球网络与托管连接能力，支持医疗设备在不同市场持续、安全地接入网络。
Through global networks and managed connectivity capabilities, Vodafone IoT supports medical devices in staying securely and reliably connected across markets.

贯通全球网络，简化医疗设备跨境部署

Simplifying medical device deployment across markets

医疗设备进入多个市场时，需要应对不同的网络差异与漫游限制。沃达丰物联网围绕“统一部署、灵活适配、集中管理”构建连接服务体系。借助Global SIM，企业可在多个市场采用一致的连接方案，减少分别配置本地SIM和管理流程的复杂性；在永久漫游受限的市场，Global SIM+支持设备接入当地网络，帮助企业灵活适应不同市场的合规要求。

沃达丰托管物联网连接平台将不同市场的连接集中至同一界面，支持查看SIM状态和连接情况，开展监测、问题排查和生命周期管理。全球网络资源、当地接入能力和集中运营管理在同一体系内协同。

通过整合全球覆盖能力与本地接入能力，沃达丰物联网帮助企业以更统一的连接模式推进跨市场规模化部署，降低重复建设和分散管理带来的复杂性。

Medical device companies expanding into multiple markets must navigate different network environments and roaming requirements. Vodafone IoT simplifies this through a model built around consistent deployment, local flexibility and centralized management.

Global SIM enables organizations to use a consistent connectivity approach across markets, reducing the need to source and manage separate local SIMs. Where permanent roaming is restricted, Global SIM+ enables devices to connect through a local network profile, helping organizations adapt to market requirements.

Vodafone's Managed IoT Connectivity Platform brings connections from different markets into one interface. It supports the monitoring of SIM status and connectivity, troubleshooting and lifecycle management. Global network resources, local access and centralized operations can therefore work together within one framework.

By combining global reach, local network access and centralized control, Vodafone IoT helps businesses scale connected services without rebuilding their connectivity model market by market.



◀ 实现更好的数字化医疗
Achieving better digital healthcare

延展医疗服务场景，提升数字服务可及性

Extending access to connected healthcare services

医疗服务的数字化，需要一条贯穿设备、系统与服务的连接基础。沃达丰物联网以全球托管连接能力，支持医疗健康企业将分布在不同地区的设备纳入统一服务体系，使远程监测、维护支持与设备管理能够随业务拓展持续开展。

这一能力为企业带来的，是可复制的全球服务能力：在不同市场保持一致的连接与管理方式，降低跨区域运营复杂性，使产品和服务能够更顺畅地进入新的地区和应用场景。医疗设备由此不再只是单一地点的硬件资产，也成为企业长期服务体系的一部分。

当医疗服务进一步延展至家庭护理等场景，稳定连接可为互联医疗设备和远程监测提供支撑，帮助需要长期照护的人群获得持续服务。沃达丰物联网提供可靠的连接基础，帮助医疗机构为家庭及更多场景提供数字健康服务，并持续掌握设备连接状态，保障服务连续性。

Digital healthcare needs a connectivity foundation that links devices, systems and services. Through its managed global connectivity capabilities, Vodafone IoT supports healthcare enterprises in bringing devices distributed across locations into a unified service model, allowing remote monitoring, maintenance support and device management to continue as their operations expand.

This creates a replicable global service capability for enterprises. By maintaining consistent connectivity and management across markets, organisations can reduce the complexity of cross-regional operations and bring products and services more smoothly into new regions and applications. Medical devices can therefore become part of a long-term service model rather than remain isolated hardware assets at a single location.

As more healthcare services move into the home, reliable connectivity can support remote monitoring and connected devices for people who need ongoing care. Vodafone IoT provides the connectivity foundation that helps healthcare organisations extend digital services across more locations while maintaining visibility and continuity.



◀ 可靠、安全的全球连接，为医疗设备远程监测、维护支持与跨区域服务提供持续的数字基础。
Secure, reliable global connectivity supports remote monitoring, device management and continuity of connected healthcare services across markets.

精品案例

中兴通讯以全球化能力赋能中资互联网云跨境，共建新兴市场数字基座

ZTE Empowers Chinese Internet Companies' Cloud Going-Global with Global Capabilities, Co-building Digital Infrastructure in Emerging Markets



▲ 数联世界，智启未来
To create an intelligent future with digital innovation

申报机构
Applying Institution

中兴通讯股份有限公司
ZTE Corporation

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

阿尔及利亚、哥伦比亚、马来西亚、墨西哥、尼日利亚、印度尼西亚
Algeria, Colombia, Malaysia, Mexico, Nigeria, and Indonesia

全球数字浪潮下，中资互联网企业全球化加速，但面临准入、合规、交付壁垒。中兴通讯依托30余年全球交付网络与本地化经验，以“全球化能力 + 本地化交付”模式，在三大洲六国助力中资企业商业成功，助推当地数字经济建设。

Amid the global digital wave, Chinese internet firms accelerate global expansion but face barriers in market entry, compliance and delivery. With 30+ years of global delivery networks and local expertise, ZTE applies the "global capability + local delivery" model to take China’ s cloud ecosystem abroad, supporting Chinese firms' commercial success in 6 countries across 3 continents and boosting local digital economies.

横跨三大洲六国：以全球交付网络助力中资企业本地化扎根生长

Across Six Countries on Three Continents: Empowering Chinese enterprises to establish local roots and thrive through a global delivery network

中兴通讯凭借深耕全球30余年的交付网络与本地化经验，积极响应多家头部中资互联网企业在新兴市场的云基建布局需求。在墨西哥，为出行互联网企业搭建并提供高性能算力服务，支撑拉美地区出行与金融支付业务；在马来西亚，为视频互联网公司提供核心设备，助其在无本地根基的市场实现低成本、高可靠的基建落地；在印尼，以总包身份携手多家中资企业，打造印尼本土混合云；在阿尔及利亚，交付安全可控的本地公有云，集成云服务与AI应用，建立数据本地存储与异地灾备体系；在尼日利亚、墨西哥搭建本土数字支付平台；在哥伦比亚实现中国私有云替代。项目覆盖东南亚、非洲、拉美三大洲，充分验证了中兴赋能中资跨境模式的可复制性与生态聚合力。

Backed by over 30 years of global delivery networks and localized operational expertise, ZTE Corporation proactively responds to the demand for cloud infrastructure deployment from leading Chinese internet enterprises in emerging markets. In Mexico, ZTE built the high-performance computing services for mobility internet companies, supporting mobility and financial payment services across Latin America. In Malaysia, ZTE provided core equipment for a video internet company, enabling low-cost and highly reliable infrastructure deployment in a market where the company had no existing local footprint. In Indonesia, acting as the general contractor, ZTE copartnered with multiple Chinese enterprises to build the country's local hybrid cloud. In Algeria, ZTE delivered a secure and controllable local public cloud, integrating cloud services and AI applications and establishing a system for local data storage and off-site disaster recovery. ZTE also deployed local digital payment platforms in Nigeria and Mexico and realized private cloud solutions in Colombia. Covering Southeast Asia, Africa and Latin America, the projects fully validate the replicability and ecosystem synergy of ZTE’s model for empowering Chinese enterprises’ cross-border expansion.



中兴通讯推出面向未来的解决方案
ZTE Delivers Future-Ready Solutions

“算力底座+云平台+顶层应用”一体化模式，破解中资全球化痛点

Integrated Model of "Computing Base + Cloud Platform + Top-Level Applications": Solving Pain Points of Chinese Enterprises' Cross-Border Expansion

中兴创新构建“算力底座+云平台+顶层应用”的一体化跨境模式。

• 算力底座层，提供智算服务器、核心交换机等全栈硬件：在墨西哥为中资互联网部署高可靠服务器集群。

• 云平台层，因地制宜交付差异化方案：印尼项目打破原有供应商绑定，阿尔及利亚项目建立数据本地化与异地灾备体系，哥伦比亚实现全栈云技术替代原有产品。

• 顶层应用层，集成多元业务模块：阿尔及利亚上线AI智能服务，非洲与拉美推出便民数字支付平台。

该模式依托中兴30年全球化交付体系：当地设子公司或代表处，具备自主清关能力与DDP交付资质；拥有百余家本地认证分包商、三大区域仓库及完备物流体系；提供西、英、中三语SLA技术支持与硬件维护服务，帮助中资企业跨越商务、财税、合规、物流等门槛，实现从产品全球化到能力全球化的升级。

ZTE has innovatively developed an integrated cross-border model featuring "computing base, cloud platform and top-level applications".

• Computing base layer: delivering a full stack of hardware, including intelligent computing servers and core switches. ZTE delivered the international project of intelligent computing products in Malaysia and deployed high-reliability server clusters for internet enterprises in Mexico.

• Cloud platform layer: delivering differentiated solutions tailored to local conditions. The Indonesia project broke the vendor lock-in of the original suppliers; the Algeria project established a system for data localization and off-site disaster recovery; the Colombia project achieved full-stack cloud technology.

• Top-level application layer: integrating diverse business modules. AI intelligent services were launched in Algeria, and user-friendly digital payment platforms were rolled out in Africa and Latin America.

This model is underpinned by ZTE's 30-year global delivery system: local subsidiaries or representative offices with independent customs clearance capabilities and DDP delivery qualifications; over 100 locally certified subcontractors, three regional warehouses, and a complete logistics system; and trilingual SLA technical support and hardware maintenance services in Spanish, English and Chinese. ZTE helps Chinese enterprises overcome barriers in business operations, finance and taxation, compliance and logistics -- realizing the upgrade from product export to capability export.



▲ 中兴通讯800V HVDC解决方案
ZTE's 800V HVDC Solution

赋能中资商业成功，惠及千万终端用户，打造可复制全球范式

Empowering Commercial Success of Chinese Enterprises, Benefiting Millions of End Users, and Building a Replicable Global Paradigm

系列项目已服务千万终端用户，兼具商业价值与普惠意义。对中资企业，中兴助力出行互联网企业在拉美实现首个自有数据中心落地，支撑其业务规模增长与金融牌照申请；助力视频互联网公司以马来西亚为支点实现国际业务盈利；助力行业伙伴进入新兴市场实现商业闭环；助力视频互联网企业在非洲优化用户体验、拓展商业化空间。对当地社会，印尼公有云为中小企业提供低成本上云路径，激活本土创新生态；非洲与拉美数字支付平台使数百万民众首次接入正规金融服务，带动小微经济与妇女创业。项目累计培养数千名本地数字化人才，显著提升当地数字技能、就业与生产建设能力。该模式已在三大洲落地验证，兼具商业可持续性与普惠包容性，为全球南方国家数字经济发展与共同繁荣提供了可借鉴、可推广的中国范式。

The series of projects has served tens of millions of end users, combining commercial value and inclusive benefits. For Chinese enterprises, ZTE helped a mobility internet enterprise launch its first self-owned data center in Latin America, supporting its business scale growth and financial license application; helped a video internet company achieve profitability in international business with Malaysia as the strategic pivot; helped partners enter emerging markets and establish a complete business loop; and helped video internet companies optimize user experience and expand commercialization space in Africa.

For local communities, Indonesia's public cloud provides SMEs with a low-cost path to cloud adoption, activating the local innovation ecosystem; digital payment platforms in Africa and Latin America have given millions of people access to formal financial services for the first time, boosting micro and small economies and women's entrepreneurship. The projects have trained thousands of local digital talents, significantly improving local digital skills, employment and industrial development capacity. Validated through implementation across three continents, this model combines commercial sustainability and inclusive development -- providing a referable and scalable Chinese paradigm for the digital economy development and shared prosperity of Global South countries.



▲ 中兴通讯赋能人工智能时代
ZTE Powering the AI Era

精品案例

Arm神经网络技术：全球首创基于Arm移动GPU的AI加速器，为全球联网人群带来端侧AI图形新体验

Arm Neural Technology–the industry first Arm GPU-based AI accelerator, delivering a new on-device AI visual experience for the globally connected population



▲ Arm 神经网络技术重新定义移动端 AI 图形体验
Neural Technology Redefines AI Graphics on Mobile

申报机构
Applying Institution

Arm 公司
Arm Limited

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

覆盖中国、英国、德国、法国、印度、马来西亚、阿联酋、卡塔尔等 60 多个国家和地区

Covering more than 60 countries and regions including China, the United Kingdom, Germany, France, India, Malaysia, the United Arab Emirates, and Qatar

秉持“以技术推动社会福祉、AI 惠及全民”的理念，Arm依托覆盖芯片、终端、开发平台及应用开发的全球移动生态体系，与小米、OPPO、vivo、腾讯游戏、网易、Unity中国等合作伙伴携手，加速AI技术的规模化应用与普及。

通过赋能全球数十亿智能手机用户及数百万移动应用开发者，Arm推动AI驱动的移动体验覆盖100多个国家和地区，让先进AI图形与智能计算能力被更多市场、更多行业和更多人群共享，为数字化社会创造更广泛价值。

Driven by a commitment to advancing social wellbeing through technology and ensuring that the benefits of AI are shared broadly, Arm leverages its global mobile ecosystem spanning silicon, devices, development platforms, and application development. Together with partners such as Xiaomi, OPPO, vivo, Tencent Games, NetEase, and Unity China, Arm is accelerating the large-scale deployment and accessibility of AI technologies.

By empowering billions of smartphone users and millions of mobile application developers worldwide, Arm is helping extend AI-powered mobile experiences to more than 100 countries and regions. Through broad ecosystem collaboration, Arm is making advanced AI graphics and intelligent computing capabilities accessible to more markets, industries, and communities, creating wider value for an increasingly digital society.

面对端侧AI普及的紧迫需求，Arm携手全球生态伙伴推动AI与图形技术深度融合，让先进智能能力惠及更多设备和用户，促进创新成果共享与产业协同创新，共建开放包容、普惠共享的智能化未来。

To address the urgent need for widespread on-device AI adoption, Arm is working closely with partners across the global ecosystem to advance the convergence of AI and graphics technologies. By enabling advanced intelligence to reach more devices and users, Arm is accelerating the democratization of innovation and ecosystem-wide collaboration, helping build an open, inclusive, and widely accessible intelligent future.

携手全球产业伙伴，Arm神经网络技术构建AI原生图形创新生态

Arm Neural Technology Builds an AI-Native Graphics Innovation Ecosystem with Global Industry Partners

Arm神经网络技术搭载于最新发布的 Arm Mali G2-Ultra NX，通过在GPU中集成专用的原生AI加速能力，实现AI计算与图形处理深度融合，为端侧设备带来更高效、更智能的视觉体验。作为全球领先的移动GPU技术提供商，Arm正将AI原生图形能力引入数十亿GPU芯片。截至目前，Arm Mali GPU累计出货量已超过140亿颗，这一庞大的规模为AI原生图形能力的大规模普及奠定基础。

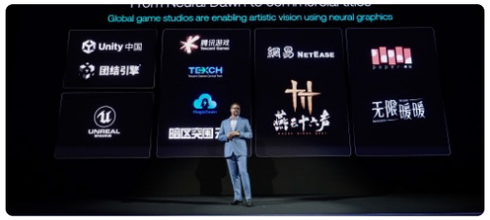
目前，该技术已应用于小米、OPPO、vivo等合作伙伴新品，并集成至 Unity中国、腾讯游戏 Magic Dawn及网易等开发平台与内容产品，覆盖全球多个国家和地区。依托开放合作的全球生态体系，Arm携手产业链伙伴推动端侧AI规模化普及，促进技术成果共享与协同创新，让更多用户受益于智能技术发展，共同构建开放、包容、普惠的数字未来。

Arm Neural Technology powers the newly introduced Arm Mali-G2 Ultra NX, integrating dedicated native AI accelerator directly into the GPU to seamlessly combine AI computing with graphics processing. This enables more efficient and intelligent visual experiences on edge devices. As a global leader in mobile GPU technology, Arm is extending AI-native graphics capabilities to billions of GPU chips. With cumulative Arm Mali GPU shipments surpassing 14 billion units, Arm has established a strong foundation for bringing AI-native graphics innovations to users at scale worldwide.

Arm Neural Technology has been widely adopted in new products from partners including Xiaomi, OPPO, and vivo, and integrated into development platforms such as Unity China and Tencent Games’ Magic Dawn, as well as NetEase’s digital content offerings, reaching users across multiple countries and regions worldwide. Leveraging its open and collaborative global ecosystem, Arm works with industry partners to accelerate the widespread adoption of on-device AI, foster innovation sharing and cross-industry collaboration, and expand access to advanced intelligent technologies, contributing to a more open, inclusive, and digitally empowered future.



▲ Arm Mali GPU累计出货量已超过140亿颗，为原生AI图形能力的大规模普及奠定基础。
To date, cumulative shipments of Arm Mali GPUs have surpassed 14 billion units, laying the groundwork for the widespread adoption of AI-native graphics technologies worldwide.



▲ Arm携手全球产业链伙伴推动端侧AI规模化普及。
Together with partners across the global technology ecosystem, Arm is accelerating the widespread deployment of on-device AI.

以神经网络技术赋能移动创新，让桌面级视觉体验惠及更多用户

Advancing Mobile Innovation Through AI-Native Graphics, Expanding Access to Desktop-Class Visual Experiences

Arm神经网络技术通过将AI能力深度融入GPU图形处理流程，为端侧设备视觉体验升级开辟了全新路径。在既定功耗和散热条件下，该技术充分发挥AI计算优势，可显著提升图形渲染效率，为手游等复杂移动应用减少多达50%的GPU工作负载，使移动设备获得接近桌面级的视觉体验。

在技术实现上，Arm神经网络技术集成神经超级采样（NSS）、神经帧率提升（NFRU）及神经超级采样与降噪（NSSD）等创新能力。其中，NSS可基于低分辨率画面重建高质量图像，NFRU通过生成中间帧提升画面流畅度，NSSD则结合超分辨率与降噪技术，在复杂光线追踪场景中进一步提升画质表现。通过AI计算与图形处理的深度融合，该技术为端侧AI应用创新提供了新的技术范式。

Arm Neural Technology opens a new path for enhancing visual experiences on devices by deeply integrating AI capabilities into the GPU processing pipeline. Within existing power and thermal constraints, the technology harnesses the strengths of AI computing to significantly improve graphics rendering efficiency, reducing GPU workloads for demanding mobile applications by up to 50% while delivering visual experiences approaching desktop-class quality.

At the core of the technology are a set of innovative capabilities, including Neural Super Sampling (NSS), Neural Frame Rate Upscaling (NFRU), and Neural Super Sampling and Denoising (NSSD). NSS reconstructs high-quality images from lower-resolution inputs, while NFRU improves visual smoothness by generating intermediate frames. NSSD combines super-resolution and denoising techniques to further enhance image quality in complex ray-traced scenes. By bringing together AI computing and graphics processing, Arm Neural Technology represents a new paradigm for innovation in on-device AI applications.



▲ Arm神经网络技术融合NSS、NFRU和NSSD等创新能力，实现AI与图形处理深度融合。
Arm Neural Technology integrates innovative capabilities such as NSS, NFRU, and NSSD, enabling the deep convergence of AI computing and graphics processing.



▲ Arm神经网络技术利用AI增强图形渲染，使移动设备获得媲美桌面级的视觉体验。
Arm Neural Technology enhances graphics rendering through AI, bringing near desktop-class visual experiences to mobile devices.

从设备创新到场景赋能，Arm神经网络技术助力AI普惠落地

From Device Innovation to Real-World Applications: Arm Neural Technology Brings AI to More People

Arm神经网络技术正推动AI从技术创新走向普惠应用，让更多用户共享智能化发展成果。

• 设备层面：降低门槛，提升数字可及性

Arm神经网络技术将高质量AI与图形处理能力带入移动终端，并逐步从旗舰产品向更广泛价位段普及，让更多用户能够以更低门槛享受先进智能体验，推动数字技术成果惠及更广泛人群。

• 应用层面：拓展场景，创造社会价值

Arm神经网络技术第一阶段已率先应用于游戏视觉领域，并正携手 Unity 中国等生态伙伴，加速向智能座舱、工业视觉等场景拓展。随着相关应用落地，可进一步提升交通安全水平、生产运营效率和数字化服务能力，推动 AI 技术在产业和社会领域的广泛应用，让智能技术更好地服务经济发展和社会治理。

Arm Neural Technology is helping transform AI from a technological innovation into broad societal value by bringing AI to more devices and real-world applications.

• Device Accessibility: By bringing desktop-class AI graphics experiences to mobile devices and extending advanced capabilities beyond flagship products, the technology is helping make high-quality AI experiences more affordable and accessible.

• Expanding Application Scenarios: Initially adopted in visual applications, Arm Neural Technology is now expanding into areas such as intelligent vehicles and industrial vision through collaboration with ecosystem partners including Unity China. By enabling broader AI adoption across industries, the technology has the potential to enhance safety, improve operational efficiency, and strengthen digital services, helping intelligent technologies deliver greater economic and societal benefits.



◀ Arm 神经网络技术将高质量 AI 与图形处理能力带入移动终端
Arm Neural Technology brings advanced AI and graphics capabilities to mobile devices.

开放合作，赋能全球数字创新与发展

Driving Global Digital Innovation and Development Through Open Collaboration

Arm始终坚持开放合作理念，以系统级性能与能效、开放的软件栈和强大的生态体系为基础，推动AI图形技术创新与应用。为了进一步赋能生态系统，Arm开放AI图形模型、开发资源及工具链能力，还推出了全球首个全面开放的神经图形开发套件（Neural Graphics Development Kit），将 AI 渲染集成到现有的工作流程中，让开发者能够在硬件上市前着手开发，从而更高效地应用先进技术、加速创新成果落地。

Arm依托覆盖芯片、终端、开发平台及应用开发的全球移动生态体系，我们携手产业伙伴推动技术成果跨区域、跨行业共享，促进产业协同创新与能力共建。开放、共享、共建的发展模式不仅推动端侧AI能力普及，也为构建开放包容、互利共赢的数字生态创造了更多合作机遇和社会价值。

Arm remains committed to open collaboration, advancing innovation and adoption of AI-powered graphics through industry-leading system-level performance and efficiency, an open software stack, and a robust ecosystem. To further empower developers and ecosystem partners, Arm makes available AI graphics models, development resources, and toolchain capabilities and has introduced the world's first fully open Neural Graphics Development Kit. By integrating AI rendering into existing workflows, NGDK enables developers to begin innovation before hardware reaches the market, accelerating development and the deployment of new technologies.

Leveraging a global mobile ecosystem spanning silicon, devices, development platforms, and application development, Arm works with industry partners to promote the cross-regional and cross-industry sharing of technological innovation, foster collaborative innovation, and build ecosystem capabilities. This open, collaborative, and shared approach not only accelerates the adoption of on-device AI but also creates new opportunities for cooperation and societal value, helping build an open, inclusive, and mutually beneficial digital ecosystem.



▲ 以Arm高能效、开放生态和产业协同为基础，Arm神经网络技术推动AI原生图形技术创新与应用。
Built on Arm' s high energy efficiency, open ecosystem, and industry-wide collaboration, Arm Neural Technology is driving innovation and adoption of AI-native graphics technologies.



▲ Arm通过开放模型、开发套件和工具链赋能全球开发者生态。
Arm supports the global developer ecosystem through open models, development kits, and toolchains.

阿尔托大学QCD研究组与IQM量子计算机：从超导量子比特突破到欧洲量子计算产业化

Aalto University QCD Group and IQM Quantum Computers: From Superconducting-Qubit Breakthroughs to the Industrialization of Quantum Computing in Europe



▲ 阿尔托大学QCD实验室实景拼图，展示稀释制冷机、测控机柜、工作台与研究资料，呈现超导量子计算从实验装置到人才培养的现场基础。
A photo collage of Aalto's QCD laboratory, showing dilution refrigerators, control racks, workstations and research materials that underpin superconducting quantum computing and talent training.

申报机构
Applying Institution

阿尔托大学（Aalto University）
Aalto University

其他参与机构
Other Participating Organizations

VTT 芬兰技术研究中心、CSC 芬兰科学计算中心、LUMI 超级计算（EuroHPC）、于利希研究中心（德国）、阿布扎比技术创新研究所（阿联酋）、乌尔姆大学（德国）、Q-Exa 联盟、Qu-Pilot 项目联盟

VTT Technical Research Centre of Finland, CSC – IT Center for Science, LUMI Supercomputer (EuroHPC), Forschungszentrum Jülich (Germany), Technology Innovation Institute (UAE), University of Ulm (Germany), Q-Exa Consortium, Qu-Pilot Project Consortium

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖芬兰、法国、德国、西班牙、意大利等10个国家和地区
Covering 10 countries and regions including Finland, France, Germany, Spain, and Italy

全球量子计算正由实验室走向工程化部署，超导量子比特的稳定性与可扩展性仍是核心约束。芬兰已形成领先的量子技术集群；阿尔托大学QCD研究组通过产学研协同，将学术突破转化为可部署的量子计算系统，并拓展全球协作网络。

Quantum computing is moving from the laboratory toward engineered deployment, with the stability and scalability of superconducting qubits remaining core constraints. Finland has formed a leading quantum-technology cluster; Aalto University's QCD group translates academic advances into deployable systems through industry–academia collaboration and a growing international network.

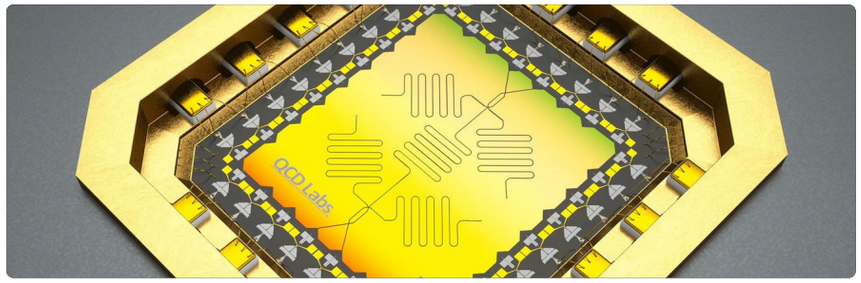
十国协同的量子计算产学研网络
A Ten-Country Industry–Academia Network for Quantum Computing

阿尔托大学QCD研究组成立于2007年，由Mikko Möttönen教授领衔，是超导量子计算领域的重要研究力量。2018年，团队由QCD Labs与VTT衍生创立IQM Quantum Computers，成长为欧洲规模领先的超导量子计算企业之一。在芬兰，Aalto Q20量子计算机部署于阿尔托大学，并与CSC的LUMI超算相连接，形成混合量子—经典计算架构；在德国，IQM慕尼黑团队参与引领Q-Exa联盟，服务国家量子计算设施建设；同时在美国、法国、西班牙、意大利、日本、新加坡等地设立机构，拓展全球布局。产学研在本案例中不是口号，而是同一条人才和装置链条：实验室突破进入公司产品，产品再回到大学与超算中心供教学和科研使用。

Aalto University's QCD group was founded in 2007 under Professor Mikko Möttönen and has become a significant force in superconducting quantum computing. In 2018, the team spun out IQM Quantum Computers from QCD Labs and VTT, now one of Europe's leading superconducting quantum-computing companies. In Finland, the Aalto Q20 system is installed at the university and linked to CSC's LUMI supercomputer as a hybrid quantum–classical architecture; in Germany, IQM's Munich team helps lead the Q-Exa consortium for national quantum infrastructure; offices in the United States, France, Spain, Italy, Japan and Singapore extend the global footprint. Industry–academia collaboration is a single chain of people and machines: laboratory advances enter company products, and those products return to the university and supercomputing center for teaching and research.



▲ IQM与VTT联合部署的超导量子计算系统，体现芬兰从实验室装置到可交付整机的产业化能力。
A superconducting quantum-computing system deployed by IQM and VTT, showing Finland's move from laboratory apparatus to a deliverable machine.



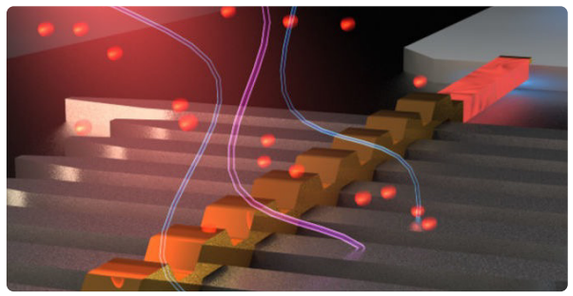
▲ QCD Labs超导量子芯片结构示意图，标明实验室与阿尔托大学标识，是产学研一体化的核心硬件载体。
Schematic of a QCD Labs superconducting quantum chip, marked with the laboratory and Aalto identity — the core hardware vehicle of the research-to-industry pathway.

从超导量子比特突破到产业化的闭环路径

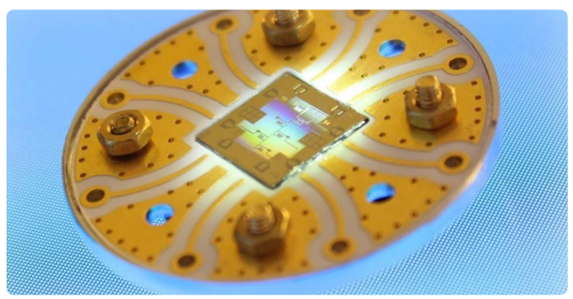
A Closed-Loop Pathway from Superconducting-Qubit Breakthroughs to Industrialization

本案例的核心创新，在于构建“基础研究—专利布局—公司衍生—产品交付—全球部署”的闭环。技术上，QCD Labs在超导量子比特相干时间（跨越毫秒量级）、重置与读出以及热管理等关键环节取得突破；Möttönen教授领衔的超低温微波传感研究获2026年欧洲发明奖提名。产业上，IQM已交付30余台量子计算机，覆盖5、20、54量子比特等规格，并推进更大规模系统；同时与阿尔托大学联合开发开源工具KQCircuits，供全球社区设计超导量子处理器。闭环把论文、专利、可交付整机和开放设计工具放在同一条路上，使欧洲量子计算不只停留在装置演示，而能够形成可复制的工程与产业节奏。

The case’s core innovation is a closed loop from basic research and patents to spin-out, product delivery and global deployment. QCD Labs advanced superconducting-qubit coherence into the millisecond regime, together with reset, readout and thermal management; a cryogenic microwave sensor associated with Professor Möttönen was nominated for the 2026 European Inventor Award. IQM has delivered more than 30 quantum computers, including 5-, 20- and 54-qubit systems, and is advancing larger machines. Together with Aalto, it developed the open-source KQCircuits tools for designing superconducting quantum processors. Papers, patents, deliverable machines and open design tools therefore sit on one road, so European quantum computing is not only a device demonstration but a repeatable engineering and industrial rhythm.



准粒子与超导电路相互作用的原理示意，对应量子比特退相干抑制、重置与读出等关键技术环节。
Schematic of quasiparticle interactions in a superconducting circuit, corresponding to coherence, reset and readout as key technical steps.



封装后的超导量子芯片实物，展示从实验室设计到可交付器件的工程化结果。
A packaged superconducting quantum chip, showing the engineering result from laboratory design to a deliverable device.

面向全球的普惠价值与量子计算产业化范式

Inclusive Global Value and a Paradigm for Quantum-Computing Industrialization

IQM完成2.75亿欧元B轮融资，成为芬兰成长最快的科技企业之一。芬兰量子产业预计需要约3,000名具备新技能的人才，Aalto Q20与IQM Academy直接服务这一缺口，使装置交付与人才培养同步进行。借助开源KQCircuits、开放的教学平台以及与超算中心的系统集成，资源有限的研究机构和企业能够以相对较低的门槛使用量子计算能力。Qu-Pilot、Q-Exa等跨国项目，则为欧洲提供了“学术突破—公司衍生—全球部署”的可复制产业化路径。普惠不意味着量子硬件本身变得廉价，而意味着设计工具、训练机会和上机入口可以被更多机构共享。

IQM raised EUR 275 million in Series B financing and became one of Finland’s fastest-growing technology companies. The national quantum industry is expected to need about 3,000 newly skilled people; Aalto Q20 and IQM Academy address that gap so that machine delivery and talent development move together. Open-source KQCircuits, an open education platform and integration with supercomputing centres allow resource-constrained laboratories and firms to access quantum capability at a relatively lower barrier. Cross-border projects such as Qu-Pilot and Q-Exa offer Europe a replicable path from academic breakthrough and company spin-out to global deployment. Inclusion here does not mean that quantum hardware itself becomes cheap; it means that design tools, training and access points can be shared by more institutions.



▲ IQM超导量子计算机系统渲染图，对应量子计算从学术突破走向工程化交付与公共科研设施部署。
Rendering of an IQM superconducting quantum computer, corresponding to the move from academic breakthrough to engineered delivery and public research infrastructure.

从学中文到卖全球——数字职教助力国际青年融入全球供应链

From Chinese Learners to Global Merchants: Digital Vocational Education Empowers Global Youth to Integrate into Global Supply Chains



▲ 数字职教助力国际青年融入全球供应链
Digital Vocational Education Empowers Global Youth to Integrate into Global Supply Chains

申报机构
Applying Institution

义乌工商职业技术学院
Yiwu Industrial & Commercial College

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖摩洛哥、哈萨克斯坦、加拿大、巴西、保加利亚、马来西亚等112个国家和地区

Covering 112 countries and regions including Morocco, Kazakhstan, Canada, Brazil, Bulgaria, and Malaysia

全球数字贸易快速发展，发展中国家青年受语言、渠道、基础设施、技能制约，难以参与其中。义乌商贸规模庞大，亟需复合型国际青年人才。义乌工商职业技术学院依托本地市场，面向多国培养国际学生，借力数字职教，助力青年跨越数字鸿沟，赋能商贸发展。

Global digital trade is booming, yet young people in developing countries face constraints in language, cross-border channels, infrastructure and skills which keep them out of the system. Boasting huge trade volume, Yiwu is in urgent need of versatile international young talents. Leveraging local market strengths, Yiwu Industrial & Commercial College enrolls international students from multiple countries. Through digital vocational education, it helps young people bridge the digital divide and empowers trade development.

以数字中文为纽带，消弭跨文化沟通壁垒

Bridge cross-cultural communication barriers via digital Chinese language learning.

学校将中文教学与数字工具应用深度融合，开发“中文+跨境电商”“直播话术实训”等数字化课程，帮助国际学生在真实商务场景中学中文、用中文、做贸易。引入AI语音评测、智能翻译辅助工具，建设线上多语种教学平台，支持中英法阿等语言界面切换，实现随时学、随地练。国际学生积极参加创新创业和文化传播活动，获得各类国际奖项119项。国际学生培养得到新华社、央视财经等全球媒体报道200余次。

YWICC deeply integrates Chinese language teaching with digital tool applications, developing digital courses such as “Chinese + Cross-border E-commerce” and “Live-streaming Script Training”, which help international students learn, practise and conduct trade in authentic business scenarios. AI pronunciation assessment and intelligent translation tools are introduced alongside a multilingual online learning platform supporting Chinese, English, French, Arabic and other languages for anytime, anywhere practice. International students actively participate in innovation, entrepreneurship and cultural exchange activities, winning 119 international awards. Its international students’ training programs have been covered more than 200 times by international media including Xinhua News Agency and CCTV Finance.



▲ 中外学子开展直播话术实训
Live-streaming Script Training for Chinese and International Students

以数字平台为课堂，培育全球数字贸易生力军

Cultivate a new generation of global digital trade practitioners through digital platform classrooms.

学校将义乌市场转化为数字贸易实训场，建设跨境电商直播基地、国际创客园等数字化教学场景。学生走进国际商贸城，直面真实商品、真实订单、真实客户；走进全球数贸中心，接触AI设计、智能选品等前沿应用，直观看到一件商品如何通过镜头、平台、仓储和物流进入全球市场。在“义路同行”全球青年创业培训中，学员使用TikTok、亚马逊直播等多语种平台实操，AI辅助生成直播脚本、智能推荐选品策略，从选品、上架、运营到物流、支付、售后，全链路掌握跨境电商核心技能。

YWICC transforms Yiwu’s physical markets into digital trade training bases, building digital teaching venues such as cross-border e-commerce live-streaming bases and international park for innovation and entrepreneurship. Students visit the International Trade City to engage with real goods, orders and clients, and explore the Global Digital Trade Center to experience cutting-edge tools including AI product design and intelligent merchandise selection. They gain first-hand insight into how products reach global consumers via live streams, online platforms, warehousing and logistics. During the “Run with Yiwu-Global Youth Business Program”, global youth entrepreneurship training, trainees practise on multilingual platforms like TikTok and Amazon Live. AI tools assist them in generating live broadcast scripts and recommending product selection strategies, equipping learners with full-chain cross-border e-commerce capabilities covering product sourcing, listing, operation, logistics, payment and after-sales service.



▲ 国际学生走进国际商贸城进行直播带货
International Students Visit the International Trade City for Live-stream Marketing

以数字标准为桥梁，连接全球市场

Link global markets through exported digital vocational standards.

学校将“中国经验”转化为“世界标准”。摩洛哥义乌商学院采用“2年本土+1年中国”模式，在境外招收培养学历国际学生，学校派驻专业教师赴卡萨布兰卡开展中文+专业教学。国际经济与贸易专业标准及跨境电商实务等10个标准获摩洛哥职业教育与就业发展办公室官方认证，自2024年4月起面向当地学员分批次开展跨境电商培训，覆盖学员4000余人。学校与义乌市人社局联合开发“国际商贸AI应用”等专项职业能力证书，首次把跨境电商直播专项职业技能考核搬到国外，让中国标准在境外落地、让当地青年在本土就能考取国际认可的职业技能证书。

YWICC translates China’s practical experience into internationally applicable benchmarks. The Yiwu Business School in Morocco adopts a “2 years study in Morocco + 1 year study in China” model to recruit and educate international degree students overseas, with professional instructors dispatched to Casablanca to deliver combined Chinese language and vocational courses. Ten standards, including curriculum benchmarks for International Economics & Trade and Cross-border E-commerce Practices, have obtained official certification from Morocco’s Office for Vocational Training and Employment Development. Since April 2024, targeted cross-border e-commerce training sessions have been delivered to more than 4,000 trainees. Partnering with Yiwu Human Resources and Social Security Bureau, YWICC develops special vocational competency certificates such as the International Trade AI Application credential. It has brought cross-border e-commerce live-streaming skill assessments overseas for the first time, enabling local youth to earn internationally recognized vocational certificates without leaving their home country.



▲ 国际商贸AI应用培训现场
AI Applications in International Business & Trade — On-site Training

以数字创业为出口，孵化全球青年创客

Incubate global young entrepreneurs through digital entrepreneurship support.

学校依托国际创客园、国际青创社区、校企合作平台和校友网络，为国际学生提供创业辅导、资源对接和实践机会。摩洛哥籍校友努尔曼毕业后在义乌创办外贸公司，建立摩洛哥校友会。面向数字贸易新趋势，依托国际青年创业孵化基地，为外籍青年提供企业注册、工作许可、社保缴纳等服务指导，孵化落地项目47个，营业额超3亿元。

Supported by its international park for innovation and entrepreneurship, youth entrepreneurship community, school-enterprise cooperation platforms and alumni network, YWICC provides international students with entrepreneurship mentorship, resource matching and hands-on practice opportunities. Ennamane Otmane, a Moroccan alumnus, founded a foreign trade company in Yiwu after graduation and established a Moroccan alumni association. Catering to emerging trends in digital trade and supported by the international youth entrepreneurship incubation base, YWICC offers guidance on enterprise registration, work permit applications and social insurance procedures for foreign young entrepreneurs. Forty-seven startup projects have been incubated here, generating a total turnover exceeding 300 million yuan.



▲ 学校面向国际学生开展全球青年创业培训班
Global Youth Business Program for International Students

上海国际再保险登记交易中心——构建“云链智算”再保险数字新基建重塑开放包容的风险治理新范式

Shanghai International Reinsurance Exchange: Building Next-Generation Digital Infrastructure for Reinsurance, Powered by Cloud, Blockchain, and Intelligent Computing - Shaping an Open and Inclusive Model of Risk Governance



▲ 上海国际再保险登记交易中心交易大厅
Trading Hall at the Shanghai International Reinsurance Exchange

申报机构
Applying Institution

SIRE 上海国际再保险登记交易中心 SHANGHAI INTERNATIONAL REINSURANCE EXCHANGE

上海国际再保险登记交易中心有限公司
Shanghai International Reinsurance Exchange Co., Ltd.

其他参与机构
Other Participating Organizations

SHIE 上海保交所

上海保险交易所股份有限公司
Shanghai Insurance Exchange Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、英国、新加坡、百慕大、巴基斯坦、泰国、摩洛哥、哈萨克斯坦、印度尼西亚等152个国家和地区
Covering 152 countries and regions, including the United States; the United Kingdom; Singapore; Bermuda; Pakistan; Thailand; Morocco; Kazakhstan; Indonesia

气候变化、地缘冲突与供应链危机使全球风险敞口扩大，亟需风险治理新范式。再保险依赖人工、传真等传统方式，成本高、摩擦大，难以满足规模化协作需求。上海国际再保险登记交易中心构建数字新基建，应对全球风险新挑战。

Climate change, geopolitical conflicts, and supply-chain crises are increasing risk exposure worldwide, creating an urgent need for a new model of risk governance. Reinsurance still relies heavily on labor-intensive processes and traditional tools such as fax, which raise costs, create friction, and impede collaboration at scale. To meet these shared global challenges, the Shanghai International Reinsurance Exchange is building new digital infrastructure for reinsurance.

基于云原生架构织就全球协作网络，实现生产要素高效配置与市场深度融合

Building a Cloud-Native Global Collaboration Network for More Efficient Resource Allocation and Deeper Market Integration

平台践行“技术向善”与“开放互利”理念，采用云原生微服务架构，构建覆盖交易、对账、结算全流程的智能化协作网络，已为152个国家和地区的3478家机构赋予统一交易编码。

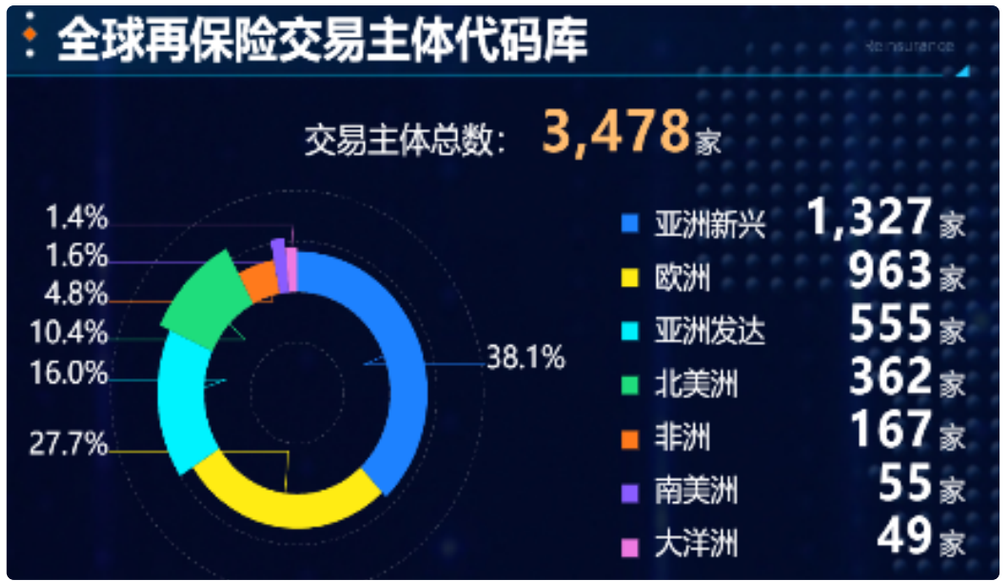
平台实现交易数据实时上链、对账零人工干预、跨境结算快速到账，打破机构间“数据孤岛”，为手工操作、邮件传真、单证不一等全球再保险共性痛点提供新解决方案。截至2026年8月，来自新加坡、泰国、印度尼西亚、百慕大等地的176家机构注册开通交易权限，其中超过三分之一的机构来自中国大陆以外的国家或地区，累计交易保费超220亿元，保额超6400亿元。

Guided by the principles of "technology for good" and "openness and mutual benefit", the platform uses a cloud-native microservices architecture to build an intelligent collaboration network spanning the full transaction, reconciliation, and settlement lifecycle. It has assigned standardized trading codes to 3,478 institutions in 152 countries and regions.

Transaction data are recorded on the blockchain in real time; reconciliation requires no manual intervention; and cross-border settlements are completed rapidly. By breaking down institutional data silos, the platform offers new solutions to shared pain points in global reinsurance, including manual processing, reliance on email and fax, and inconsistent documentation. As of August 2026, 176 institutions from Singapore, Thailand, Indonesia, Bermuda, and elsewhere have registered and been granted trading access with more than one-third are based outside mainland China. Cumulative reinsurance premium volume has exceeded RMB 22 billion, with aggregate sum insured exceeding RMB 640 billion.



▲ 上海国际再保险登记交易中心数字化交易平台页面
Digital Trading Platform Interface of the Shanghai International Reinsurance Exchange



▲ 全球再保险交易主体统一代码库 / Global Reinsurance Entity Identifier

创立“技术+标准+生态”三位一体治理模式，驱动算法信任与规则互认

Establishing an Integrated Technology-Standards-Ecosystem Governance Model to Advance Algorithmic Trust and Mutual Recognition of Rules

技术驱动信任：落地行业级区块链应用，实现信息防篡改、全程可追溯，从“人工协商”迈向“算法信任”。结合大数据与AI构建全球风险治理地图与智能信用画像，提升风险预警能力。应用隐私加密技术，保障商业机密前提下实现数据安全跨机构流通。

标准引领互认：制定中国再保险区块链标准及市场规则体系，降低交易摩擦，推动国际规则互认。建立全球再保险交易主体统一代码库，实现机构身份唯一识别，提升跨境交易效率。

生态开放赋能：以数字化流程替代线下单证审核，跨境资金收付操作可实现从两周以上缩短至秒级。率先出台再保险领域数据出境操作指引，数据安全高效跨境新机制获全球机构广泛认可。

Technology-enabled trust: The platform has deployed industry-grade blockchain applications that make information tamper-resistant and fully traceable, moving the market from "manually negotiated trust" toward "algorithmic trust". Big data and AI support a global risk-governance map and intelligent credit profiles, strengthening risk early-warning capabilities. Privacy-enhancing encryption allows data to flow securely among institutions while safeguarding confidential business information.

Standards enabling mutual recognition: SIRE has developed Chinese blockchain standards for reinsurance and a supporting framework of market rules to reduce transaction friction and promote mutual recognition of rules internationally. It has also created a unified code repository for reinsurance market participants worldwide, enabling unique institutional identification and more efficient cross-border transactions.

An open, enabling ecosystem: The platform replaces offline document reviews with digital workflows, making it technically possible to reduce cross-border payment and collection processing times from more than two weeks to seconds. It was the first in the sector to issue operational guidelines for outbound data transfers in reinsurance. This mechanism for secure, efficient cross-border data flows has gained broad recognition among institutions worldwide.



“技术+标准+生态”三位一体治理模式
Technology-Standards-Ecosystem Governance Model

打造普惠共赢的数字公共产品，贡献全球风险治理的中国方案

Creating an Inclusive, Mutually Beneficial Digital Public Good and Contributing a Chinese Approach to Global Risk Governance

平台支持互联网登录与接口接入，全球保险持牌机构均可以较低成本（无入场审核费用、无保证金要求等）入场，使用标准化、便利化、规范化的场内交易服务，参与全球风险分散。作为全球再保险信息交互的标准化枢纽，平台有效降低跨机构数字化交互的难度，避免重复建设。

依托平台智能化协同网络，176家再保险交易主体平均对账用时26小时、清算用时86小时，远低于传统市场。降本增效的规模化协作，显著降低了再保险服务成本，为巨灾、新兴风险及企业国际化等领域注入普惠金融动能。例如，某国际化企业通过平台实现风险分散，年度保险成本下降35%。

平台同时构建可溯源的交易行为记录与公开透明的履约管理机制，降低全球再保险的信任成本，并吸引标普、贝氏、中诚信等国际评级机构，共同探索优化国际信用评价体系，推动构建开放、包容、普惠、可持续的网络空间命运共同体。

Accessible through a web portal or API, the platform allows licensed insurance institutions worldwide to participate at low cost, with no application review fees or margin requirements. Participants can use standardized, streamlined, and well-regulated on-platform trading services to take part in global risk diversification. As a standardized information-exchange hub for the global reinsurance market, the platform lowers the barriers to digital connectivity between institutions and reduces duplicative infrastructure investment.

Through the platform's intelligent collaboration network, 176 reinsurance market participants have achieved average clearing and settlement times of 26 hours and 86 hours, respectively—substantially shorter than under traditional market processes. By enabling cost-efficient collaboration at scale, the platform significantly lowers the cost of reinsurance services and broadens access to protection against catastrophe and emerging risks, including for companies expanding internationally. For example, an internationally active company used the platform to diversify risk and cut its annual insurance costs by 35%.

Through traceable transaction records and a transparent performance management framework, the platform reduces the cost of trust in global reinsurance. It has also engaged international rating agencies, including S&P Global Ratings, A.M. Best, and China Chengxin International Credit Rating, to jointly explore improvements to the international credit assessment system. Together, these collaborative efforts advance the vision of jointly building an open, inclusive, sustainable community with a shared future in cyberspace that delivers benefits for all.



▲ 平台履约管理
Performance Management



▲ 上海国际再保险登记交易中心数字化交易平台功能页面
Feature Interface of the Shanghai International Reinsurance Exchange Digital Trading Platform

打造线下集中交易市场，协同数字平台重塑全球再保险非标交易新生态

Building a Centralized In-Person Marketplace to Complement the Digital Platform and Reshape the Ecosystem for Bespoke Global Reinsurance Transactions

为提升再保险非标交易的磋商效率，协同数字化交易平台重塑风险治理新范式，上海国际再保险登记交易中心依托“年度会议 + 月度集市”双线模式，打造线下再保险集中交易市场，加强全球交流合作。上海国际再保险会议自2019年起已连续举办七届，累计吸引全球29个国家或地区的百余家再保险产业链机构、8000余人次行业嘉宾参会，会议成果获得全球主流媒体广泛关注与深度报道。“再一起”再保险月度集市活动截至2026年8月，已举办18场，吸引400余家次机构参与，持续织密全球再保险合作网络。

To make negotiations on bespoke reinsurance transactions more efficient and to reshape risk governance in coordination with the digital trading platform, the Exchange has adopted a dual-track model of an annual conference plus a monthly marketplace. This model creates a centralized, in-person reinsurance market and deepens international exchange and cooperation.

The Shanghai International Reinsurance Conference has been held for seven consecutive editions since 2019. It has attracted more than 100 organizations across the reinsurance value chain from 29 countries and regions, with a cumulative attendance of more than 8,000 industry guests; its outcomes have received extensive coverage from leading media outlets worldwide. As of August 2026, 18 "Re-gathering" Monthly Marketplace events had been held, recording more than 400 institutional participations and further strengthening the global reinsurance cooperation network.



▲ 线上平台+线下市场，协同重塑全球再保险非标交易新生态
Digital Platform + In-Person Marketplace: Working in Tandem to Reshape the Global Ecosystem for Bespoke Reinsurance Transactions



◀ 上海国际再保险会议现场
The Shanghai International Reinsurance Conference in Session

极飞智能农场解决方案：用一部手机种好地，让数字农业普惠全球

XAG Smart Farm Solution: Farming at Your Fingertips, Digital Agriculture for All.



▲ 极飞智能农场愿景图
XAG Smart Farm Vision

申报机构
Applying Institution

广州极飞科技股份有限公司
Guangzhou Xaircraft Technology Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、泰国、巴西、美国、日本、英国等60多个国家和地区
Covering more than 60 countries and regions including China, Thailand, Brazil, the United States, Japan, and the United Kingdom

粮食安全关乎人类共同未来。极飞致力于以机器人、人工智能、新能源和数字化技术赋能农业，打造全自主、高效率、可持续的智能农场解决方案，帮助全球农户以更少投入获得更多产出，让数字农业惠及全球。

Food security is essential to our shared future. XAG is committed to advancing agriculture through robotics, artificial intelligence, digital technologies, and clean energy solutions. By developing autonomous, efficient, and sustainable smart farm solutions, XAG helps farmers worldwide produce more with less and makes digital agriculture accessible to all.

用一部手机种好地，让数字农业扎根全球田野

Global Challenges, Locally Adapted Solutions

面对农村人口老龄化、气候变化和水资源短缺等全球性挑战，极飞科技以农业机器人、人工智能、数字化和新能源技术赋能农业，打造覆盖农田感知、智能决策、精准作业与生产管理的智能农场解决方案，帮助农业生产者实现耕、种、管、收全程无人化管理，以更少投入获得更高产出。

目前，极飞产品已进入全球60多个国家和地区。在中国，极飞依托1000多家授权合作网点服务多元种植场景，并通过3000亩“超级棉田”验证大规模无人化管理的可行性；在泰国，携手正大集团推广“超级农场”模式；在巴西，与凯斯纽荷兰推动智慧农业装备落地；在日本，与拜耳合作应对农业劳动力短缺与老龄化问题。面对不同地区多样化的种植需求，极飞以可复制、可适配、可推广的技术方案，帮助全球小农户和大农场提升生产效率。

Facing shared challenges such as an aging rural workforce, climate change, and water scarcity, XAG is harnessing robotics, artificial intelligence, digital technologies, and new energy solutions to transform the way farming is done. Its Smart Farm Solution brings together field sensing, intelligent decision-making, precision operations, and farm management, enabling autonomous operations across the entire farming cycle—from field preparation and planting to crop care and harvesting. This helps farmers produce more with fewer inputs.

Today, XAG products are used in more than 60 countries and regions. In China, a network of over 1,000 authorized partners supports a wide range of crops and production environments, while the 200-hectare Super Cotton Farm has demonstrated that autonomous farm management can work at scale. In Thailand, XAG works with Chia Tai to expand the Smart Farm model. In Brazil, XAG is partnering with CNH to accelerate the adoption of smart agricultural equipment. In Japan, XAG is collaborating with Bayer to help address agricultural labor shortages and an aging workforce.

Across diverse crops, regions, and farm sizes, XAG delivers practical solutions tailored to local needs and built to scale—helping smallholders and large-scale farms alike increase productivity.



▲ 极飞携手全球合作伙伴，将先进高效的智慧农业设备和生产模式带往世界各地
XAG Solving Local Challenges on a Global Scale

从农田感知到自主作业，打通种植管理全流程

From Field Intelligence to Autonomous Operations

传统农业生产中，农情获取、农事决策与机械作业往往相互分离，种什么、何时种、如何管仍高度依赖人工经验。极飞通过建设数字农业基础设施、研发精准农业装备、构建智慧农业生态系统，形成“感知-决策-执行”全流程闭环。巡田无人机与农业物联网设备持续采集作物长势、气象和土壤等信息，人工智能结合农艺模型开展地势分析、出苗识别、病虫害和长势诊断，并生成可执行的农事任务。农业无人机、农业无人车、农机自驾仪和智能水肥管理系统等装备，则精准完成播种、植保、施肥和灌溉等作业。管理者只需一部手机，即可掌握农情、调度设备、追溯记录。通过融合数字感知、智能决策与自主作业，极飞以创新方式破解传统种植难题，提升种植管理全过程的智能化、数字化水平，让农业生产更精准、高效、可持续。

In conventional farming, field monitoring, agronomic decision-making, and machinery operations often function as separate processes. Decisions about what to grow, when to plant, and how to manage crops still depend on experience. XAG brings these elements together by building digital farming infrastructure, developing precision agricultural equipment, and creating a smart farming ecosystem—forming an end-to-end loop from sensing and decision-making to execution.

Field scouting drones and agricultural IoT devices continuously collect data on crop growth, weather, and soil conditions. Working with agronomic models, artificial intelligence analyzes terrain, detects seedling emergence, identifies pest and disease risks, assesses crop health, and turns field insights into actionable farming tasks.

Agricultural drones, agricultural rovers, autosteering systems, and smart irrigation and fertigation systems then carry out seeding, crop protection, fertilization, and irrigation with precision. Using just a smartphone, farm managers can stay on top of field conditions, coordinate equipment, and review operational records.

By integrating digital sensing, intelligent decision-making, and autonomous operations, XAG is creating a smarter, more connected approach to farming—improving every stage of crop production while making agriculture more precise, efficient, and sustainable.



▲ 极飞核心产品 / XAG Product Lineup



▲ 极飞X系列农业机器人开启智能农场新时代
XAG X Series Agricultural Robot

用科技提升生产效率 让全球小农户和大农场都能受益

Advancing Agriculture for Every Farm, Everywhere

技术创新是提升农业效能的核心引擎。从精准播种到智能管理，极飞持续将人工智能、机器人和新能源技术转化为田间生产力，帮助农户应对劳动力短缺和成本上升，让农业生产更高效、更绿色。以“超级棉田”为例，与周边种植大户相比，项目增产8%，人力成本、用水成本、农药成本分别减少71.7%、25.3%和12.4%，展现了智能农场规模化应用的实际收益。从增产降本到人才成长与生态改善，极飞正将创新转化为可衡量、可持续的实际价值。依托极飞学园和全球培训网络，截至2025年底，极飞已累计培训智慧农业人才超过23万，为青年返乡就业创业创造更多可能。厘米级导航、离心雾化和智能灌溉等技术有效减少资源消耗和生态负担。相较传统设备，极飞智能装备累计节省燃油10.3亿升、节约农业用水1.8亿吨、减少碳排放275万吨。

Technological innovation is key to improving agricultural productivity. From precision seeding to smart farm management, XAG turns advances in artificial intelligence, robotics, and clean energy into practical tools for the field—helping farmers navigate labor shortages and rising costs while producing more efficiently and sustainably. The XAG Super Cotton Farm shows what this approach can deliver at scale. Compared with neighboring large-scale farms, the project achieved 8% higher yields while reducing labor costs by 71.7%, water costs by 25.3%, and pesticide costs by 12.4%.

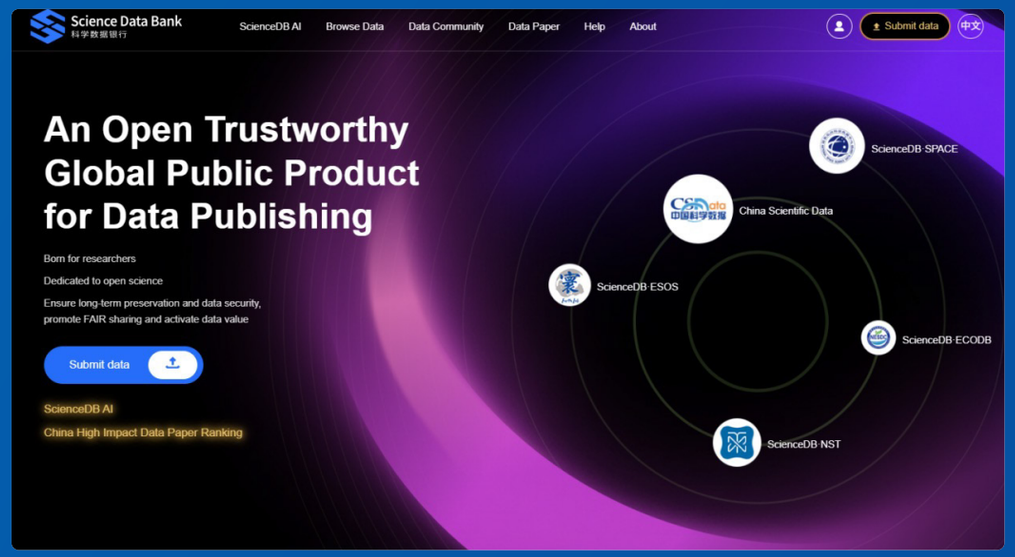
Beyond higher yields and lower costs, XAG is creating new opportunities for rural communities while reducing agriculture's environmental footprint. Through XAG Academy and its global training network, XAG had trained more than 230,000 people in smart agriculture by the end of 2025, creating new pathways for young people to return to rural areas, build careers, and start businesses. Technologies such as centimeter-level navigation, centrifugal atomization, and smart irrigation also help reduce resource use and environmental impact. Compared with conventional equipment, XAG's smart equipment had saved 1.03 billion liters of fuel and 180 million metric tons of water, while reducing carbon emissions by 2.75 million metric tons.



▲ 极飞超级棉田
XAG Super Cotton Farm

科学数据银行：携手构建全球开放出版关联数据合规共享与智能供给生态

Science Data Bank: partner of open data ecosystem for supporting appropriate use and intelligent provision of publication linked data



▲ 科学数据银行首页
Homepage of Science Data Bank

申报机构
Applying Institution

中国科学院计算机网络信息中心
Computer Network Information Center (CNIC) of the Chinese Academy of Sciences (CAS)

其他参与机构
Other Participating Organizations

Springer Nature

Figshare

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

面向德国、英国、荷兰、法国、巴西、加拿大、澳大利亚、美国、中国香港等200余个国家和地区开放共享科学数据集

Scientific datasets are made available for sharing to over 200 countries and regions, including Germany, the United Kingdom, the Netherlands, France, Brazil, Canada, Australia, the United States and Hong Kong, China.

科学数据银行是一个开放可信的通用型科学数据发布与长期保存平台。平台携手Springer Nature、Figshare等合作伙伴共建科学数据共享最佳实践，助力推动全球科学数据开放获取。

Science Data Bank is an open and trusted general-purpose platform for scientific data publication and long-term preservation. Together with Springer Nature, Figshare and other collaborators, the platform co-develops best practices for scientific data sharing.

服务科研社群主导的科学数据开放共享

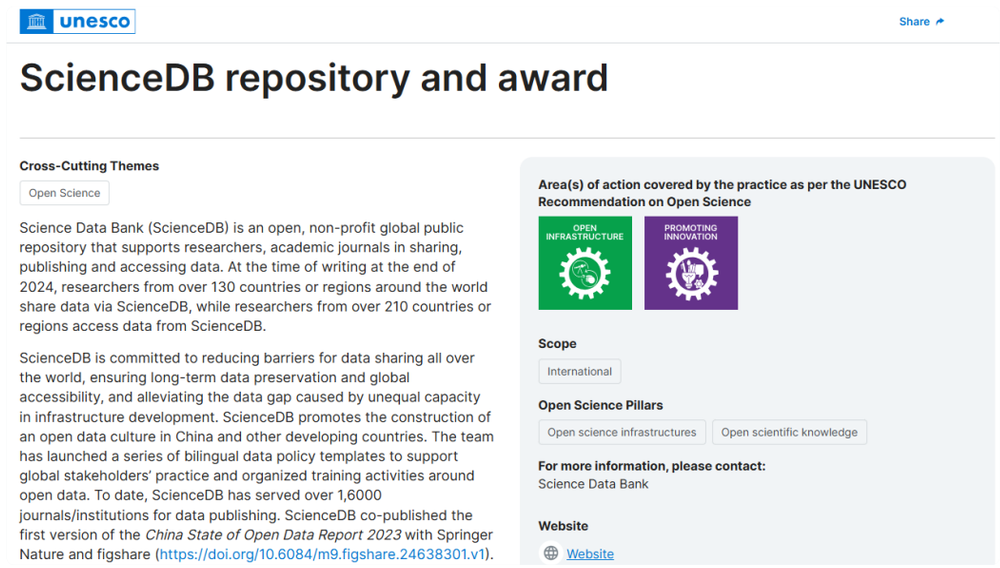
Supporting community-led open scientific data

科学数据银行是与学术出版商和科研社群共建的通用型科学数据存储与发布平台，联合Springer Nature、Figshare等共同组织开放数据活动，入选联合国教科文组织和亚太经济合作组织开放科学联盟推荐的开放科学基础设施与服务实践案例。科学数据银行服务的社群包括4500余种期刊（12.39%为中国期刊，87.61%为国际期刊），15000余个支持开放共享的科研机构（43%为中国科研机构，57%为国际科研机构）。

Science Data Bank (ScienceDB) is a general-purpose platform for scientific data publication and long-term preservation built jointly with academic publishers and research communities. ScienceDB organizes open data activities with Springer Nature, Figshare and other partners. ScienceDB has been selected as open science infrastructure and services by UNESCO, Open Science Alliance of APEC. The communities served by ScienceDB cover more than 4,500 academic journals (12.39% Chinese journals and 87.61% international journals), over 15,000 research organizations (43% Chinese organizations and 57% international organizations) supporting open science.

《联合国教科文组织开放科学建议书》呼吁基于开源软件栈发展由科研社群主导的普惠性数字化开放科学设施平台、共同支持设施平台互操作。科学数据银行基于中国科学院计算机网络信息中心和其它研发机构形成的开源软件栈体系推动传统的开放数据向用户社群主导参与的科学知识共享转型，与合作伙伴共同支持在尊重开放科学社群意愿和贡献的前提下以资源互操作赋能科研创新与社会包容性发展，被哈佛大学等数据管理领域的专业机构推荐为支持科研创新与教学的开放存储库。

UNESCO Recommendation on Open Science advocates community-led development of interoperable and inclusive digital open science infrastructures based on open-source software stacks. With open-source software stacks shared by CNIC of CAS and third parties, Science Data Bank has developed technical solutions and service models to enable community-led open scientific knowledge, and becomes one partner of resource interoperability for research innovation and inclusive development. Science Data Bank is recommended by Harvard and other well-known data management organizations as an open repository supporting scientific data sharing for research and education.


unesco

Share

ScienceDB repository and award

Cross-Cutting Themes

Open Science

Science Data Bank (ScienceDB) is an open, non-profit global public repository that supports researchers, academic journals in sharing, publishing and accessing data. At the time of writing at the end of 2024, researchers from over 130 countries or regions around the world share data via ScienceDB, while researchers from over 210 countries or regions access data from ScienceDB.

ScienceDB is committed to reducing barriers for data sharing all over the world, ensuring long-term data preservation and global accessibility, and alleviating the data gap caused by unequal capacity in infrastructure development. ScienceDB promotes the construction of an open data culture in China and other developing countries. The team has launched a series of bilingual data policy templates to support global stakeholders' practice and organized training activities around open data. To date, ScienceDB has served over 1,6000 journals/institutions for data publishing. ScienceDB co-published the first version of the *China State of Open Data Report 2023* with Springer Nature and figshare (https://doi.org/10.6084/m9.figshare.24638301.v1).

Area(s) of action covered by the practice as per the UNESCO Recommendation on Open Science

OPEN INFRASTRUCTURE

PROMOTING INNOVATION

Scope

International

Open Science Pillars

Open science infrastructures | Open scientific knowledge

For more information, please contact:

Science Data Bank

Website

Website

▲ 科学数据银行入选联合国教科文组织开放科学实践案例集
ScienceDB selected as open science practice by UNESCO


The People's Republic of China

To promote openness and inclusivity, Chinese President, Xi Jinping, announced at the 19th G20 Leaders' Summit that China, along with Brazil, South Africa, and the African Union, has jointly initiated the Open Science International Cooperation Initiative. This initiative promotes global scientific and technological innovation to benefit the Global South.

The science and technology progress law of the People's Republic of China includes the promotion of open science in the economy. Research data supported by public finance funding usually needs to be open and shared. Some funding agencies mandate research data sharing after a certain period. In addition, China has already established some national science data centres, such as the National Earth System Science Data Center.

Every year, China organises many training courses for librarians and researchers. In some universities, open science courses are also offered to undergraduate students. The funding for open science is relatively large, and incomplete statistics show that the annual cost of supporting open-access papers is nearly 5 billion yuan.

Additionally, China has invested significantly in infrastructure to support open science, exemplified by the creation of the Science Data Repository (ScienceDB), a public and universal scientific data repository mainly aimed at stakeholders such as researchers, research projects/teams, research journals, research institutions, and universities. It provides services such as scientific data submission, long-term storage, publishing, sharing, and acquisition, supports multiple data acquisition and usage licenses, and promotes the discoverability, citation, and reusability of data while protecting the rights and interests of data owners.

"China has invested significantly in infrastructure to support open science, exemplified by the creation of the Science Data Repository (ScienceDB)."

APECOSA

LANDSCAPE STUDY REPORT ON
POLICY RECOMMENDATIONS FOR
THE IMPLEMENTATION OF THE APEC
OPEN SCIENCE ALLIANCE

▲ 科学数据银行入选亚太经合组织开放科学联盟案例集
ScienceDB selected as open science practice by APEC Open Science Alliance

以开放工具集支持科学数据智能化供给

Developing open IT tools for intelligent provision of scientific data

《联合国教科文组织开放科学建议书》呼吁根据科研创新的特点适度发展与学术出版和关联数据集检索分析相关的自动化工具集。科学数据银行联合科研社群共同支持发展与适度人工智能就绪相关的高质量科学数据集，根据科研创新特点开放与数据集推荐相关的工具。

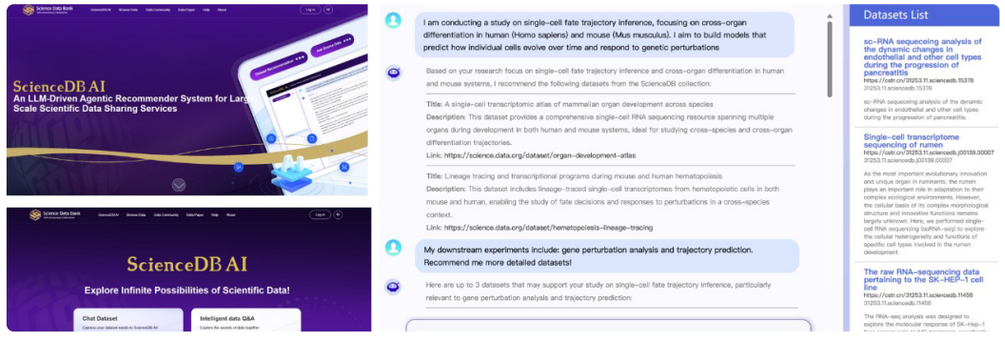
UNESCO Open Science Recommendation advocates the appropriate use of open IT tools for automating the process of searching and analyzing linked publications and data for generating and testing hypotheses. Science Data Bank supports discovery and appropriate use of high-quality datasets within research communities.

科学数据银行持续发展与跨学科领域协同数据出版相关的理论框架和互操作标准协议体系，以开放工具集联合学术出版商、高校、研究机构、科学数据中心、科研装置团队等社群参与全球科学知识共享。

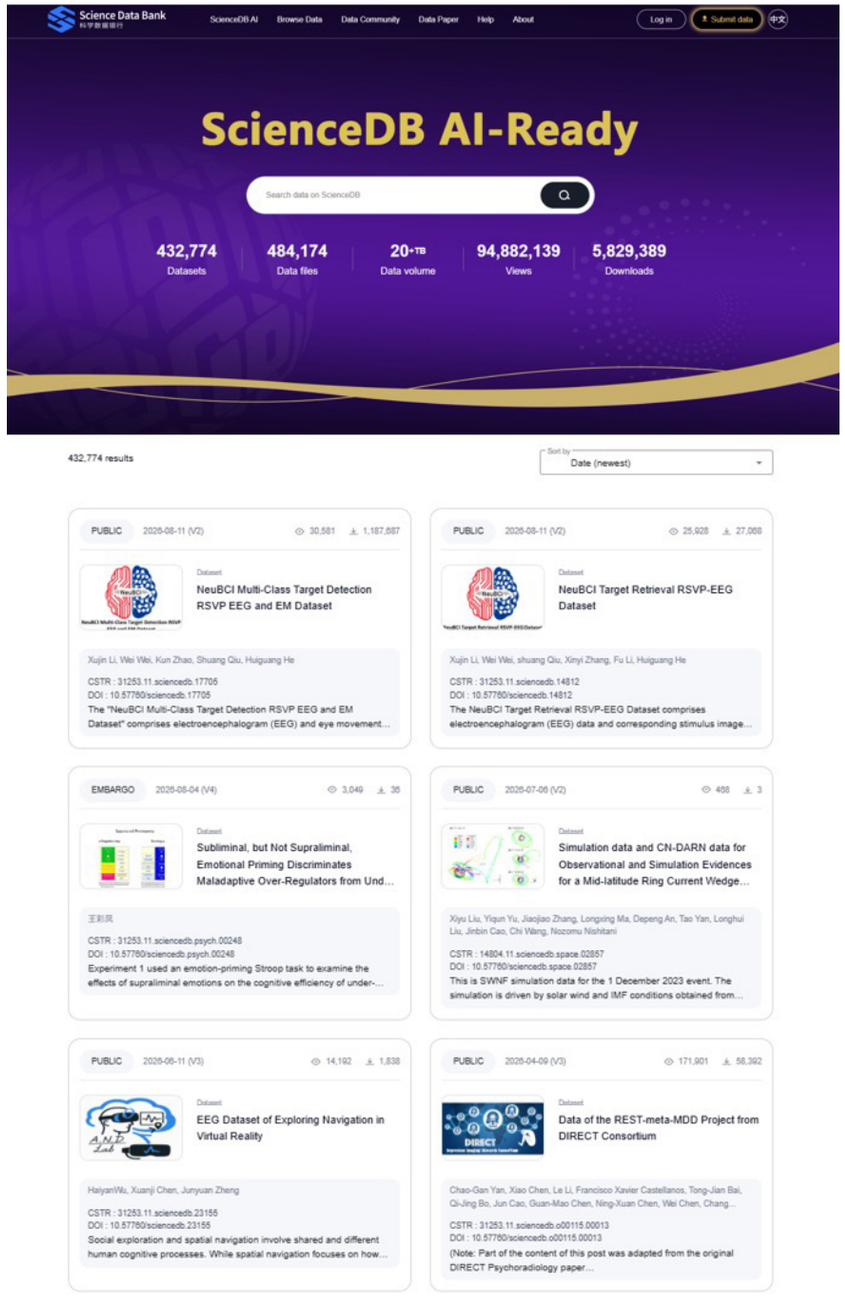
ScienceDB develops a theoretical framework and interoperable standards protocols for collaborative data publication across research domains and uses IT tools to support open scientific knowledge with academic publishers, universities, research institutions, scientific data centers and research infrastructures.

科学数据银行利用科学地平线的综合评价能力遴选与科研创新相关的高质量数据集，实现百万量级数据文件内容人工智能就绪度评估与合规共享。发布ScienceDB AI服务，基于大语言模型科学数据推荐智能体提供更加精准的科研级科学数据发现服务。

ScienceDB evaluates AI-readiness of research datasets based on the capability of Science Horizon, and shares more than 1 million data files with AI-ready contents based on community-agreed levels. ScienceDB launches ScienceDB AI as LLM-driven agentic recommender system for large-scale scientific data sharing service, capable of deep semantic understanding and personalized recommendation based on experimental dataset needs.



▲ 科学数据银行AI数据集智能分析问答服务 / ScienceDB AI



根据人工智能就绪度开放的高质量数据专区
High-quality data community based on AI-ready evaluation

支持与科研创新和可持续发展相关的开放数据能力建设

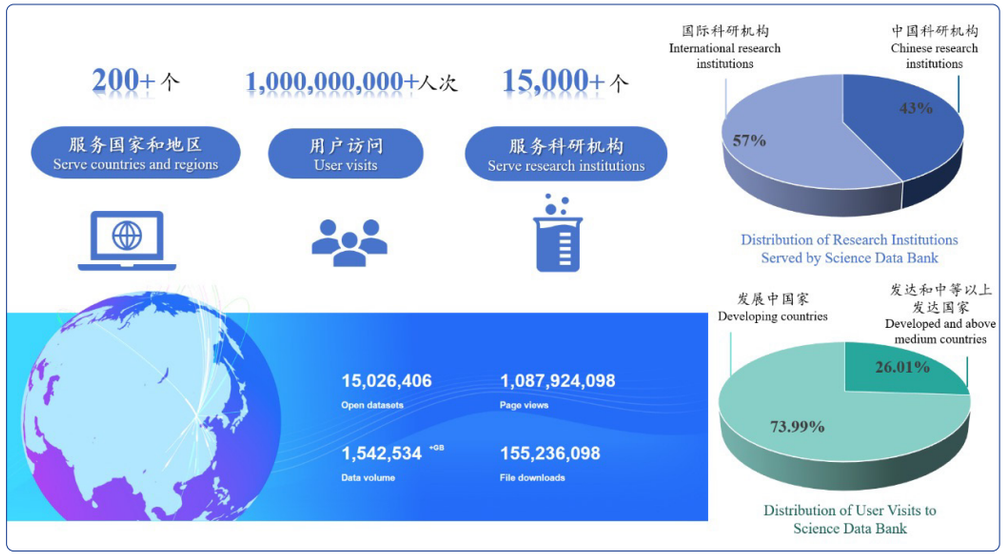
Supporting open data capacity building for research and SDGs

科学数据银行与Springer Nature、Figshare等合作伙伴携手推动科学数据开放共享文化氛围建设，2023年起至今联合发布《中国开放数据白皮书》系列年度报告，共同呼吁科学数据的合规共享与重用。联合不同国家和地区的期刊、出版商等开展各类研讨活动，在联合国教科文组织、国际科学理事会数据委员会等国际组织的能力建设活动中为科研社区贡献开放资源与培训课程。

Since 2023, Science Data Bank jointly released the annual report “The State of Open Data in China” and organized webinars with Springer Nature, Figshare, etc. to support open scientific data based on community-agreed levels. ScienceDB also participated in capacity building activities organized by UNESCO and Committee on Data of the International Science Council to share open resources with research communities.

科学数据银行已根据国际标准开放15,026,406组资源，接待用户访问逾10亿人次，服务超过200个国家和地区，26.01%来自发达和中等以上发达国家，73.99%来自发展中国家。科学数据银行开放共享的数据集可应用于与联合国可持续发展目标相关的科研创新，目前下载排名前二十的开放数据集可应用于与SDG2.4、SDG3.4、SDG3.8、SDG11.6、SDG13.3、SDG15.3等相关的科研创新。

ScienceDB has opened over 15,026,406 resources in line with international standards, receiving more than 1 billion user visits. Of these visits, 26.01% come from developed and upper-middle-income countries and 73.99% from developing countries. Scientific knowledge shared by ScienceDB can be discovered for research related to the implementation of Sustainable Development Goals (SDGs). For instance, top 20 downloaded open datasets can be reused to support scientific research related to SDG 2.4, SDG 3.4, SDG 3.8, SDG 11.6, SDG 13.3 and SDG 15.3, with open reuse statistics and citation records.



▲ 科学数据银行服务情况总览
Science Data Bank service overview



▲ 《中国开放数据白皮书》系列年度报告
The State of Open Data in China series of annual reports

IIOE国家中心的本地化机制弥合AI时代产学人才培养

Bridging the talent cultivation gap for industry-academia cooperation in the AI era - the IIOE national center localization mechanism



▲ 发起成立国际网络教育学院（IIOE）
The initiation of the International Institute of Online Education

申报机构
Applying Institution

联合国教科文组织高等教育创新中心（中国深圳）
International Centre for Higher Education Innovation under the auspices of UNESCO (Shenzhen, China)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖巴基斯坦、赞比亚、蒙古国、马来西亚、印度尼西亚、尼日利亚等17个国家和地区
Covering 17 countries and regions including Pakistan, Zambia, Mongolia, Malaysia, Indonesia, and Nigeria

联合国教科文组织高等教育创新中心以IIOE国家中心为支点，将全球数字与AI能力建设资源转化为适应各国发展和高校需求的本地方案，提升教师能力、衔接人才培养与产业升级，为全球南方共享数字经济机遇、实现包容性增长提供可鉴路径。

Using the IIOE National Centers as local anchors, the International Centre for Higher Education Innovation under the auspices of UNESCO (UNESCO-ICHEI) transforms global resources for digital and AI capacity-building into locally adapted solutions aligned with national development priorities and the needs of higher education institutions. By strengthening educators' capabilities and aligning talent development with industrial upgrading, this model enables countries across the Global South to participate in opportunities created by the digital economy and pursue inclusive growth.

IIOE生态联盟链接技术赋能需求

The IIOE Ecosystem Connects Global Resources with Local Capacity-Building Needs

人工智能（AI）加速迭代和产业转型，正重塑高等教育与人才培养，对高等教育工作者的数字素养和AI应用能力提出新要求。由于各国在政策环境、数字基础设施、教师能力、语言文化和产业发展阶段等方面存在差异，能力建设需立足于本地需求。2019年12月，联合国教科文组织高等教育创新中心联合全球伙伴发起国际网络教育学院（IIOE），构建集在线学习平台、微证书课程与培训、伙伴网络和政策协调于一体的全球生态联盟。截至2026年8月，IIOE已覆盖54个国家、200余所高校和40余家企业，并在17个国家与伙伴院校联合设立IIOE国家中心，推动全球优质教育资源融入各国高等教育数字化转型实践。

Rapid advances in artificial intelligence (AI) and ongoing industrial transformation are reshaping higher education and talent development, creating new requirements for higher education professionals' digital literacy and capacity to apply AI. As countries differ in their policy environments, digital infrastructure, educators' existing capabilities, languages and cultures, and stages of industrial development, capacity-building must be grounded in local needs.

In December 2019, UNESCO-ICHEI and its global partners launched the International Institute of Online Education (IIOE), establishing a global ecosystem alliance that integrates an online learning platform, Micro-certification courses and training programmes, a collaborative partner network, and policy coordination mechanisms. As of August 2026, IIOE spanned 54 countries, more than 200 higher education institutions and over 40 corporate partners. It had also jointly established IIOE National Centers with partner institutions in 17 countries, facilitating the integration of high-quality global educational resources into national higher education digital transformation practices.



IIOE 国家中心全球分布情况
IIOE National Centres Worldwide

全球共享，本地适配

Global Sharing and Local Adaptation

IIOE形成了“全球共建、本地适配”的实施路径。创新中心持续整合全球优质教育资源，形成涵盖“高校教师数字能力”“高校教师生成式AI”“AI+学科”和“AI+产业”的课程体系；各IIOE国家中心则在所在国高等教育主管部门支持下，构建全国性高校网络，对IIOE课程内容、培训方式、认证机制进行本地化设计和运营实施，提升高等教育工作者的数字素养与AI应用能力。

例如，IIOE埃及国家中心（艾因夏姆斯大学）与创新中心联合开发4门微证书课程，通过覆盖全国26所高校的合作网络累计赋能高等教育工作者逾4000人次，并将相关培训纳入教师发展与职称晋升框架；IIOE蒙古国家中心（蒙古科技大学）依托IIOE平台与课程，开展全国性“培训师培训”，培养本地骨干教师，并推动相关课程纳入硕士生培养计划。

IIOE has developed an implementation model based on global joint development and local adaptation. UNESCO-ICHEI continuously brings together high-quality educational resources from around the world and has developed a course system encompassing four areas: “Higher Education Teaching Personnel Digital Competency” “GenAI for Higher Education Professionals” “AI + Discipline” and “AI + Industry”. With support from the relevant national ministries and authorities overseeing higher education, each IIOE National Centre builds a nationwide network of higher education institutions and adapts the content, training modes and certification mechanisms of IIOE courses to local contexts. The National Centers also oversee delivery and operation, helping higher education professionals strengthen their digital literacy and AI application capacity.

For example, the IIOE Egypt National Centre at Ain Shams University has jointly developed four Micro-certification courses with UNESCO-ICHEI. Through a collaborative network spanning 26 universities nationwide, it has trained over 4,000 higher education professionals. It also led the integration of the training into the university's framework for faculty development and academic promotion. The IIOE Mongolia National Centre at the Mongolian University of Science and Technology has used the IIOE platform and courses to deliver nationwide Training of Trainers programmes, cultivate a cohort of local lead educators, and promote the incorporation of relevant courses into master's degree programmes.



▲ IIOE埃及国家中心团队
IIOE Egypt National Centre Team



▲ IIOE埃及国家中心网络
The Network of the IIOE Egypt National Centre

实现培训规模化、制度化、体系化发展

Scaling Up Training through Institutionalised Systems

截至2026年8月，IIOE在线学习平台注册用户超过2.7万人，累计上线课程700余门；IIOE课程与培训已触达全球135个国家和地区，累计赋能高等教育工作者逾40万人次。IIOE国家中心已将IIOE微证书培训纳入埃及、埃塞俄比亚、蒙古国等国伙伴院校的教师职业发展培训体系，实现本地认证，将数字与AI能力建设嵌入教师职业发展制度。

IIOE联合行业协会、企业与高校开发“AI+跨境电商”“AI+生命科学”“AI+农业科技”等“AI+产业”微证书项目，并面向当地产业和人才发展需求，通过IIOE国家中心实施试点项目，助力高校及时更新人才培养资源与模式，为数字经济发展和产业升级培养复合型人才。

As of August 2026, the IIOE online learning platform had more than 27,000 registered users and offered more than 700 courses. IIOE courses and training programmes have reached over 400,000 higher education professionals across 135 countries and areas worldwide. In countries including Egypt, Ethiopia, Mongolia, the IIOE National Centres have integrated IIOE Micro-certification training into the faculty professional development systems of partner institutions, certification are recognized locally, embedding digital and AI capacity-building within institutional frameworks for educators’ professional development.

IIOE also works with industry associations, enterprises and higher education institutions to develop “AI + Industry” Micro-certification programmes in areas such as “AI + Cross-border E-commerce”, “AI + Life Sciences” and “AI + Agricultural Technology”. Responding to local industry and talent development needs, the IIOE National Centres implement pilot programmes that help higher education institutions update their talent development resources and models, while cultivating interdisciplinary professionals equipped to contribute to the digital economy and industrial upgrading.



▲ IIOE 蒙古国家中心发布微证书项目
IIOE Mongolia National Centre introduces the micro-certification project



▲ IIOE马来西亚国家中心共建AI+农业科技微证书
IIOE Malaysia National Centre jointly develops the AI+AgriTech Micro-certification Programme

多边合作、互惠共赢

Multilateral Cooperation and Shared Benefits

创新中心与IIOE国家中心探索形成的本地化实施模式，为全球南方国家开展高等教育工作者数字化与AI能力建设提供了可借鉴、可复制的解决方案。这一做法让更多教师共享和应用优质数字教育资源，将数字化与AI能力转化为教学改革实践，进而带动学生能力提升，培养契合产业发展需求的高素质人才。IIOE开创了多元文化背景下教育南南合作与多边合作的新路径，为全球南方国家高等教育数智化发展和人才培养注入动能，有力支撑联合国可持续发展目标4（SDG4）的落实，推动包容、公平和高质量教育发展。

The locally adapted implementation model developed by UNESCO-ICHEI and the IIOE National Centers demonstrates a practical and replicable solution for strengthening the digital and AI competencies of higher education professionals of the Global South. It enables more educators to access and apply high-quality digital education resources and translate their digital and AI capabilities into teaching innovation. These improvements can, in turn, strengthen students’ competencies and support the development of highly skilled talent aligned with evolving industry needs.

IIOE has opened new pathways for South–South and multilateral cooperation in education across diverse cultural contexts. It provides fresh impetus for the digital and AI-enabled transformation of higher education and talent development across the Global South, supports progress toward United Nations Sustainable Development Goal 4 (SDG 4), and advances inclusive and equitable quality education.



▲ IIOE尼日利亚国家中心开展教师AI能力建设培训
IIOE Nigeria National Centre conducts teacher AI competency training

全球智慧农业教育共同体——数字技术赋能跨国农业人才培养与智慧农业合作

Global Smart Agriculture Education Community — Digital Technology Empowering Transnational Agricultural Talent Cultivation and Smart Agriculture Cooperation



▲ 全球智慧农业可持续发展实践路径
Global Smart Agriculture Sustainable Development Practice Pathways

申报机构
Applying Institution

南京农业大学
Nanjing Agricultural University

其他参与机构
Other Participating Organizations

泰国清迈大学、印度尼西亚茂物农业大学、肯尼亚埃格顿大学、法国 SynTech Research 集团、托普云农、老挝国家农林研究院、炫烨(老挝)有限公司

Chiang Mai University, IPB University, Egerton University, SynTech Research Group, Top Cloud-Agri, Lao National Agriculture and Forestry Research Institute, Xuanye (Laos) Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、泰国、老挝、印度尼西亚、菲律宾等17个国家和地区
Covering 17 countries and regions, including China, Thailand, Laos, Indonesia, and the Philippines

数字技术正深刻重塑全球农业，但发展中国家在智慧农业普及与人才培养方面面临鸿沟。2023年，南京农业大学发起“全球智慧农业教育共同体”，以数字技术为纽带，搭建跨国科教合作平台，助力全球农业可持续发展。

Digital technology is profoundly reshaping global agriculture, but developing countries face a gap in the popularization of smart agriculture and in talent cultivation. In 2023, Nanjing Agricultural University initiated the "Global Smart Agriculture Education Community", using digital technology as a link to build a cross-border science and education cooperation platform, contributing to the sustainable development of global agriculture.

四位一体构建全球智慧农业教育网络
Four Platforms to Build a Global Smart Agriculture Education Network

作为中国近现代高等农业教育的先驱，南京农业大学，于2023年7月发起成立亚洲农业科教创新联盟，汇聚17国81家机构，整合四大支柱协同推进全球智慧农业教育共同体建设。

2025年11月，亚洲农业科教创新联盟年会在印尼茂物举办，年会上发布东南亚智慧农业合作倡议，推动区域农业数字化转型。2025年11月，南农与肯尼亚埃格顿大学孔子学院共同发起全球农业特色孔子学院联盟，首批23个成员，共同构建“课程、文化、平台、培训”四位一体体系，输出中国智慧农业技术标准与实践经验至非洲等发展中国家。中法农业与人工智能合作平台与法国SynTech Research签署协议，共建表型研究院，高通量表型分析平台获CISILE 2024金奖。中老数字农业合作项目依托“中老大豆联合研究中心”，利用多源遥感与物联网技术开展作物监测评估，首批3名老挝研究生已入学参与智能育种研究。

As a pioneer in modern higher agricultural education in China, Nanjing Agricultural University (NAU) initiated the establishment of the Consortium for Innovations in Agricultural Education and Research in Asia (CIAERA) in July 2023. This Consortium brings together 81 institutions from 17 countries to co-build a Global Smart Agriculture Education Community, integrating joint efforts from four platforms as follows.

In November 2025, the Annual Meeting of CIAERA was held in Bogor, Indonesia. During the meeting, the Southeast Asia Smart Agriculture Cooperation Initiative was launched, aiming to promote the digital transformation of agriculture in the region. Also in November 2025, NAU and the Confucius Institute at Egerton University in Kenya jointly initiated the Global Alliance of Confucius Institutes with Agricultural Characteristics, with 23 founding members. The alliance will build a "curriculum, culture, platform, and training" four-in-one system, exporting China's smart agricultural technology standards and practical experience to developing countries in Africa and beyond.

The China-France Agricultural and Artificial Intelligence Cooperation Platform signed an agreement with SynTech Research France to jointly build a phenotyping research institute, with its high-throughput phenotyping analysis platform winning the CISILE 2024 Gold Award. The China-Laos Digital Agriculture Cooperation Project, based at the "Sino-Laos Soybean Joint Research Center", utilizes multi-source remote sensing and Internet of Things (IoT) technology for crop monitoring and assessment. The first cohort of three Lao graduate students has enrolled and is participating in intelligent breeding research.



▲ 亚洲农业科教创新联盟:引领区域数字教育合作
Consortium for Innovations in Agricultural Education and Research in Asia (CIAERA): Leading Regional Digital Education Cooperation



▲ 全球农业特色孔子学院联盟揭牌仪式
Unveiling Ceremony for the Global Alliance of Confucius Institutes with Agricultural Characteristics

数智技术重塑全球农业科教合作新范式

Digital Intelligence Technology Reshapes the New Paradigm of Global Agricultural Science and Education Cooperation

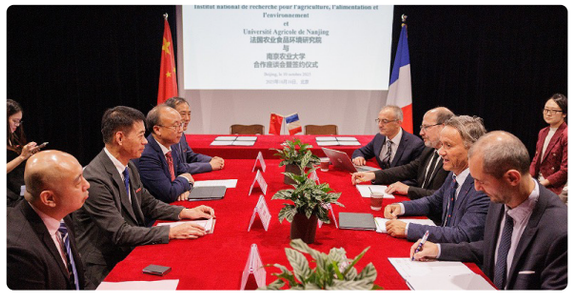
学校构建超40亿词元的农业专业数据集，以“司农2.0”大模型矩阵为底座，集成“问梨”、“绿盾”、“问豆”等模型，为农业知识服务与应用创新提供技术支撑。依托孔子学院联盟，面向发展中国家推广“中文+农业”特色数字教育模式，输出中国智慧农业技术标准与实践经验；中法围绕作物表型与人工智能开展合作研究，中老依托大豆联合研究中心利用遥感与物联网技术开展作物监测评估，形成“技术+人才”双输出模式——以数智技术提供智慧农业解决方案的同时培养当地数智化人才，实现科技创新与人才培育协同驱动。

NAU has built an agricultural professional dataset exceeding 4 billion tokens, based on the “Sinong 2.0” large model matrix, integrating models such as “Wenli”, “Lvidun” and “Wendou”, to provide technical support for agricultural knowledge services and application innovation. Leveraging the Global Alliance of Confucius Institutes with Agricultural Characteristics, it promotes a “Chinese + Agriculture” specialized digital education model for developing countries, exporting Chinese smart agriculture technology standards and practical experience.

China and France are conducting collaborative research on crop phenotyping and artificial intelligence. China and Laos, through the Soybean Joint Research Center, are using remote sensing and IoT technology for crop monitoring and assessment, forming a“technology + talent” dual output model—providing smart agriculture solutions with digital intelligence technology while cultivating local digital intelligence talent, achieving synergistic drive between technological innovation and talent development.



◀ “司农 2.0”大模型矩阵
The “Sinong 2.0” large model matrix



◀ 中法农业与人工智能合作 : 共筑智慧农业新生态
China-France Cooperation in Agriculture and AI: Building a New Smart Agriculture Ecosystem

数字教育平台推动技术与人才全球共享

Digital Education Platforms Promote Global Sharing of Technology and Talent

共同体依托联盟年会、数字教育分论坛、国际大学生创新大赛非洲区域赛（115所高校、559名学生参赛）等常态化机制深化合作。技术普惠层面，中老项目为老挝、缅甸提供作物智能评估服务，大豆新品种亩产224.4公斤，较当地增产112.2%；中泰水稻物联网技术正在清迈部署推广。数字教育共享平台已覆盖17国81家机构，联动23家孔子学院联盟单位；该成果已入选2026世界数字教育大会“国际合作”版块。举办“人工智能+教育”培训班，60余名全球专家和学员学习AI赋能农业教育实践。

The Global Smart Agriculture Education Community deepens cooperation through regular mechanisms such as the CIAERA Annual Meeting, the Digital Education Sub-forum, and the African Division Contest of China International College Students' Innovation Competition (with 115 universities and 559 students participating).

In terms of technology service, the China-Laos project provides intelligent crop assessment services for Laos and Myanmar, with new soybean varieties yielding 224.4 kg per mu, a 112.2% increase compared to local yields. The China-Thailand rice IoT technology is being deployed and promoted in Chiang Mai. The digital education sharing platform now covers 81 institutions in 17 countries and collaborates with 23 members of the Global Alliance of Confucius Institutes with Agricultural Characteristics. This achievement has been selected for the "International Cooperation" section of the 2026 World Digital Education Conference.

A training course on "Artificial Intelligence + Education" was held, where over 60 international experts and students learned about AI empowering agricultural education practices.



中国国际大学生创新大赛 (2025) 非洲区域赛决赛
China International College Students' Innovation Competition 2025 Africa Regional Finals



2026 年涉农高校“人工智能 + 教育”技术应用培训班
2026 Training Program on "AI + Education" Technology Application for Agriculture-Focused Universities

弥合数字鸿沟，赋能全球农业可持续发展

Bridging the Digital Gap and Empowering the Sustainable Development of Global Agriculture

共同体以数字技术促进农业知识共享与能力共建，探索面向全球的农业普惠发展路径，打通智能农业技术普惠“最后一公里”。三大平台贯通联动——信息采集平台构建可持续更新的数据底座，科研平台融合知识图谱与多智能体协作提升研究效率，教育平台系统整合农业知识——形成“数据驱动科研、科研反哺教育、教育培育人才、人才服务农业”的良性循环，为促进全球农业可持续发展提供可推广的实践路径，助力实现联合国2030年可持续发展议程中“零饥饿”“优质教育”等目标。

The Global Smart Agriculture Education Community leverages digital technology to promote agricultural knowledge sharing and capacity building, exploring a globally inclusive path for agricultural development and bridging the "last mile" of smart agricultural technology accessibility.

Three major platforms operate in an interconnected manner — the information collection platform builds a sustainably updatable data foundation, the research platform integrates knowledge graphs with multi-agent collaboration to enhance research efficiency, and the education platform systematically consolidates agricultural knowledge — forming a virtuous cycle of "data driving research, research feeding education, education cultivating talent, and talent serving agriculture". This provides a replicable practical pathway for promoting sustainable global agricultural development and contributes to achieving the United Nations 2030 Agenda for Sustainable Development goals, including "Zero Hunger" and "Quality Education".

瑞士巴塞尔创新园：欧洲生命科学前沿与全球创新生态的国际化连接与加速平台

Switzerland Innovation Park Basel Area: An International Platform Connecting Europe's Life-Science Frontier with Global Innovation Ecosystems



▲ 瑞士巴塞尔创新园主园区沿街实景，呈现三国交界处为生命科学企业准备的国际化物理载体。
Street view of the Main Campus of Switzerland Innovation Park Basel Area, the physical host for international life-science firms at a tri-border location.

申报机构
Applying Institution

瑞士巴塞尔创新园
Switzerland Innovation Park Basel Area

其他参与机构
Other Participating Organizations

Basel Area Business & Innovation（运营方）、巴塞尔大学、苏黎世联邦理工学院（ETH Zurich）、诺华(Novartis)、罗氏(Roche)、强生(Johnson & Johnson)、BD(碧迪医疗)、CSEM 瑞士电子与微技术中心、Fondation Botnar、BaseLaunch 加速器、DayOne 加速器、Herzog & de Meuron 建筑事务所

Basel Area Business & Innovation, University of Basel, ETH Zurich, Novartis, Roche, Johnson & Johnson, BD (Becton, Dickinson), CSEM, Fondation Botnar, BaseLaunch, DayOne Accelerator, Herzog & de Meuron

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖瑞士、德国、法国、美国、芬兰等10个国家和地区
Covering 10 countries and regions including Switzerland, Germany, France, the United States, and Finland

全球生命科学创新仍面临研发成本高、跨学科协作难、初创企业资源有限等约束。瑞士巴塞尔创新园打造物理空间与数字平台相融合的国际化载体，将欧洲生命科学前沿与全球创新网络相对接，推动学术机构、跨国药企、初创企业与资本高效协同。

Life-science innovation worldwide still faces high R&D costs, difficult cross-disciplinary collaboration and scarce resources for startups. Switzerland Innovation Park Basel Area combines physical space with a digital platform to connect Europe's life-science frontier with global innovation networks, enabling academic institutions, multinational pharmaceutical companies, startups and capital to work together more efficiently.

十国协同的生命科学国际化加速网络

A Ten-Country International Acceleration Network for the Life Sciences

瑞士巴塞尔创新园由Basel Area Business & Innovation运营，设有四个站点，位于瑞士、法国、德国三国交界地带。美国波士顿的Skyhawk Therapeutics入驻共享实验室开展RNA靶向小分子研究，BD在主园区设立创新基地；芬兰UPM Biomedicals建立细胞实验室；在BaseLaunch支持下，SunRegen Healthcare推进神经退行性疾病疗法研发；Botnar免疫工程研究所落户巴塞尔，并规划与牛津大学等机构合作。2024年，园区新入驻26家生命科学企业，来自16个国家。

Operated by Basel Area Business & Innovation, the park comprises four sites at the Switzerland–France–Germany tri-border. Boston-based Skyhawk Therapeutics uses shared laboratories for RNA-targeting small molecules, and BD has set up an innovation base on the Main Campus; Finland's UPM Biomedicals has established a cell laboratory; SunRegen Healthcare is developing therapies for neurodegenerative disease with BaseLaunch support; and the Botnar Institute of Immune Engineering has chosen Basel, with planned collaboration including the University of Oxford. In 2024, 26 life-science companies from 16 countries joined the park.



▲ 来自不同国家的专业人士在园区入口交流，对应2024年16国企业入驻所形成的国际化社区。
Professionals from different countries converse at the campus entrance, corresponding to the international community formed by companies from 16 countries in 2024.

物理空间与数字平台融合的加速实施路径

An Acceleration Pathway Integrating Physical Space and a Digital Platform

本案例的核心创新，在于构建"顶尖学术—跨国药企—初创加速—全球资本—数字协同"的闭环生态。主园区由Herzog & de Meuron设计，提供约5万平方米互联协作空间，配置BSL-2实验室、共享实验台与灵活办公，使早期企业不必先自建高成本设施。BaseLaunch（投资组合累计融资超过10亿美元）、DayOne与i4Challenge等加速机制，为不同阶段企业提供针对性支持。数字层面，专属社区平台连接瑞士六大创新园、16个站点的入驻企业与研究人员；学术层面，巴塞尔大学生物医学工程、苏黎世联邦理工学院D-BSSE、CSEM等机构入驻或紧密协作，形成"楼上研究、楼下创业"的转化结构。物理空间、加速器和数字网络因此被写成同一套实施路径。

The case's core innovation is a closed ecosystem linking leading academia, multinational pharmaceutical companies, startup acceleration, global capital and digital coordination. The Main Campus, designed by Herzog & de Meuron, provides about 50,000 square metres of connected space, including BSL-2 laboratories and shared benches, so early firms need not first build high-cost facilities. BaseLaunch (portfolio financing of more than USD 1 billion), DayOne and i4Challenge support firms at different stages. A digital community platform links resident companies across six Swiss innovation parks and 16 sites, while the University of Basel, ETH Zurich D-BSSE and CSEM enable a "research upstairs, venture downstairs" translation model. Physical space, accelerators, and the digital network are therefore written as one implementation path.



▲ 加速器场景中的多国团队工作会议，体现BaseLaunch等机制对初创企业的陪伴式支持。
A multinational working session in an accelerator setting, illustrating hands-on support provided by mechanisms such as BaseLaunch.



▲ 创业团队与顾问面对面沟通，呈现园区"定制化加速+专业辅导"的实施路径。
Founders in a mentoring conversation, showing the park's pathway of tailored acceleration and professional coaching.

面向全球的普惠价值与生命科学创新范式

Inclusive Global Value and a Life-Science Innovation Paradigm

Botnar免疫工程研究所获得约15亿美元捐赠，规划汇聚约300名专业人员，面向儿童与青少年开发免疫诊断与治疗方案，使园区的公共价值直接落到健康公平。T3 Pharma被勃林格殷格翰以4.5亿瑞士法郎收购，从市场端验证了园区转化模式。共享实验室降低了初创企业的起步成本，使资源有限的中小企业能够使用国际级研发设施；诺华园区等向外部初创企业开放，有助于打破大型药企与新创团队之间的壁垒。由此形成“顶尖学术+跨国产业+初创加速+数字协同”的完整实践结构，其可复制之处在于：用共享设施和开放校园，把原本只有大型机构才进得去的研发条件，部分开放给更早阶段的团队。

The Botnar Institute of Immune Engineering received a donation of about USD 1.5 billion and plans to bring together some 300 staff to develop immune diagnostics and therapies for children and young people, placing the park’s public value directly in health equity. The acquisition of T3 Pharma by Boehringer Ingelheim for CHF 450 million is market validation of the translation model. Shared laboratories lower start-up costs so that resource-constrained SMEs can use international-grade facilities; opening campuses such as Novartis to external ventures helps reduce barriers between large pharmaceutical companies and startups. The complete structure of academia, multinational industry, venture acceleration and digital coordination is replicable because shared facilities and open campuses give earlier-stage teams partial access to research conditions that once belonged only to large institutions.



▲ 园区及周边城市创新景观中的交流瞬间，象征生命科学成果走向更广泛社会与国际网络。
A conversation against Basel’s innovation landscape, symbolizing the movement of life-science outcomes into a wider civic and international network.

数字技术赋能全价值链碳中和——博世推动全球产业链绿色转型

Digital Technologies Empower Carbon Neutrality Across the Value Chain - Bosch Driving the Green Transformation of Global Supply Chains



▲ 数字技术已深度融入博世全价值链的每一个环节
Digital technologies are deeply integrated into every aspect of Bosch’s value chain.

申报机构
Applying Institution

博世（中国）投资有限公司
Bosch (China) Investment Ltd.

罗伯特·博世有限公司
Robert Bosch GmbH

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、德国、法国、美国、巴西、日本、印度、马来西亚等60多个国家和地区
Covering more than 60 countries and regions, including China, Germany, France, the United States, Brazil, Japan, India, and Malaysia

在全球气候变化与数字经济快速发展的背景下，绿色化与数字化协同转型已成为全球产业发展的重要趋势。面对供应链碳管理复杂、跨区域协同难度高等挑战，博世依托AI、工业物联网、云计算等数字技术，将减碳行动从企业运营延伸至全球价值链，探索数字技术驱动产业链绿色转型的新路径，为全球可持续发展提供创新实践。

Against the dual backdrop of global climate change and the rapid expansion of the digital economy, the synergistic transition toward green and digital development has emerged as a defining trend in global industries. Addressing complex challenges — such as intricate supply chain carbon management and the hurdles of cross-regional coordination — Bosch leverages digital technologies, including AI, Industrial IoT, and cloud computing. By extending its decarbonization initiatives from in-house operations to the broader global value chain, Bosch explores novel pathways to drive the green transformation of industrial ecosystems through digital innovation, thereby establishing a benchmark for global sustainable development.

以数字化赋能全球价值链碳中和：博世实践
Digitalizing the Global Value Chain for Carbon Neutrality: The Bosch Approach

作为业务遍及全球的科技企业，博世将数字技术深度融入碳管理体系建设，推动全球产业链协同减碳。博世在约60个国家设有分支机构，业务网络覆盖约150个国家和地区。通过标准化数据和数字化管理平台，实现能源、物流及供应链碳排放数据的实时采集与管理。自2018年以来，博世价值链间接碳排放减少约34%，2020年已在全球470多个业务所在地区实现自身运营直接碳排放的碳中和。在供应链协同方面，博世推动全球供应商通过数字平台开展碳数据披露，已邀请超过4500家供应商参与。博世已在全球启动超过8,500个能源效率项目，通过数字化能源管理、可再生能源利用和生产运营优化等措施持续降低能源消耗，并将能源效率作为实现碳中和的重要抓手。

As a technology enterprise with global operations, Bosch has deeply integrated digital technology into its carbon management system construction, promoting collaborative carbon reduction across the global industrial chain. Bosch has branches in approximately 60 countries, with its business network covering around 150 countries and regions. Through standardized data and digital management platforms, it achieves real-time collection and management of energy, logistics, and supply chain carbon emission data. Since 2018, Bosch has reduced indirect carbon emissions in its value chain by approximately 34%, and by 2020, it had achieved carbon neutrality for direct carbon emissions from its own operations in over 470 business locations worldwide. In terms of supply chain collaboration, Bosch has encouraged global suppliers to disclose carbon data through digital platforms, with over 4,500 suppliers having participated. Bosch has initiated more than 8,500 energy efficiency projects globally, continuously reducing energy consumption through measures such as digital energy management, renewable energy utilization, and production and operation optimization, and regards energy efficiency as a crucial aspect in achieving carbon neutrality.



▲ 2025年10月30日，作为中国德国商会环境、社会、治理（ESG）日活动的重要组成部分，年度“同心 同力 同行”奖颁奖典礼成功举办。博世中国凭借"合作共赢，共筑可持续未来"项目脱颖而出，荣膺"供应链协作"类别大奖。该奖项充分肯定了博世中国作为链主企业在推动全价值链可持续发展中的积极作用。
On October 30, 2025, as a key highlight of the German Chamber of Commerce in China's ESG Day, the annual "Shared Vision, Shared Strength, Shared Journey" Award ceremony was successfully held. Bosch China stood out with its project "Win-Win Cooperation for a Sustainable Future" and was honored with the top prize in the "Supply Chain Collaboration" category. This award fully recognizes Bosch China's proactive role as an anchor enterprise in driving sustainable development across its entire value chain.

促进覆盖全球供应链的数字化碳管理体系

Promoting a Digital Carbon Management System Across Global Supply Chains

博世充分发挥人工智能、工业物联网、边缘计算和智能传感等技术优势，构建覆盖生产、能源和运营环节的数字化低碳解决方案。通过部署智能感知设备和数据分析平台，实现能源消耗实时监测与动态优化。例如，在某制造基地，人工智能能源优化项目实现设备能耗下降10%；在另一座灯塔工厂，通过整合天气数据、生产计划和历史运行数据，利用边缘计算优化能源系统运行，实现电力消耗下降18%、生产碳排放降低14%。同时，博世积极探索量子传感器和量子计算材料模拟等前沿技术在绿色发展中的应用，通过数字技术加速新材料研发和产业化进程。相关实践不仅提高了资源利用效率，也形成了标准化、模块化解决方案，可根据不同行业和地区需求快速推广。

Bosch fully leverages its technological advantages in artificial intelligence, industrial IoT, edge computing, and intelligent sensing to build digital low-carbon solutions covering production, energy, and operational processes. By deploying intelligent sensing devices and data analysis platforms, real-time monitoring and dynamic optimization of energy consumption are achieved. For example, in a manufacturing base, the artificial intelligence energy optimization project achieved a 10% reduction in equipment energy consumption; in another lighthouse factory, by integrating weather data, production plans, and historical operational data, edge computing was utilized to optimize energy system operations, resulting in an 18% reduction in electricity consumption and a 14% reduction in production carbon emissions. At the same time, Bosch actively explores the application of cutting-edge technologies such as quantum sensors and quantum computing material simulation in green development, accelerating the research and development of new materials and the industrialization process through digital technology. These practices not only improve resource utilization efficiency but also form standardized, modular solutions that can be quickly promoted according to the needs of different industries and regions.





▲ 公开透明的报告和数据 - 博世在官方网站上公布详细的可持续发展报告和数据情况。
Transparent Reporting and Data — Bosch publishes detailed sustainability reports and data on its official website.

以开放共享生态促进全球绿色发展成果普惠

Promoting Inclusive Green Development Through an Open and Collaborative Ecosystem

博世坚持“技术创新+生态协同”双轮驱动，推动数字化绿色转型成果惠及更多产业主体。围绕碳数据管理、减排能力建设和绿色供应链治理，博世建立覆盖培训、评估、激励和数据共享的协同机制，帮助合作伙伴特别是中小企业提升数字化减碳能力。通过统一的数据标准和数字工具，企业能够以更低成本开展碳排放核算、目标管理和减排行动，降低绿色转型门槛。通过开放技术能力、共享实践经验和深化国际合作，博世为产业链伙伴提供可负担、可复制、可推广的减碳路径，提升全球供应链透明度和可持续发展能力，为全球数字化绿色化协同转型贡献实践经验。

Bosch follows a dual approach of technological innovation and ecosystem collaboration to make the benefits of digital green transformation accessible to a broader range of stakeholders. Through initiatives covering carbon data management, emissions reduction capability building, and green supply chain governance, Bosch has established collaborative mechanisms for training, assessment, incentives, and data sharing, helping partners—especially small and medium-sized enterprises (SMEs)—strengthen their digital decarbonization capabilities. By providing standardized data frameworks and digital tools, Bosch helps lower barriers to green transformation. Through technology sharing, knowledge exchange, and international cooperation, Bosch provides supply chain partners with affordable, scalable, and replicable decarbonization pathways. These efforts enhance supply chain transparency and sustainability while contributing practical experience to the global transition toward coordinated digital and green development.



▲ 2025年7月11日，在由中国汽车工业协会主办的2025中国汽车论坛上，博世中国成功入选中国汽车工业协会中国汽车行业可持续发展实践案例集，荣获“责任引领”、“绿色发展”和“合作共赢”三项荣誉，全面彰显其在治理机制、循环经济以及绿色供应链协同减碳机制方面的标杆示范作用。
On July 11, 2025, at the 2025 China Auto Forum hosted by the China Association of Automobile Manufacturers (CAAM), Bosch China was selected for CAAM's Sustainable Development Practice Case Collection for China's Automotive Industry, winning three honors: "Responsibility Leadership", "Green Development", and "Win-Win Cooperation". This achievement demonstrates Bosch China's benchmark role in corporate governance, circular economy, and green supply chain collaborative decarbonization.

全球发展项目库“数字南方”品牌

Global Development Project Pool Digital South Initiative



▲ 2026年4月22日，全球共享发展行动论坛第三届高级别会议在京举办。会议设置“数字南方”体验空间，以技术案例和沉浸式互动系统展示中国数字技术赋能全球南方高质量发展的实践路径和合作模式。
On 22 April 2026, the Third High-Level Conference of the Forum on Global Action for Shared Development was held in Beijing. The conference featured a Digital South Experience Space, which showcased practical pathways and cooperation models for Chinese digital technologies to empower high quality development in the Global South through technical case studies and immersive interactive systems.

申报机构
Applying Institution

中国国家国际发展合作署
China International Development and Cooperation Agency (CIDCA)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖巴基斯坦、冈比亚、古巴、斐济等全球南方国家和地区
Covering Global South countries and regions, including Pakistan, Gambia, Cuba, and Fiji

全球南方群体性崛起重塑全球数字格局，庞大的人口基数、快速增长的互联网普及率，以及在医疗、教育、农业等领域数字化的强烈需求，使全球南方成为新一轮数字创新与应用发展的核心区域。2024年9月，联合国未来峰会正式通过“全球数字契约”，强调发展优先、普惠包容、创新驱动等，与全球发展倡议理念相通。2025年7月，中国国务院总理李强宣布，中国将在全球发展倡议框架下打造“数字南方”品牌，未来5年为南方国家开展200期数字经济与人工智能培训项目；9月，李强总理宣布中国将在全球发展资金库项下设立“数字能力建设专项资金”，支持全球发展倡议“数字南方”品牌。

The collective rise of the Global South is reshaping the global digital landscape. Its vast population base, rapidly growing internet penetration rate, and strong demand for digitalization in sectors such as healthcare, education, and agriculture position the Global South as a core region for the next wave of digital innovation and application development.In September 2024, the Global Digital Compact was officially adopted at the UN Summit of the Future. The compact underlines development as a priority, universal benefit and inclusiveness, innovation-driven development. These principles have much in common with the visions of China's Global Development Initiative (GDI).

In July 2025, Chinese Premier Li Qiang announced that China will create an initiative for digital development of the Global South within the framework of the Global Development Initiative, with a plan to offer 200 training programs in digital economy and artificial intelligence for Global South countries over the next five years. In September of the same year, Premier Li Qiang further announced that over the next five years, China will establish a funding program dedicated to digital capacity-building within the Global Development Capital Pool to support the "Digital South" initiative under the GDI.

用好平台载体，深化国际交流
Leveraging Platforms and Vehicles to Deepen International Exchanges

发挥品牌引领作用，积极依托数字领域多维国际合作平台载体，打造宣介窗口、成果阵地与合作桥梁。比如，在全球共享发展行动论坛第三届高级别会议期间，举办“数字赋能全球南方高质量发展”分论坛，创新打造“数字南方”体验空间，签署人才培养合作备忘录，面向非洲推进人才培训与项目落地。建设中非数字技术合作中心、联合国工业发展组织全球工业人工智能联盟卓越中心，开展全球发展青年领袖之家“数字时代的青年责任”主题世界行活动，促进政策对话、能力建设与联合行动，推动更多数字领域国际合作。

Giving play to the guiding role of the initiative, we draw on diverse international cooperation platforms in the digital domain to build communication windows, outcome showcase platforms and cooperation bridges. For example, during the Third High Level Conference of the Forum on Global Action for Shared Development, the sub forum on “Digital enabled High Quality Development for the Global South”was convened. The innovative Digital South Experience Space was launched, and a Memorandum of Understanding on talent development cooperation was signed to advance talent training and project delivery for Africa. China has set up the China Africa Digital Technology Cooperation Center and the Centre of Excellence of the UNIDO Global Alliance for Industrial Artificial Intelligence. It has also carried out the world tour event themed “Youth Responsibilities in the Digital Era” under the Home for Global Development Young Leaders. These efforts facilitate policy dialogue, capacity building and joint initiatives, and generate more international cooperation in digital related fields.



▲ 2026年8月4日，全球发展青年领袖之家与联合国亚太经社会共同举办“数字时代的青年责任”圆桌对话会
On 4 August 2026, the Youth Community of Global Development went into the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) , to co-hosted the round-table dialogue themed “Youth Responsibilities in the Digital Era”.

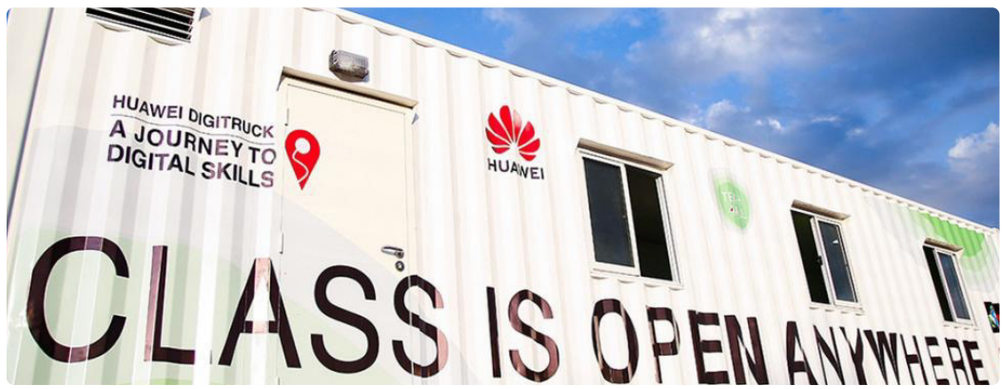
汇聚多方资源，开展务实合作

Mobilizing Multi-party Resources for Practical Cooperation

国家国际发展合作署在全球发展资金库项下设立“数字能力建设专项资金”，并动员有关部门、地方政府、企业等多方合作伙伴资金，立足各国发展阶段与现实需求，实施能力建设、规划设计、基础设施、民生应用4类项目，目前已开展科技教室、智慧医疗、智能交通、数字技能培训等多个项目。比如，依托全球发展和南南合作基金，与联合国开发计划署合作，在古巴实施“古巴数字化转型项目”，通过提供硬件设备、培训技术人员等升级相关数字基础设施，扩大服务覆盖范围、拓展服务内容、提高民众数字素养；与国际贸易中心合作，支持100家非洲中小企业约1000种产品通过电商平台扩大出口，提升非洲数字经济发展能力，加速非洲地区疫后恢复。

CIDCA has set up the Special Fund for Digital Capacity Building under the Global Development Capital Pool. It also mobilizes funds from multi-party partners including relevant government departments, local governments and enterprises. Tailored to the development stages and actual needs of respective countries, four categories of projects are implemented, namely capacity-building, planning and design, infrastructure development and livelihood-oriented applications. To date, projects including tech-enabled classrooms, smart healthcare, intelligent transportation and digital skills training have been carried out.

Under the Global Development and South South Cooperation Fund, in partnership with the United Nations Development Programme (UNDP), China has carried out the Digital Transformation Project in Cuba. By providing hardware equipment and training technical personnel, the project upgrades relevant digital infrastructure, expands service coverage, diversifies service offerings and improves public digital literacy. In cooperation with the International Trade Centre (ITC), China has supported some 1,000 product lines from 100 African small and medium sized enterprises (SMEs) to expand exports via e commerce platforms, enhancing Africa's capacity for digital driven economic development and accelerating the continent's post pandemic recovery.



▲ 华为与合作伙伴共同建立DigiTruck（数字移动课堂），为肯尼亚偏远和农村地区提供数字赋能
Huawei, together with its partners, has set up the DigiTruck (Digital Mobile Classroom) to deliver digital empowerment to remote and rural areas in Kenya.

培养数字人才，弥合南北鸿沟

Cultivating Digital Talents to Bridge the North South Divide

“数字南方”品牌项目建设不仅为广大南方国家提供当下“用得上、用得起”的数字化工具，还通过知识共享与能力共建，帮助其培育本土数字产业和人才体系，融入全球数字产供链，实现真正有自主性和有尊严的发展。一年来，国家国际发展合作署立项人工智能能力建设研讨班、全球发展倡议网络成员部级研讨班（数字主题）等数字领域人力资源开发合作项目，中方有关部委、地方政府、企业等单位开展2026国际电联（ITU）“数智融合与安全”国际培训、中国-东盟数字学院培训等数字能力建设项目，系统增强全球南方国家数字人才储备，提升本土化数字能力。

The “Digital South” initiative not only offers digital tools that are “accessible and affordable” for the broad range of Global South countries, but also fosters local digital industries and talent systems through knowledge sharing and collaborative capacity building. Ultimately, it aims to help integrate these countries into the global digital production and supply chains and realize truly autonomous and dignified development. Over the past year, CIDCA has approved multiple human resource development cooperation projects in the digital domain, including workshops on artificial intelligence capacity building and the Minister level Workshop for GDI Network Members (Digital themed). Relevant Chinese ministries, local governments, enterprises and other institutions have rolled out digital capacity building projects such as the 2026 ITU International Training on “Digital Intelligence Integration and Security” and training programs under the China ASEAN Digital Academy. These initiatives systematically build up digital talent pools for Global South countries and strengthen their home grown digital capacities.



▲ 2025年7月，全球发展促进中心网络成员研讨班学员走进科技企业探究前沿大模型成果，感受创新脉搏与产业活力
In July 2025, participants of the Workshop for Members of the Global Development Promotion Center Network visited tech enterprises to explore cutting-edge large-model breakthroughs, experiencing the pulse of innovation and the dynamism of industrial transformation.

发挥数字优势，赋能南方发展

Leveraging Digital Strengths to Empower the Development of the Global South

“数字南方”品牌聚焦全球发展倡议数字经济、数字时代互联互通两大重点合作领域，重点依托中国在数字领域的比较优势，通过赋能型国际发展合作，推动需求链接与资源整合、能力建设与知识共享、项目孵化与规则对话，支持南方国家数字化发展，推动全球南方共同繁荣。

The “Digital South” initiative focuses on two key digital cooperation areas under the GDI. Leveraging China’s comparative advantages in the digital domain, the initiative will advance demand linkage and resource integration, capacity building and knowledge sharing, as well as project incubation and dialogue on rules and standards through enabling international development cooperation. It aims to support the digital development of Global South countries and foster shared prosperity across the Global South.



▲ 斯里兰卡总理阿马拉苏里亚、中国驻斯里兰卡大使戚振宏，以及斯政府部门和在斯中企代表出席中国援助斯里兰卡普通教育数字化转型项目开工仪式
Prime Minister of Sri Lanka Amarasuriya, Chinese Ambassador to Sri Lanka Qi Zhenhong, as well as representatives from Sri Lankan government departments and Chinese-funded enterprises in Sri Lanka, attended the groundbreaking ceremony of China-Aid Digital Transformation Project of General Education in Sri Lanka.

中远海运散运供应商服务平台

Customer Supplier Transaction System (CSTS)



▲ 打通港航数字链路，深化全球航运数字化供应链建设
Connecting Ports and Shipping Through Digital Networks, Advancing the Development of a Global Digital Supply Chain

申报机构
Applying Institution

中远海运散货运输有限公司
COSCO SHIPPING BULK CO.,LTD.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖埃及、阿联酋、英国、美国、中国台湾等20余个国家和地区

Covering more than 20 countries and regions, including Egypt, the United Arab Emirates, the United Kingdom, the United States, and Taiwan, China

加速“航运+港口+物流”供应链的数字化与智能化转型进程，提升业务链上下游合作伙伴的协同效率，自2022年起，中远海运散运以共商、共建、共享理念，打造面向供应商的服务平台（CSTS）。

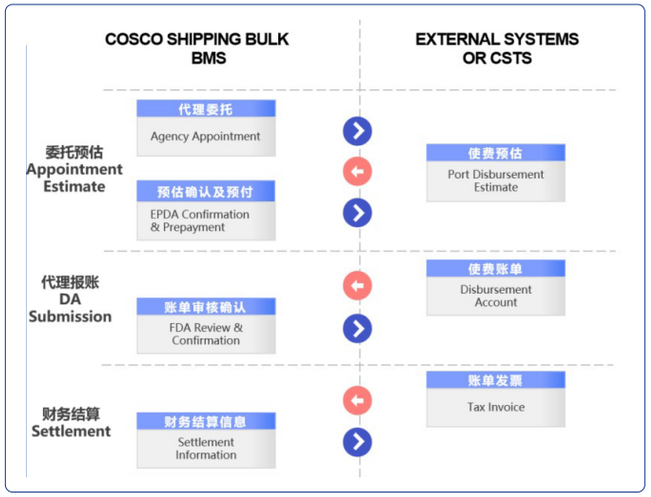
COSCO SHIPPING Bulk has developed CSTS since 2022 to accelerate the digital and intelligent transformation of the “shipping + ports + logistics” supply chain and enhance collaboration efficiency among upstream and downstream partners, based on the principles of extensive consultation, joint contribution, and shared benefits.

联通跨境数据，实现全球航运商务无纸化协同新模式

Connecting Cross-border Data to Establish a New Paperless Collaborative Model for Global Shipping Business

CSTS以打通中远海运散运与供应商的数据交互通道为核心目标，以委托订单为业务主线，梳理优化航运商务流程，规范船舶、港口、码头、供应商、费用项目分类的标准定义，搭建便捷规范的终端界面，完成与港口代理、船舶管理供应商、船东、燃油供应商等合作伙伴在港口使费报账结算、船管报账结算、租金报账、船舶加油报账结算及单证管理等业务模块的数字化对接，实现对业务委托、费用预估、账单报送、费用审核、发票开具、财务结算全业务流程的数字化覆盖。该案例有效解决了商务单证邮寄流转效率偏低、易丢失、易出错，以及业务数据重复录入、对账流程繁琐等行业共性痛点问题，推动了业务上下游实现高效无纸化协同，并联合供应商搭建了规范化在线商务通道。

With the core objective of establishing seamless data connectivity between COSCO SHIPPING Bulk and its suppliers, and with entrusted orders as the main business line, CSTS streamlines and optimizes shipping business processes, standardizes the definitions of vessels, ports, terminals, suppliers and cost items and provides convenient and standardized user interfaces. It enables digital integration with partners, including port agents, ship management suppliers, shipowners, and bunkering suppliers, across modules such as port disbursement accounting and settlement, shipowner’s expense settlement, hire payment, bunkering settlement, and document management. This provides end-to-end digital coverage of the entire business process, from agent appointments, disbursement estimation, and account submission to expense review, invoicing, and financial settlement. The initiative effectively addresses common industry pain points including the low efficiency and risks of loss and errors associated with the circulation of paper documents, as well as repeated data entry and cumbersome reconciliation processes. It promotes efficient paperless collaboration across the business chain and establishes standardized online business channels with suppliers worldwide.



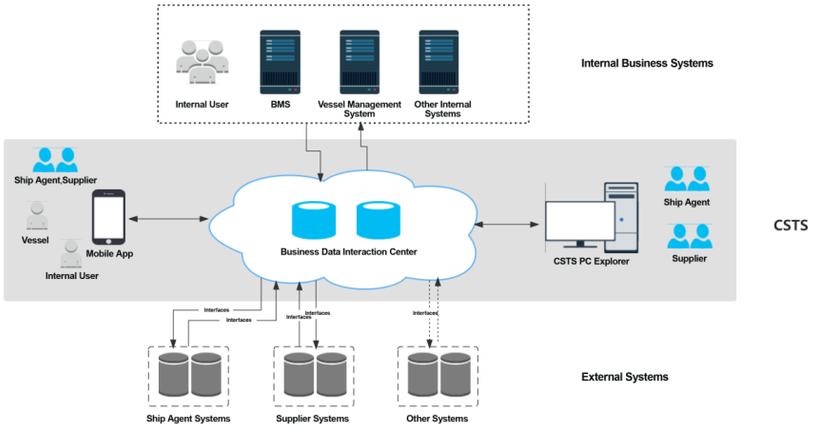
港口使费业务流程图
Port Disbursement Business Process Flowchart.

多维度创新驱动，构建CSTS规模化落地新路径

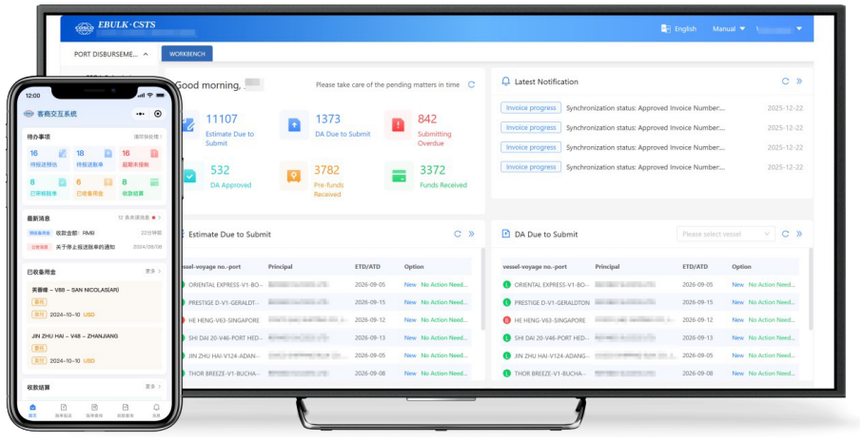
Driving Innovation Across Multiple Dimensions to Establish a New Path for Large-scale CSTS Implementation

为保障CSTS推广应用的通用性、安全性、可扩展性及便捷性，案例从四方面打造创新亮点并落地实施。其一，精准破局，通过全面调研中远海运散运业务系统及合作供应商多维度情况，以港口使费业务为突破口，选取全球代表性供应商试点对接，成效显著后再大规模推广。其二，灵活适配，对外提供标准API接口与商务平台终端，制定统一规范，支持多系统、多企业灵活对接，同时开放PC端与移动端，满足多场景操作需求。其三，安全赋能，构建外网独立模块，与内部系统物理隔离，通过可信数据空间和区块链技术实现数据交互，筑牢商务安全防线。其四，人文适配，在统一标准前提下，兼顾供应商语言、地域等差异，推出个性化定制、智能校验、英文指引等功能，提升操作效率，助力平台高效推广。

To ensure the universality, security, scalability, and user-friendliness of CSTS, the project has developed and implemented innovations in four key areas. First, targeted breakthroughs: through comprehensive research into COSCO SHIPPING Bulk's business systems and suppliers, port disbursement was selected as the entry point, with representative suppliers across different regions chosen for pilot integration before large-scale rollout. Second, flexible adaptation: standardized APIs and business platform interfaces were developed under unified specifications to support flexible integration with multiple systems and enterprises, while both PC and mobile access were provided to diverse operational scenarios. Third, enhanced security: an independent external-network module was established and physically isolated from internal systems,while trusted data spaces and blockchain technology were adopted to enable secure data exchange. Fourth, user-oriented adaptation: while maintaining unified standards, the platform accommodates differences in suppliers' languages and regional practices by providing customized functions, intelligent validation, and English guidance, thereby improving operational efficiency and facilitating broader adoption of the platform .



数据交互架构图 / Data Interaction Architecture



系统主界面 / Home Page

CSTS普惠全球港航，一张账单跑出“一带一路”软联通加速度

CSTS Connecting Global Ports and Shipping: Accelerating the “Soft Connectivity” of the Belt and Road Initiative Through Digital Collaboration

目前，CSTS已实现中国沿海主要港口业务全覆盖，并成功推广至南美、北美、澳洲、新加坡、西非、印尼等国际主要港口，累计吸引113家港口代理及271家船管供应商注册，各类账单报送总量超10万张。其推广应用显著提升了业务流转效率，大幅压缩了人工处理与沟通成本，优化报账工作质量，降低错误修正成本，同时强化了业务协同粘性。通过省去纸质单证邮寄环节，消除单证丢失风险，单证流转周期缩短2-10天；借助避免信息重复录入，每单可节省0.25-6小时处理时间；船东在线反馈问题的机制，也使审核时间缩短约10天。通过开展CSTS推广应用，中远海运散运以安全、开放、合作、共享的理念，携手合作伙伴实现从网络基础设施“硬联通”迈向数字经济“软联通”的新阶段，推动网络经济创新发展，促进共同繁荣。

CSTS has now achieved full coverage across major ports along China's coastline and has been successfully rolled out to major ports across South America, North America, Australia, Singapore, West Africa, and Indonesia. To date, 113 port agents and 271 ship management suppliers have registered on the platform, with more than 100,000 bills submitted in total.

Its application has significantly improved business process efficiency, substantially reduced manual processing and communication costs, enhanced the quality of expense settlement, lowered the cost of errors, and strengthened collaboration among business partners. By eliminating the need to exchange paper documents by post, the platform removes the risk of document loss and shortens document circulation cycles by 2–10 days.

By eliminating repeated data entry, it saves 0.25–6 hours of processing time per transaction. The online feedback mechanism for shipowners has also shortened the review process by approximately 10 days. Through the implementation and global expansion of CSTS, COSCO SHIPPING Bulk, guided by the principles of security, openness, cooperation, and sharing, is working with its partners to advance from "hard connectivity" of network infrastructure toward "soft connectivity" of the digital economy. promoting innovation in the digital economy and contributing to shared prosperity.



▲ 供应商全球分布示意图（注：该地图采用的是百度地图）
Global Supplier Distribution Map (Note: The map is based on Baidu Maps

拓展复制CSTS数字化模式，推动业务数字化转型，助力集团集约协同发展

Expanding and Replicating the CSTS Digital Model to Drive Business Digital Transformation and Support Integrated, Synergistic Development Across the Group

在形成业务规模效应的同时，CSTS模式的拓展与复制能力得到充分发挥，为公司管理升级积累了宝贵经验，形成了成熟的数字化商务模式，推动客户服务、运费结算、单证管理、燃油采购等核心业务实现数字化管理，助力公司业务完成线上化、标准化、流程化的数字化转型；同时，该模式已被集团旗下中远海运能源、中远海运特运等兄弟单位借鉴复用，有效减少重复建设投入，推动集团商务协同向集约化、一体化方向发展。

While achieving economies of scale in business operations, CSTS has demonstrated strong potential for expansion and replication, providing valuable experience for enhancing the company's management capabilities and establishing a mature digital business model. It has promoted the digital management of key business areas, including customer services, freight settlement, document management, and fuel procurement, supporting the company's digital transformation toward more online, standardized, and process-oriented operations. Meanwhile, the model has been adopted and replicated by other COSCO SHIPPING Group subsidiaries, including COSCO SHIPPING Energy Transportation and COSCO SHIPPING Specialized Carriers, effectively reducing investment in duplicate system development and promoting more integrated and centralized business collaboration across the Group.



数智赋能，领航未来
Empowering with Digital Intelligence, Leading the Future.

“丝路电商惠全球”助力构建电商合作新格局

Silk Road E-Commerce for a Shared Global Future: Formulating a New Pattern for E-Commerce Cooperation



▲ 38个“丝路电商”伙伴国
38 Silk Road E-Commerce Partners

申报机构
Applying Institution

中华人民共和国商务部
Ministry of Commerce of the People’s Republic of China

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、约旦、吉尔吉斯斯坦、新西兰、越南等119个国家和地区
Covering 119 countries and regions, including China, Jordan, Kyrgyzstan, New Zealand, and Vietnam

“丝路电商”合作助力全球互利共赢

中国积极开展“丝路电商”合作，与38国建立双边电商合作机制，落地“丝路电商惠全球”活动，以数字经贸实践推动网络空间普惠共赢。

Silk Road E-commerce Cooperation Delivers Mutual Benefits and Win-Win Results for the World

China has vigorously advanced Silk Road e-commerce cooperation, established bilateral e-commerce cooperation mechanisms with 38 countries, and launched the activity “Silk Road E-commerce For the World” to advance inclusive digital trade for a shared cyberspace future.

联动多方主体完善国际化电商合作体系

Coordinate Multiple Stakeholders to Improve the International E-commerce Cooperation System

2025年以来统筹开展“丝路电商惠全球”系列活动，形成政府、平台、企业、国际组织协同联动的国际化电商合作体系，活动成效惠益五大洲。推动产业对接。联动中国16个省市、8家头部电商平台落地40余项重点专项活动，吸引包含38个双边电商合作伙伴国在内的100多个国家参与，累计达成250余项电商领域国际合作意向。开展政企对话。依托第四届数贸会、第八届进博会等国家级展会，创新举办伙伴国联络员会议、国别专题交流会，邀请各国政府、联合国贸发会议等国际组织代表共商数字发展。常态化举办中国—中亚电商圆桌会、中阿电商交流会等机制性会议，凝聚多双边贸易发展共识。赋能地方合作。2025年，指导地方打造泰国电商周、沙特阿拉伯产业对接会等国别专场活动。新建阿联酋、乌兹别克斯坦、意大利等7个线上线下国家馆，伙伴国在中国开设国家馆79个，为全球企业提供展销、通关、营销全链条配套服务。

Since 2025, Silk Road E-commerce For the World has built an international e-commerce cooperation ecosystem linking governments, platforms, enterprises and international organizations, bringing benefits to all five continents.

It advances business matching. Coordinating with 16 regions and 8 leading e-commerce platforms, the activity has launched over 40 key events, drawing participants from more than 100 countries including the 38 Silk Road e-commerce partners and securing over 250 international cooperation intents in e-commerce.

It facilitates government-business dialogue. Leveraging the 4th Global Digital Trade Expo and 8th China International Import Expo (CIIE), China held liaison meetings and country-specific exchange sessions for partner nations, inviting representatives from national governments and international organizations such as UNCTAD to discuss digital development. Regular mechanism events including the China-Central Asia E-commerce Roundtable and China-Arab E-commerce Exchange Forum forged consensus on multilateral and bilateral trade.

It empowers local cooperation. In 2025, themed events such as Thailand E-commerce Week and Saudi Arabia Industrial Matching Conference were held. Seven online or offline national pavilions were newly launched, including the UAE, Uzbekistan, Italy adding to 79 national pavilions operating in China, which deliver full-chain services including exhibition, customs clearance and marketing for international enterprises.



第六届消博会电子商务国际合作圆桌会
6th CICPE E-commerce International Cooperation Roundtable

依托先进业态创新电商合作模式

Innovate E-commerce Cooperation Models Powered by Advanced Digital Formats

将中国电商市场规模大、模式业态全、发展水平高的优势，转化为三大创新实施路径，与伙伴国共同把握数字经济时代发展机遇。一是形成“丝路云品”品牌矩阵，细分推出东盟好物、上合云品等区域子品牌，开展驻华使节直播等促销活动，形成“一国一爆品”特色IP，打通全球优质商品对中国的销售渠道。二是创新数字化能力培育模式，“云上大讲堂”举办东盟、中东欧等4个线上专场和泰国、老挝、埃塞俄比亚3个线下专场，培训伙伴国政企代表、青年创业者等超1200人次，获得全体学员高度赞誉。三是支持地方开展特色合作，上海打造“丝路电商”合作先行区，强化国际经贸纽带功能。广西构建面向东盟“展会+赛事+教育”体系，丰富“桂海商坊”等地方特色电商品牌。青岛上合示范区打造“丝路电商”综合服务基地。

“Silk Road E-commerce For the World” leverages China’s large market scale, diverse business formats and mature digital development into three innovative implementation pathways, helping partners seize opportunities in the digital economy era. The Silk Road E-commerce Selection brand matrix is established, consisting of regional sub-brands such as ASEAN Premiums and SCO Premiums. Diplomatic envoys in China host livestream marketing activities to create signature national hit products, opening up sales channels for high-quality international goods to enter the Chinese market. Innovated digital capacity building is promoted. The Cloud Lecture Hall hosted four online sessions for ASEAN, Central and Eastern Europe and the SCO, plus three offline sessions in Thailand, Laos and Ethiopia, training over 1,200 partner government officials, enterprise representatives and young entrepreneurs, all of whom spoke highly of the programs. Distinctive local cooperation initiatives are supported. Shanghai pioneers the Silk Road E-commerce Cooperation Pilot Zone, strengthening international trade ties; Guangxi develops an ASEAN-oriented system integrating expos, competitions and education and enriches featured local e-commerce brands such as Guihai Business Hub; the SCO Demonstration Area in Qingdao sets up a comprehensive service base for Silk Road e-commerce.



▲ 巴基斯坦驻华大使走进直播间 Ambassador of Pakistan to China in Live Broadcast



▲ “云上大讲堂”泰国专场 Cloud Lecture Hall Thailand Session

以电商为纽带共享数字红利

Share Digital Dividends via E-commerce

活动创造显著经济与社会价值，有效弥合全球数字发展鸿沟。经贸层面，全球特色产品对华销量大幅攀升。塞尔维亚白兰地、肯尼亚挂耳咖啡销量分别增长353.8%、190.2%，泰国电商周平台销售额突破8000万元。湖南与联合国国际贸易中心合作开展非洲“百店千品上平台”，已帮助非洲20余国50余家中小企业上线阿里国际站销售。人才层面，面向全球南方国家的电商能力建设广受欢迎。西北工业大学哈萨克斯坦分校培育超300名中亚电商专业学生，援外电商培训持续输出中国数字化发展经验，提升各国自主发展能力。一批“小而美”务实合作切实提升各国民众获得感，既为高质量共建“一带一路”注入数字动能，也为全球数字贸易提供包容普惠、互利共赢的实践样本，助力构建更均衡包容的全球网络空间经贸发展格局。

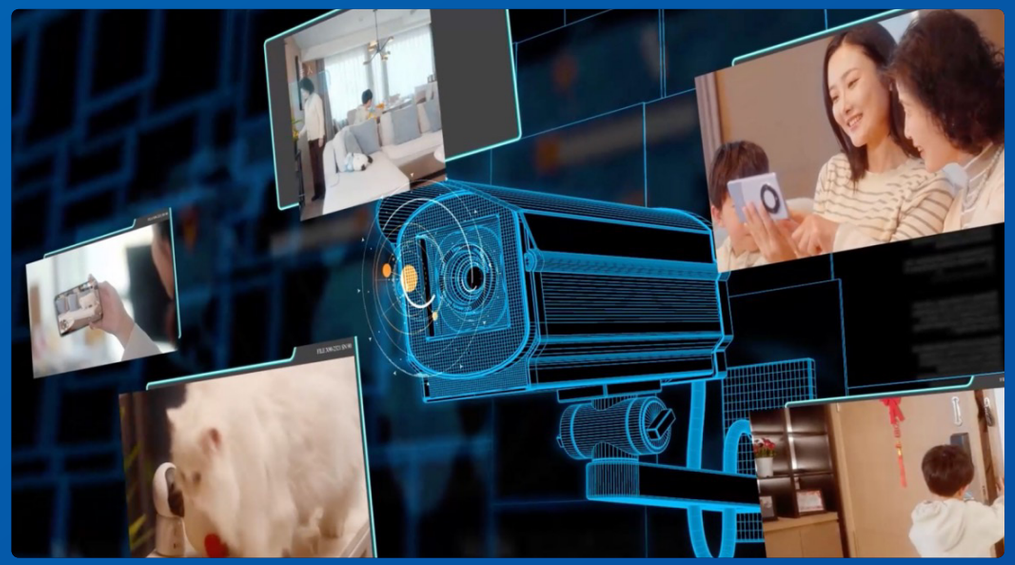
The activity delivers remarkable economic and social value and effectively bridges the global digital divide. In terms of trade, international specialty goods achieved striking sales growth: Serbian brandy sales rose by 353.8% and Kenyan drip coffee by 190.2%, while Thailand E-commerce Week generated over 80 million yuan in platform transaction volume. Partnering with the International Trade Centre, Hunan launched the “100 Stores & 1,000 Products Online” initiative for Africa, helping more than 50 small and medium-sized enterprises from over 20 African countries open stores on Alibaba.com. In terms of capacity building, e-commerce programs targeting Global South countries are widely welcomed. Northwestern Polytechnical University Kazakhstan Branch has cultivated over 300 students majoring in e-commerce for Central Asia, and foreign-aiding e-commerce training programs continuously export China’s digital development experience to boost independent development capacity of all countries. These “small and beautiful” cooperation projects raise public wellbeing across nations, inject digital momentum into high-quality Belt and Road cooperation, and provide an inclusive, win-win practical model for global digital trade to formulate a more balanced and inclusive pattern for economic cooperation in cyberspace.



▲ 超500家企业参加2025“丝路云品”电商月启动仪式现场对接会（联合国国际贸易中心协助组织50余家发展中国家企业参加）
500+ enterprises participating in 2025 Silk Road E-commerce Selection Month Launch Ceremony Business Matching Session (with the International Trade Centre facilitating the participation of 50+ developing-country enterprises).

泛视觉智能开放服务：共建全球绿色可持续发展新范式

Pan-Visual Intelligent Open Service: Jointly building a New Paradigm for Global Green and Sustainable Development



▲ 泛视觉智能开放服务连接家庭、社区与行业的泛在感知服务能力
Pan-Visual intelligent service provides ubiquitous perception capabilities connecting homes, communities and industries

申报机构

Applying Institution

中移（杭州）信息技术有限公司
China Mobile (Hangzhou) Information Technology Co., Ltd.

其他参与机构
Other Participating Organizations

杭州视洞科技有限公司、华为技术有限公司、北京朝歌数码科技股份有限公司、中国移动国际有限公司、中国移动通信集团北京有限公司、中国移动通信集团江苏有限公司、中国移动通信集团四川有限公司

Hangzhou Vision Insight Technology Co., Ltd. Huawei Technologies Co., Ltd.
Sunniwell Co., Ltd. China Mobile International Limited
China Mobile Group Beijing Co., Ltd. China Mobile Group Jiangsu Co., Ltd.
China Mobile Group Sichuan Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、泰国、巴基斯坦等10个国家和地区
Covering 10 countries and regions including China, Thailand, and Pakistan

立足"携手构建网络空间命运共同体"的核心理念，项目以泛视觉智能开放服务为纽带，携手全球产业伙伴，依托互联共享、能力赋能、绿色共建三大路径，面向乡村治理、政务监管、智慧民生等多元场景提供普惠化智能服务，共筑全球绿色可持续发展新范式，为数字经济高质量发展注入新动能。

Following the core philosophy of "Jointly Building a Community with a Shared Future in Cyberspace", the project regards Pan-Visual Intelligent Open Service as a bridge, collaborates with global industrial partners, and relies on three core pathways: interconnection and sharing, capability empowerment, and green co-construction. It delivers general intelligent services for diverse scenarios including rural governance, government regulation, and smart people's livelihoods, jointly forges a new paradigm for global green and sustainable development, and injects new impetus into the high-quality growth of the digital economy.

消除设备和平台互通壁垒，构建异构互联的泛视觉感知网络
Break Down Interoperability Barriers Among Devices And Platforms: Building An Interconnected Ubiquitous Vision Perception Network

项目聚焦视频物联领域终端接入效率低、兼容性差、互联互通难等突出问题，攻关统一开放接口服务、媒体标准协议及资源鉴权服务等核心能力，兼容ONVIF等多种国际主流协议，通过ISO国际安全认证，实现新增终端的快速接入，并创新打造融合网关产品，成功纳管社会面存量设备。目前，平台现已接入14大品类超800款泛视觉终端，合作全球200余家行业伙伴，构建起全域泛在的视频感知能力。能力已服务45万个行政村及社区综合治理场景，为基层治安防控、生态环境监测提供智能化服务，同时赋能"一带一路"沿线国家的智慧城市建设与公共安全治理。

The project addresses prominent pain points in the visual IoT sector, including low terminal access efficiency, poor cross-device compatibility and difficult interoperability. It has achieved breakthroughs in core capabilities: unified open interface services, standard media protocols, and resource authentication services. The platform is compatible with ONVIF and other mainstream international protocols, holds ISO international security certification, and enables rapid onboarding of new terminals. It has also innovatively launched integrated gateway products, successfully incorporating and managing existing public-facing legacy devices.

To date, the platform has connected 800 types of pan-visual terminals across 14 major categories, partnered with 200 global industry players, and established ubiquitous full-domain video perception capabilities. These capabilities have been deeply applied in 450,000 comprehensive governance scenarios covering villages and communities, delivering intelligent services for grassroots public security prevention & control and ecological environment monitoring. Meanwhile, they empower smart city development and public security governance in countries along the Belt and Road Initiative (BRI).



▲ 泛视觉全域感知能力
Pan-visual perception capabilities

原子化AI能力赋能，打造积木式智慧应用创新引擎

Empowered by atomic AI capabilities, building a modular innovation engine for smart applications.

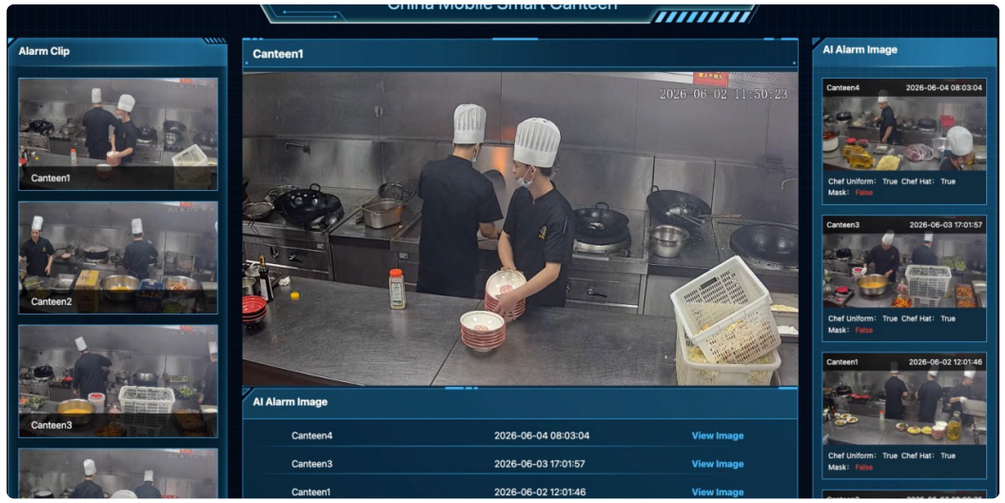
围绕视频物联行业算法复用率低、应用开发周期长、资源利用率不足等痛点，项目持续深耕AI算法研发与场景落地，突破算法原子化关键技术，打磨形成80 余项原子算法能力，实现算法“积木式”灵活组合、按需调用。通过构建“终端接入—能力封装—开放调用”标准化架构，推出“技术授权+能力开放+全流程运营支撑”一体化服务，以标准化API接口大幅缩短合作伙伴开发周期50%以上。依托开放能力，项目赋能主流外卖平台及政府监管部门，打造“一机三通”（商户看店、政府监管、平台直播）标杆应用，实现餐饮后厨全流程智能化监管。系统可自动识别未按规定穿戴工服、违规吸烟、操作不规范等问题，筑牢食品安全防线，推动食品安全监管从被动处置转向主动防范。同时能力赋能养老机构、养老社区等平台开展智慧康养服务，通过AI技术分析实现老年人跌倒等异常行为预警功能，全方位守护超950万银发群体安全。

Targeting challenges in the visual IoT industry - including low algorithm reuse rates, long application development cycles, and insufficient resource utilization - the project has continuously deepened R&D of AI algorithms and scenario deployment. It has achieved breakthroughs in the core technology of algorithm atomization, and developed more than 80 atomized algorithm capabilities, enabling flexible "building-block" combination and on-demand invocation of algorithms.

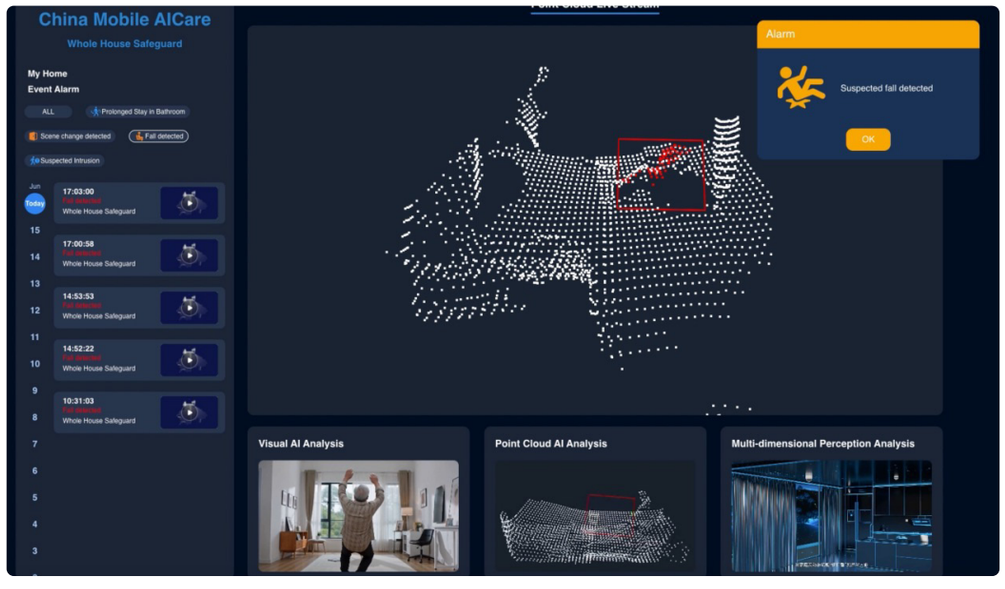
By establishing a standardized architecture of 'Terminal Access–Capability Encapsulation–Open Invocation', the project has launched an integrated service covering "technology licensing, capability opening, and full-process operational support". Through standardized API interfaces, it has cut the development cycle for partners by more than 50%.

Leveraging these open capabilities, the platform empowers leading food delivery platforms and government regulatory authorities. The project has created a benchmark application of "One Device, Three Functions" (merchant in-store monitoring, government regulation, platform live streaming), realizing full-process intelligent supervision of restaurant back-of-house operations. The system automatically detects violations including improper work attire, unauthorized smoking, and irregular operations, fortifying the food safety defense line and driving the shift of food safety supervision from passive response to proactive prevention.

Meanwhile, the capabilities empower elderly care institutions and senior community platforms to deliver smart elderly care services. Through AI-powered analysis, it enables early warning of abnormal behaviors including falls among the elderly, comprehensively safeguarding the safety of over 9.5 million senior citizens.



▲ 阳光厨房案例 / Smart Canteen



▲ 老人看护_跌倒检测案例 / Fall Detection for Elderly Care

绿色降本增效，释放全球普惠价值与生态共荣动能

Green Cost Reduction and Efficiency Enhancement: Unleashing Global Inclusive Value and Momentum for Ecological Co-Prosperity

项目深度践行绿色可持续发展理念，研发多级部署架构、异构算力调度及智能语义编解码等关键技术，全面优化视频数据从采集、传输、存储到处理的全链条效能，实现成本有效压降超20%，业务运营效率提升25%以上。在生态共建层面，项目坚持开放合作、互利共赢的理念，全面开放泛视觉基础能力与AI核心能力，已为全球110余个项目提供定制化解决方案，覆盖政务、民生、产业等多领域场景，以技术普惠推动产业协同升级，助力构建开放、包容、安全、普惠的网络空间命运共同体，推动全球绿色可持续发展迈向新高度。

The project is deeply committed to the philosophy of green and sustainable development. It has developed core technologies including multi-level deployment architecture, heterogeneous computing power scheduling, and intelligent semantic coding & decoding, comprehensively optimizing the full-chain efficiency of video data across collection, transmission, storage and processing. This has delivered over 20% reduction in storage costs and more than 25% improvement in business operational efficiency.

For ecological co-construction, the project adheres to the principle of open cooperation and mutual benefit. It fully opens up basic Ubiquitous Vision capabilities and core AI capabilities and has provided customized solutions for more than 110 projects worldwide, covering scenarios in government services, public livelihood, industrial development and other sectors. Through technology inclusiveness, it drives collaborative industrial upgrading, contributes to building an open, inclusive, secure and universal community with a shared future in cyberspace, and elevates global green and sustainable development to a new level.

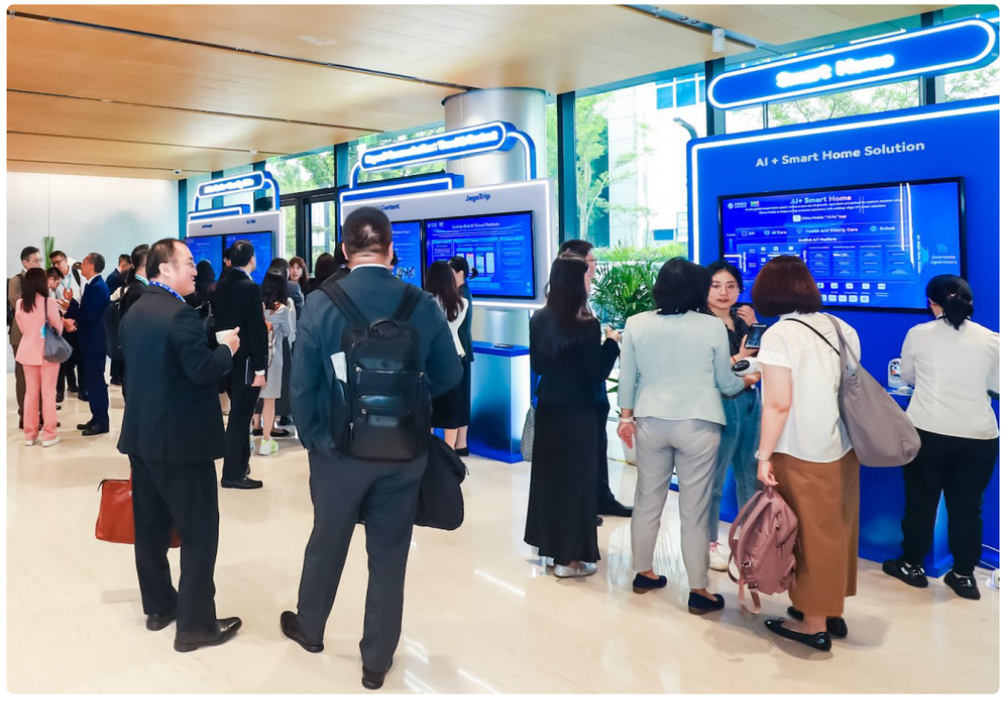


▲ 泰国合作（Collaboration with Thailand）





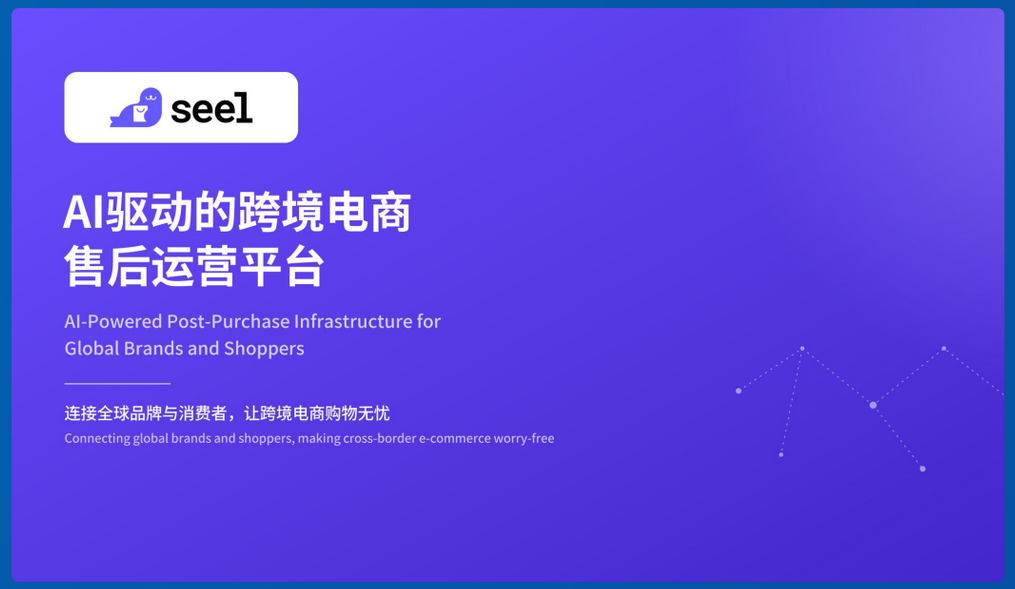
▲ 世界移动通信大会参展 /Mobile World Congress



▲ 中国移动“牵手计划”（hi-H Program）全球合作伙伴大会
China Mobile Hand-in-Hand Program Global Partnership Executive Conference

AI驱动的跨境电商售后运营平台——让数字经济普惠全球消费者与品牌

AI-Powered Post-Purchase Operations Platform—Making E-Commerce More Inclusive for Global Brands and Shoppers



▲ Seel 以 AI 驱动的售后基础设施连接全球品牌与消费者，让跨境电商购物无忧。
Seel's AI-driven post-purchase infrastructure connects global brands and shoppers, making cross-border e-commerce worry-free.

申报机构
Applying Institution

seel

Seel, Inc.（总部：美国·旧金山）
Seel, Inc. (Headquarters: San Francisco, U.S.A.)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、加拿大、英国、法国、德国等5个国家和地区
Covering 5 countries and regions, including the United States, Canada, the United Kingdom, France, and Germany

全球跨境电商已突破6万亿美元，却长期受困于售后失衡：物流风险高、退货繁琐、客服滞后，20%–25%营收因退款流失，60%消费者因一次糟糕体验永久流失——服务鸿沟正是Seel以AI弥合的数字经济门槛。

Global cross-border e-commerce has surpassed US$6 trillion, yet remains constrained by an imbalanced post-purchase experience—high logistics risk, lengthy returns, opaque refunds, and time-zone-bound support. Roughly 20–25% of revenue is lost to returns, and 60% of shoppers never return after a single poor experience. For globally ambitious brands, this service gap is a real barrier to the digital economy—one that Seel closes with AI.

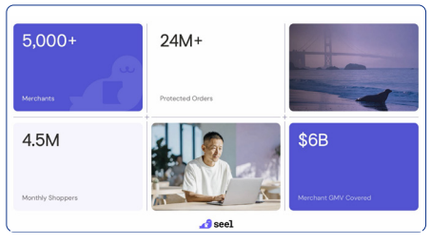
硅谷AI科技引领全球电商售后变革，构建服务超5,000个品牌的智能平台

Silicon Valley AI Innovation Driving Global E-Commerce Transformation, Serving Over 5,000 Brands

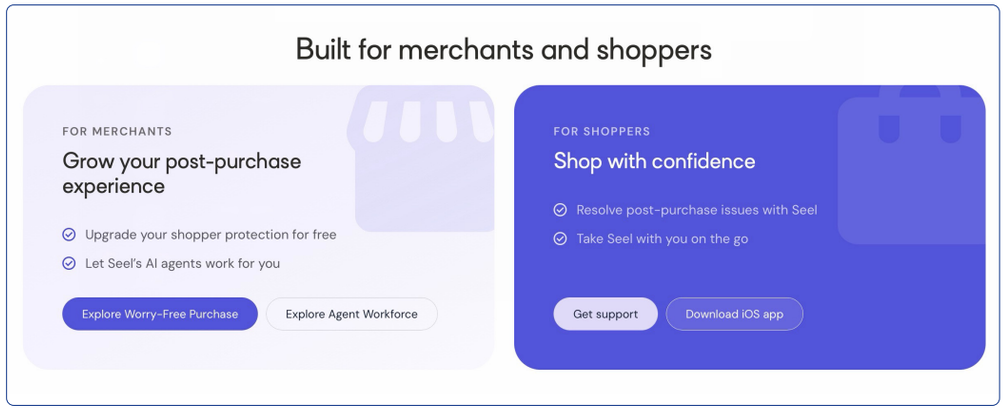
Seel是诞生于美国硅谷的AI科技公司，致力于打造全球领先的AI驱动智能售后平台，并将驱动无忧售后的AI Workforce开放给电商商家：面向消费者，打消售后顾虑、享受高效优质服务；面向商家，提升售前转化、降低售后损失。目前已服务超过5,000个品牌、数千万名欧美消费者，合作伙伴涵盖Poshmark、Debenhams Group、Backcountry等国际主流渠道，及Anker、Creality、Dreame等中国国际化标杆品牌。核心产品Worry-Free Purchase®已成为欧美消费者认可的售后品牌——消费者结账时以极低成本加购即享全面保障，一旦退货、破损或丢件，由Seel承担赔付，消除消费者与商家之间的摩擦。该模式对商家完全免费，并显著提升结算率、客单价与复购率：以全球消费级3D打印巨头Creality为例，其美国站复购率提升约5%、欧洲主要站点提升约2个百分点。凭借持续创新，Seel入围2026年国际Retail Systems Awards“年度最佳电商解决方案”，为该类别唯一入围的售后科技平台。

Founded in Silicon Valley, Seel is an AI technology company building the world's leading AI-driven post-purchase platform. It opens its AI Workforce to e-commerce merchants, delivering value on two levels: for consumers, it removes post-purchase anxiety and delivers faster, higher-quality service; for merchants, it improves pre-purchase conversion and reduces post-purchase losses. Seel serves over 5,000 brands and tens of millions of consumers across Europe and North America, with partners including Poshmark, Debenhams Group, and Backcountry, alongside leading Chinese export brands such as Anker, Creality, and Dreame.

Its flagship product, Worry-Free Purchase®, has become a trusted post-purchase brand for consumers in Europe and North America: at checkout, shoppers add comprehensive protection at minimal cost, and if any issue arises—returns, damage, or lost parcels—Seel assumes full liability, eliminating friction between consumers and merchants. The model is completely free for merchants and measurably lifts checkout conversion, average order value, and repeat purchases. Creality, the global leader in consumer 3D printing, recorded roughly 5% higher repeat-purchase rates in its U.S. store and about 2 percentage points across major European markets after deployment. Seel has also been shortlisted for "E-commerce Solution of the Year" at the 2026 Retail Systems Awards—the only post-purchase technology platform shortlisted in its category.



Seel 服务规模核心数据概览
Seel's key metrics



▲ 商家和购物者双向赋能，优化售前售后体验
Empowering merchants and shoppers alike

首创 AI Workforce 数字员工体系，以先进实用的 AI 技术普惠各规模品牌

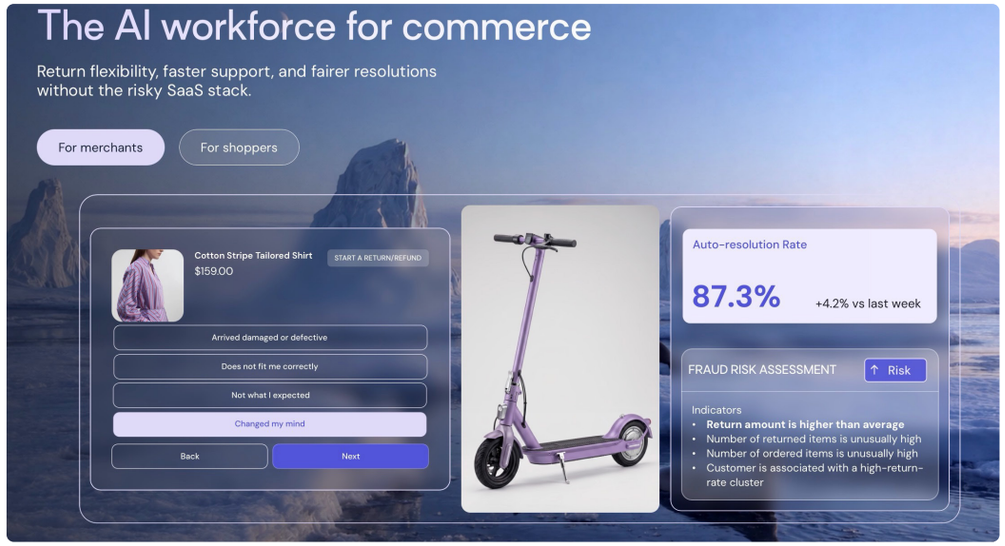
The Industry's First AI Workforce: Practical, Proven AI for Brands of Every Scale

Seel构建了行业首个AI数字员工体系（AI Workforce），涵盖智能客服、智能加购推荐、智能全网洞察、智能风控等职能，已在生产环境稳定运行近一年，并基于数千万真实售后订单持续迭代。以智能客服为例，不同于通用AI客服仅能“回答问题”，Seel的AI Workforce实现端到端自动化：零配置下自动解决率超65%，接入知识库后可达90%，消费者满意度较传统客服基准显著提升，且商家无需任何工程开发投入。跨境电商售后原本以周为单位，AI Workforce可实现破损商品即时退款——42%的赔偿申请在毫秒级完成审核，67%的申请无需上传任何证明文件。Seel将AI Workforce免费向电商卖家开放，使原本只有头部企业才负担得起的AI能力，以极低成本普惠至各规模品牌。

Seel has built the industry's first AI digital workforce—AI Workforce—spanning intelligent customer service, smart product recommendations, global brand intelligence, and AI-powered risk control. It has run in production for nearly a year, continuously improving on tens of millions of real post-purchase transactions.

Unlike generic chatbots that merely answer questions, Seel's AI Workforce achieves true end-to-end automation: with zero configuration it resolves over 65% of cases autonomously, rising to 90% after knowledge-base integration, while consumer satisfaction significantly exceeds traditional benchmarks—and merchants need no engineering investment to deploy. Where cross-border post-purchase service was once measured in weeks, AI Workforce operates in real time: refunds for damaged items are issued instantly, 42% of protection claims are reviewed in milliseconds, and 67% require no supporting documents from consumers.

By offering AI Workforce at no cost, Seel democratizes enterprise-grade AI—capabilities once affordable only to the world's largest platforms—for brands of every size.



▲ Seel的数字员工提供了更快的售后支持和更公平的解决方案
Seel's AI workforce delivers return flexibility, faster support, and fairer resolutions

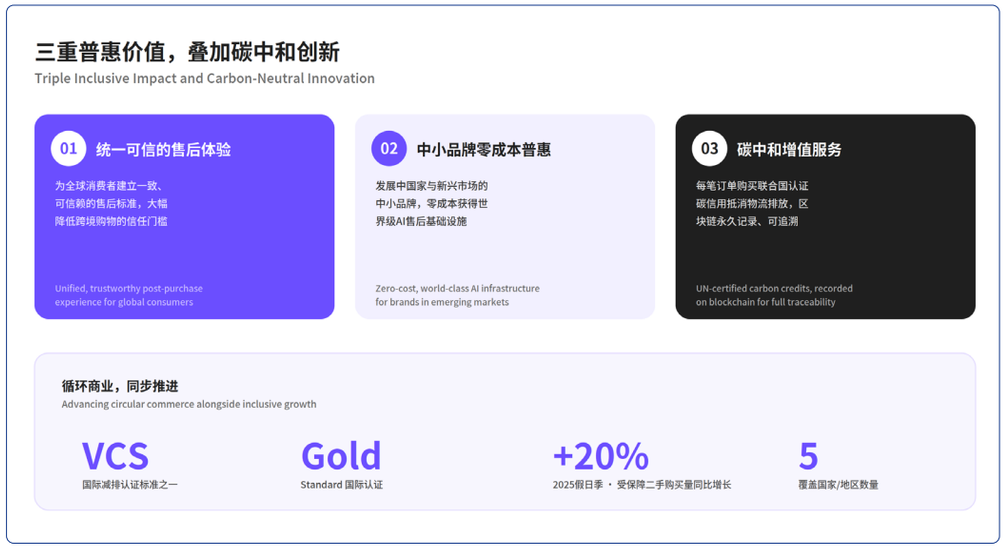
三重普惠价值叠加碳中和创新，推动全球电商可持续发展

Triple Inclusive Impact and Carbon-Neutral Innovation, Driving Sustainable Global Commerce

Seel的实践意义超越商业层面。其一，为全球消费者建立统一、可信赖的售后体验，大幅降低跨境购物的信任障碍；其二，让中小品牌以零成本获得世界级AI售后基础设施，尤其惠及来自发展中国家和新兴市场的品牌，帮助其平等参与国际竞争；其三，创新推出碳中和推动循环商业——针对每笔订单，Seel以商家名义购买碳信用抵消物流碳排放，碳信用均来自联合国认可的减排项目，符合VCS与Gold Standard国际认证，每笔抵消永久登记于区块链，可追溯、可验证。Seel还将保障延伸至二手转售平台，推动循环商业：2025年假日季，受Seel保障的二手购买量同比增长20%。作为硅谷AI深度融入全球数字经济的典型实践，Seel证明前沿技术能同时实现商业成功、社会普惠与环境责任，为“携手构建网络空间命运共同体”提供可复制、可规模化的真实样本。

Seel's significance extends well beyond commercial performance. First, it establishes a unified, trustworthy post-purchase experience for consumers worldwide, sharply lowering the trust barriers that have long inhibited cross-border commerce. Second, it enables small and mid-sized brands—especially those from developing economies and emerging markets—to access world-class AI post-purchase infrastructure at zero cost, letting them compete on equal terms internationally. Third, Seel has introduced an innovative carbon-neutral service: for every order, carbon credits are purchased on the merchant's behalf to offset logistics emissions. All credits come from UN-recognized emission-reduction projects, certified under the Verified Carbon Standard (VCS) and Gold Standard, with every offset permanently recorded on blockchain for full traceability. Seel has also extended protection to secondhand and re-commerce platforms, advancing circular commerce: during the 2025 holiday season, secondhand purchases covered by Seel grew 20% year-over-year.

As a clear example of Silicon Valley AI integrating deeply into the global digital economy, Seel demonstrates that frontier technology can simultaneously achieve commercial success, broad social benefit, and environmental responsibility—offering a replicable, scalable model for jointly building a community with a shared future in cyberspace.



▲ Seel的三重普惠价值——全球统一的售后信任标准、面向中小品牌的零成本AI基础设施、助力碳中和和循环经济
Seel's triple inclusive value — globally unified after-sales trust standards, zero-cost AI infrastructure for small and medium-sized brands, and contributions to carbon neutrality and the circular economy.

APESOFT软件与数字经济国际化促进平台：推动秘鲁科技企业跨境与数字产业协同

APESOFT Software and Digital Economy Internationalization Platform: Advancing the Global Expansion of Peruvian Technology Firms and Cross-Border Digital Industry Collaboration



▲ APESOFT数字化国际协作示意——以触达全球网络节点的方式，呈现软件服务、商务协同与数字连接的跨境联动。
Conceptual graphic of the APESOFT internationalization platform: a hand activating global digital nodes to represent cross-border software, business and connectivity services.

申报机构
Applying Institution

秘鲁软件、技术与数字经济协会
APESOFT - Asociación Peruana de Software, Tecnologías y Economía Digital

其他参与机构
Other Participating Organizations

UHY Blancas Sandoval y Asociados、全球创新管理研究院（GIMI）、秘鲁北方私立大学（UPN）、秘鲁人文科学大学（UCH）、秘鲁生产部、秘鲁外贸旅游部（MINCETUR）、秘鲁国家科技技术创新委员会（CONCYTEC）、秘鲁国家竞争与知识产权保护局（Indecopi）、秘鲁出口促进委员会（PROMPEX）

UHY Blancas Sandoval y Asociados, Global Innovation Management Institute (GIMI), Universidad Privada del Norte (UPN), Universidad de Ciencias y Humanidades (UCH), Ministry of Production of Peru, Ministry of Foreign Trade and Tourism of Peru (MINCETUR), National Council of Science, Technology and Technological Innovation (CONCYTEC), National Institute for the Defense of Competition and Intellectual Property Protection (Indecopi), Peruvian Export Promotion Commission (PROMPEX)

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖秘鲁、美国、智利、阿根廷、墨西哥、西班牙、中国、巴西、德国、英国10个国家和地区
Covering 10 countries and regions including Peru, the United States, Chile, Argentina, Mexico, Spain, China, Brazil, Germany, and the United Kingdom

秘鲁软件产业已聚集60余家活跃企业，但仍面临国际市场准入门槛高、跨境协作机制不足等制约。APESOFT整合行业协会、全球商务网络与高等教育资源，搭建数字化国际化促进平台，助力本国科技企业突破地理边界，对接全球技术合作与出口市场。

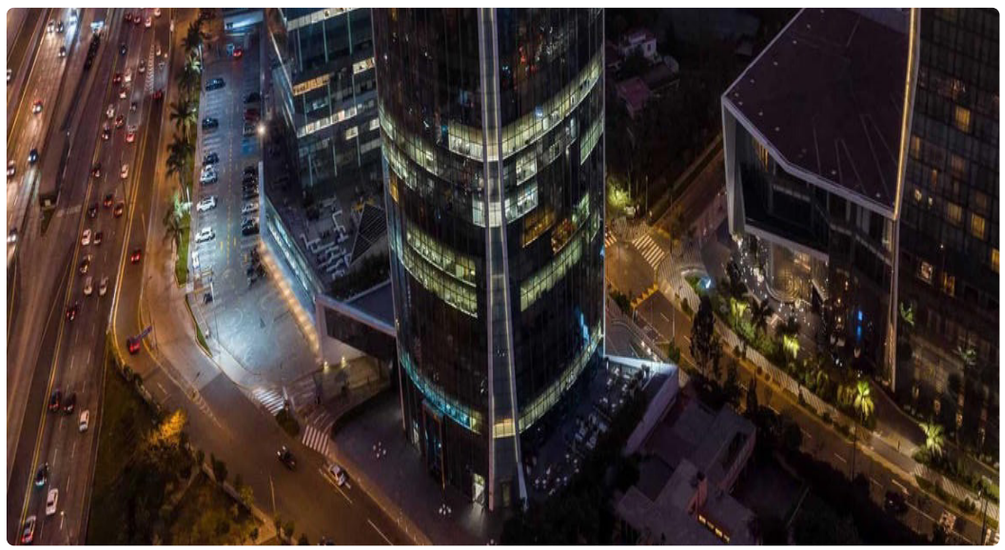
Peru's software industry comprises more than 60 active firms, yet still faces high barriers to international market entry and limited cross-border collaboration mechanisms. APESOFT brings together industry associations, a global business network and higher-education resources to build a digital internationalization platform that helps Peruvian technology companies move beyond geographic constraints and connect with global technology cooperation and export markets.

十国协同构建拉美数字产业国际化网络

A Ten-Country Collaboration Network for the Internationalization of Latin America's Digital Industry

APESOFT成立于2000年，总部位于利马，由60余家秘鲁主要软件与技术企业组成，是连接本国数字产业与国际市场的行业协同平台。平台以跨国协作为主线构建数字产业生态：联合UHY分布于81个国家的340个商务中心实施“Perú con el mundo”项目，推动秘鲁科技企业服务出口；与全球创新管理研究院（GIMI）建立认证培训伙伴关系，将ISO 56000创新管理标准引入秘鲁；并与北方私立大学（UPN）、人文科学大学（UCH）等高校合作，为学生提供技术培训与跨境项目实践。会员企业Baufest已在智利、阿根廷、墨西哥组织多国远程团队，形成“本地资源+全球团队”的业务组织方式。上述安排使行业协会、国际商务网络、高等教育与企业实践处于同一协作框架之中。

Founded in 2000 and headquartered in Lima, APESOFT brings together more than 60 leading Peruvian software and technology companies as a coordination platform between the domestic digital industry and international markets. International collaboration is organized as an ecosystem: the “Perú con el mundo” programme, delivered with UHY’s 340 business center’s in 81 countries, supports service exports; a Certified Training Partner relationship with GIMI introduces the ISO 56000 innovation-management standards to Peru; and partnerships with UPN and UCH provide technical training and cross-border project experience. Member firm Baufest operates multinational remote teams in Chile, Argentina and Mexico. Industry association, global business networks, universities and firms therefore operate inside one collaboration framework.



▲ 利马商务区夜景，标示APESOFT所依托的秘鲁数字产业与跨境服务出口地理原点。
Night view of Lima’s business district, marking the geographic base of Peru’s digital industry and the export of technology services supported by APESOFT.

数字化跨境与产业协同的闭环实施路径

A Closed-Loop Pathway Combining Digital Internationalization and Industrial Collaboration

本案例的核心创新，在于构建“企业赋能—全球对接—项目落地—标准认证—持续迭代”的闭环。平台以会员服务提升企业国际竞争力，依托 UHY 全球网络开展 B2B 跨境商务对接，通过 GIMI 认证培训伙伴机制引入 ISO 56000 系列创新管理认证，使秘鲁专业人士获得国际认可资质，并借助高校合作培养具备国际项目经验的数字人才。与此同时，APESOFT 推动会员企业取得 CMMI、ISO 9000、IT MARK 等国际质量认证，塑造“Software Peru”品牌信誉，并参与国家数字经济政策讨论与标准建设。闭环的意义在于：出口对接不以单次活动结束，而是回馈到能力建设、认证升级与下一批项目准备，从而降低中小软件企业单独跨境的信息与合规成本。

The case’s core innovation is a closed loop of enterprise empowerment, global matching, project delivery, standards certification and continuous iteration. Member services strengthen international competitiveness; the UHY network enables B2B matching; the GIMI training-partner mechanism introduces ISO 56000 so that Peruvian professionals can obtain internationally recognized credentials; and universities develop talent with cross-border project experience. APESOFT also helps members obtain CMMI, ISO 9000, and IT MARK certifications, building the “Software Peru” brand and contributing to digital-economy policy. Export matching is therefore not a one-off event: it feeds back into capability building, certification and the next round of projects, lowering the information and compliance cost of going global for smaller software firms.



▲ 国际协作工作会议示意——团队对照全球市场网络讨论项目对接，对应平台“全球对接—项目落地”的实施环节。
An illustrative working session around a global-market map, corresponding to APESOFT’s matching and project-delivery stage.

面向全球的普惠价值与拉美数字经济示范

Inclusive Global Value and a Demonstrative Model for Latin America's Digital Economy

在经济层面，APESOFT助力秘鲁软件企业进入覆盖81国的商务网络，拓展服务出口并带动就业。在社会层面，平台与高校合作开展数字人才培养和国际项目实践，并关注缩小性别数字鸿沟，使更多青年和女性从业者进入可跨境交付的岗位轨道。在普惠层面，本案例形成“行业协会+全球网络+标准认证+政府协同”的可复制路径，使中小企业能够以相对较低的成本参与全球数字经济，而不必各自重建渠道、标准和信用。对拉美及其他发展中经济体而言，这一结构提供的不是单一项目经验，而是一套可对照实施的产业国际化组织方式。

Economically, APESOFT helps Peruvian software firms reach a business network spanning 81 countries, expanding service exports and employment. Socially, it works with universities on digital talent and international project experience, and on narrowing the gender digital divide so that more young people and women can enter roles capable of cross-border delivery. In terms of inclusion, the case offers a replicable pathway industry association, global network, standards certification and public-sector coordination, enabling SMEs to join the global digital economy without rebuilding channels, standards and reputation on their own. For Latin America and other developing economies, the value lies less in a single project than in an organizational method of industrial internationalization.



▲ 高校实验室中的产业导师辅导示意，体现平台与大学合作培养具备国际项目经验的数字人才。
An illustrative university-lab mentoring scene, showing how the platform works with universities to develop digital talent with international project experience.

数字经济行动倡议

Digital Economy Action Initiative



▲ AADE始终坚持以实际行动推动数字经济行动倡议的发展
AADE remains committed to driving the advancement of the Digital Economy Action Initiative through concrete actions.

申报机构

Applying Institution

ASIA ACADEMY OF DIGITAL ECONOMICS 亚洲数字经济科学院

亚洲数字经济科学院
Asia Academy of Digital Economics

其他参与机构
Other Participating Organizations

联合国互联网治理论坛、联合国工业发展组织、联合国经济及社会理事会、联合国技术银行、国际刑警组织、国际清算银行、联合国贸发会议、世界数据组织、世界互联网大会、世界经济论坛、国际数字经济协会、新加坡资讯通信媒体发展局、新加坡金融管理局、中国工业和信息化部、新加坡律政部、全球数字经济城市联盟、英伟达、华为、阿里巴巴集团 / 阿里云、谷歌、甲骨文、腾讯、Visa、渣打银行、华侨银行、星展银行、花旗银行、保诚集团、普华永道、安永、淡马锡控股、币安、HashKey 集团、SBI Digital Markets StraitsX、亚太交易所、新加坡国立大学、南洋理工大学、新加坡管理大学、耶鲁大学、牛津大学、哈佛大学贝尔弗中心、香港科技大学、中国人民大学、新加坡科技研究局、AI 新加坡、区块链协会新加坡、人工智能国际研究院、全球金融科技研究院、负责任金融科技研究所、通商中国、云安全联盟、印尼数字化与网络安全协会、RHTLaw Asia、新华社

United Nations Internet Governance Forum (UN IGF), United Nations Industrial Development Organization (UNIDO), United Nations ECOSOC, United Nations Technology Bank for LDCs, INTERPOL, Bank for International Settlements (BIS), United Nations Conference on Trade and Development (UNCTAD), World Data Organization (WDO), World Internet Conference (WIC), World Economic Forum (WEF), International Digital Economies Association (iDEA), Infocomm Media Development Authority (IMDA), Monetary Authority of Singapore (MAS), Ministry of Industry and Information Technology (MIIT), China, Ministry of Law, Singapore, Global Digital Economy Cities Alliance (DEC40), NVIDIA, Huawei, Alibaba Group / Alibaba Cloud, Google, Oracle, Tencent, Visa Inc., Standard Chartered Bank, OCBC Bank, DBS Bank, Citibank, Prudential plc, PricewaterhouseCoopers (PwC), Ernst & Young (EY), Temasek Holdings, Binance, HashKey Group, SBI Digital Markets, StraitsX, Asia Pacific Exchange (APEX), National University of Singapore (NUS), Nanyang Technological University (NTU), Singapore Management University (SMU), Yale University, University of Oxford, Belfer Center for Science & International Affairs, Harvard University, Hong Kong University of Science and Technology (HKUST), Renmin University of China, Agency for Science, Technology and Research (A*STAR), AI Singapore, Blockchain Association Singapore (BAS), Artificial Intelligence International Institute (AIII), Global Fintech Institute (GFI), Responsible Fintech Institute, Business China, Cloud Security Alliance (CSA), Asosiasi Digitalisasi dan Keamanan Siber (ADIGSI), RHTLaw Asia LLP, Xinhua News Agency

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖爱尔兰、澳大利亚、新加坡、中国、印度尼西亚等32个国家和地区
Covering 32 countries and regions, including Ireland, Australia, Singapore, China, and Indonesia

数字经济的全球协作，卡在"叙事断层"与"规则碎片"上
Global Collaboration in the Digital Economy is Stuck on "Narrative Fractures" and "Rule Fragmentation"

未来十年全球新增经济价值的70%将依赖数字技术（WEF），但跨境数据壁垒四年翻倍至62国144项限制（ITIF），发展中国家中小企业先进数字工具采纳率不足20%。打开市场、撮合投资、推动技术采购、促成监管对话——每一步都受制于跨文化叙事能力与跨制度对接机制的缺失。

According to the World Economic Forum (WEF), 70% of new economic value created globally over the next decade will depend on digital technologies. However, cross-border data barriers have doubled in just four years, resulting in 144 restrictions across 62 countries (ITIF), and the adoption rate of advanced digital tools among SMEs in developing countries remains below 20%. Opening markets, matching investments, driving technology procurement, and facilitating regulatory dialogue—every step is constrained by a lack of cross-cultural narrative capabilities and cross-system alignment mechanisms.

DEAI全球行动网络：以六类行动连接技术供需、对齐跨境规则、打通人才通道
DEAI Global Action Network: Connecting Technology Supply and Demand, Aligning Cross-Border Rules, and Unlocking Talent Channels through Six Action Pillars

AADE是获联合国ECOSOC收录、总部设于新加坡的亚洲领先数字经济研究与国际交流平台。其发起的DEAI全球行动网络，致力于将前沿数字技术与真实市场需求精准对齐，围绕三大方向展开六类核心行动。

技术转移——①科技路演与技术审视：围绕具身智能、AI安全、零知识隐私等赛道开展路演与专家审查，连接项目方与资本及种子客户；②全球南方反向路演：邀请亚非拉政府与产业方陈述真实基础设施需求，为科技企业提供验证过的需求侧机会。

规则对齐——③监管与产业对话：围绕深度伪造、数据出口、稳定币合规等议题组织闭门圆桌，推动沙盒试点与分阶段治理；④高规格正式交流：通过年度大会、多边考察与政商对话建立可信关系与合作基础；⑤闭门磋商与危机推演：围绕高敏感议题闭门咨询，以极端场景沙盘压力测试治理边界。

教育互通——⑥教育与产业峰会：针对AI时代去技能化与就业重构，推动课程与产业同步升级，培养跨领域复合能力。

Recognized by the UN ECOSOC and headquartered in Singapore, AADE is a leading digital economy research and international exchange platform in Asia. The Digital Economy Action Initiative (DEAI) Global Action Network, initiated by AADE, is dedicated to precisely aligning frontier digital technologies with verified market demands. It executes six core actions across three strategic directions:

Technology Transfer

① Early-Stage Tech Roadshows and Technical Audit Mechanisms: Focused on high-momentum sectors such as embodied AI, AI safety, and zero-knowledge privacy, this track convenes roadshows and expert reviews to connect project founders with capital and seed customers.

② Global South Reverse Roadshows: Inviting government officials and industrial actors from Asia, Africa, and Latin America to present concrete infrastructure needs, providing technology firms with verified demand-side opportunities.

Regulatory Alignment

③ Regulatory and Industry Dialogues: Organizing closed-door roundtables on issues such as deepfake governance, AI data export, and stablecoin compliance to promote sandbox pilots and phased governance.

④ Formal Engagement Platforms: Building trusted relationships and the groundwork for concrete cooperation through annual conferences, multilateral field visits, and public-private dialogues.

⑤ Chatham House Consultations and Crisis Simulations: Conducting closed-door consultations on highly sensitive issues and using extreme scenario simulations to stress-test governance boundaries.

Educational Integration

⑥ Education and Industry Summits: Responding to deskilling and labour-market restructuring in the AI era by aligning curricula with real industry changes and advancing interdisciplinary capability-building.



▲ DEAI 2026 国际峰会上全球嘉宾围绕传统金融困境：安全、合规与Web3的灵魂之战展开对话
Global participants at the DEAI 2026 International Summit engage in a dialogue surrounding "The TradFi Dilemma — Security, Compliance, and the Battle for Web3's Soul".

AI驱动叙事转译与全球协作网络，打造可执行的数字经济连接引擎

AI-Driven Narrative Translation and Global Collaboration Network: Building an Executable Digital Economy Connection Engine

实施路径上，DEAI采用"三级活动 × 多国节点"联动模式：旗舰年会（WDES）、闭门恳谈会（CBS）与专题研讨构成"广覆盖→深交互→精对接"的漏斗结构，新加坡总部与中、日、菲、美、欧等地办公室线上线下协同，实现跨时区本地化执行。

创新突破体现在三个层面。其一，"AI Pipeline + Human-in-the-Loop"叙事转译——以NLP技术完成多语种、多文化语境的内容适配，再由当地文化、行业与合规专家校准叙事角度与表达边界，确保信息跨越文化差异后仍可理解、可信任、可引发行动。其二，整合UN IGF、新加坡金融科技节、ATxSG等全球伙伴网络及AADE理事社会关系网络，将散点国际关系转化为可调度的协作基础设施。其三，自研基于NLU技术的全球数字经济数据库StarMap，对跨国人群、媒介与渠道进行精准画像与智能匹配，为每次触达提供结构化数据底座。

In terms of implementation, DEAI adopts a linked model of "Three-Tiered Events × Multi-Country Nodes": the flagship World Digital Economy Summit (WDES), Closed-Door Boardroom Sessions (CBS), and thematic seminars form a funnel structure of "broad coverage → deep interaction → precise matching". The Singapore headquarters coordinates seamlessly with offices across China, Japan, the Philippines, the US, and Europe to achieve cross-timezone, localized execution.

The innovative breakthroughs span three levels:

First, "AI Pipeline + Human-in-the-Loop" Narrative Translation: NLP technology adapts content across multiple languages and cultural contexts, followed by meticulous calibration from local cultural, industry, and compliance experts. This ensures that the narrative angle and boundaries of expression are well-adjusted, guaranteeing that messages remain understandable, trustworthy, and actionable across cultural divides.

Second, Transforming Relationships into Infrastructure: Global partner networks—such as UN IGF, Singapore FinTech Festival, and ATxSG—alongside the extensive social and professional networks of the AADE board members, turning scattered international ties into a deployable collaboration infrastructure.

Third, the StarMap Database: StarMap, a proprietary NLU-driven Global Digital Economy Database, conducts precise profiling and intelligent matching of transnational audiences, media, and channels, providing a robust, structured data foundation for every outreach effort.

从高层背书到全球南方参与——构建跨发展阶段的数字经济公共对话空间

From High-Level Endorsements to Global South Participation: Building a Public Dialogue Space for the Digital Economy Across Developmental Stages

DEAI已积累经过验证的多层次国际影响力。

国际层面，AADE相关行动得到联合国技术银行(UN Technology Bank)常务董事Deodat Maharaj高度评价，与联合国互联网治理论坛联合主办2025年度峰会，直接参与全球数字治理议程设定；历届活动累计迎来美国、澳大利亚、西班牙、智利、印度、乌兹别克斯坦等25国大使及外交官出席。

政府层面，新加坡5位部长级官员及国会议员先后出席相关活动，受邀加入新加坡国会官委议员资源委员会参与政策建言。

行业层面，国际刑警组织、联合国工发组织（UNIDO）、国际清算银行（BIS）、新加坡金管局（MAS）、Visa、渣打银行、OCBC、Binance、NVIDIA、PwC、淡马锡、新加坡国立大学、南洋理工大学及哈佛大学Belfer中心等机构的代表出席年度会议。这一参与结构表明，DEAI正在成为跨发展阶段、跨行业的数字经济公共对话基础设施。

DEAI has accumulated proven, multi-layered international influence.

At the international level, AADE's related initiatives have been highly commended by Deodat Maharaj, Managing Director of the UN Technology Bank. By co-hosting the 2025 annual summit with the UN Internet Governance Forum (IGF), it directly participates in setting the global digital governance agenda. Past events have collectively welcomed ambassadors and diplomats from 25 countries, including the United States, Australia, Spain, Chile, India, and Uzbekistan.

At the government level, five ministerial-level officials and Members of Parliament from Singapore have attended its events. Furthermore, AADE has also been invited to join the Resource Panel for Nominated Members of Parliament (NMPs) in the Singapore Parliament to contribute to policy formulation.

At the industry level, delegates from INTERPOL, UNIDO, the Bank for International Settlements (BIS), the Monetary Authority of Singapore (MAS), Visa, Standard Chartered, OCBC, Binance, NVIDIA, PwC, Temasek, the National University of Singapore (NUS), Nanyang Technological University (NTU), and the Belfer Center at Harvard University have attended its annual conferences.

This participation structure demonstrates that DEAI is emerging as a critical infrastructure for public dialogue in the digital economy, bridging across developmental stages and diverse industry sectors.



▲ AADE与联合国IGF联合主办2025年新加坡世界数字经济峰会（WDES）
AADE co-hosts the 2025 World Digital Economy Summit (WDES) in Singapore with the UN IGF.

IDS中国研究实验室

IDS China Research Lab



▲ 2022年9月27日，IDS中国研究实验室以线上线下结合方式正式启动，中欧伙伴共同交流可信、可控的跨境数据共享。
On 27 September 2022, the IDS China Research Lab was officially launched in a hybrid format, bringing Chinese and European partners together to discuss trusted and provider-controlled cross-border data sharing.

申报机构

Applying Institution

上海交通大学
Shanghai Jiao Tong University (SJTU)

德国弗劳恩霍夫软件与系统工程研究所（Fraunhofer ISST）
Fraunhofer Institute for Software and Systems Engineering ISST

其他参与机构

Other Participating Organizations

国际数据空间协会(IDSA)、弗劳恩霍夫协会北京代表处、中国德国商会，以及海尔集团、中国电信和华为等产业合作伙伴。

International Data Spaces Association (IDSA), Fraunhofer Representative Office Beijing, German Chamber of Commerce in China, and industry partners including Haier, China Telecom, and Huawei.

案例涉及的国家和地区

Countries and Regions Covered or Involved in the Implementation

中国、德国
China and Germany

全球供应链的数据价值往往受制于信任、安全与互操作壁垒。IDS中国研究实验室连接中国和德国伙伴，共同探索可信、可控、可复用的跨境数据共享方案。

Data value in global supply chains is often constrained by barriers of trust, security and interoperability. The IDS China Research Lab connects partners in China and Germany to develop trusted, provider-controlled, and reusable approaches to cross-border data sharing.

连接中国与德国，以共同规则释放跨境数据价值

Connecting China and Germany through Common Rules for Trusted Data Sharing

制造业与全球供应链不断产生数据，但商业机密、安全风险、技术差异和使用规则不一致，常使企业“不敢共享、不能互通”。2022年，上海交通大学、弗劳恩霍夫软件与系统工程研究所和国际数据空间协会共同发起IDS中国研究实验室，在中国搭建面向中欧伙伴的交流与研发平台，汇聚高校、科研机构、企业和行业组织，开展联合研究、知识共享和实施项目。9月27日，100余名代表线上线下参加启动活动，围绕一个共同问题交流：数据跨越企业与国界时，如何让提供方仍能决定谁可使用、为何使用及如何使用？实验室把国际架构、开放技术与产业需求连接起来，为跨境协作建立共同语言。

Manufacturing and global supply chains generate growing volumes of data, but trade-secret concerns, security risks, technical differences and inconsistent usage rules often leave companies unwilling or unable to share it. In 2022, Shanghai Jiao Tong University, Fraunhofer ISST and the International Data Spaces Association jointly initiated the IDS China Research Lab as an exchange and R&D platform in China for Chinese and European partners. It brings together universities, research institutes, companies and industry organizations for joint research, knowledge sharing and implementation projects. On 27 September, more than 100 representatives joined the hybrid kick-off around one practical question: when data crosses corporate and national boundaries, how can providers still decide who may use it, why and how? By linking international architecture and open technology with industrial needs, the Lab creates a common language for cross-border collaboration.



▲ 与会代表交流实验室目标、参与方式和首批研究项目。
Participants discussed the Lab’s objectives, participation opportunities and initial research projects.



▲ 2022年9月27日，中欧伙伴线上线下共同参加IDS中国研究实验室启动活动。
Chinese and European partners joined the hybrid kick-off of the IDS China Research Lab on 27 September 2022.

以开放架构和联合验证，让数据可用、可控、可信

Combining Open Architecture and Joint Validation to Keep Data Usable, Controlled and Trusted

实验室以国际数据空间参考架构模型（IDS-RAM）和开源组件为共同技术基础，将原则转化为可测试、可展示、可复用的方案。合作伙伴从产业需求出发，识别数据共享场景，设计身份认证、访问权限、使用条件和合规要求，再通过原型、演示系统和示范应用联合验证。创新之处并非把数据集中到单一平台，而是以技术和共同规则建立分布式信任：数据提供方可约定谁在何种条件下使用数据。联合研发、专题研讨、人才培养和测试评估，使中国场景与欧洲经验形成双向反馈；指导委员会、管理委员会和实验室办公室则持续协调跨机构合作，支持成果应用和跨行业复用。

The Lab uses the International Data Spaces Reference Architecture Model (IDS-RAM) and open-source components as shared technical foundations, turning principles into solutions that can be tested, demonstrated and reused. Partners begin with industrial needs, identify data-sharing scenarios, define identity management, access rights, usage conditions and compliance requirements, and jointly validate them through prototypes, demonstrators and showcases. The innovation is not to pool all data in one central platform. Instead, technology and jointly agreed rules create distributed trust, enabling data providers to specify who may use their data and under which conditions. Joint R&D, thematic workshops, training and testing create a two-way exchange between scenarios in China and experience in Europe. The Steering Committee, Managing Committee and Lab Office coordinate work across institutions, supporting practical application and reuse across sectors.



▲ 中德伙伴围绕IDS架构、开源组件和产业场景开展联合研讨。
Chinese and German partners exchange knowledge on IDS architecture, open-source components and industrial scenarios.

让更多组织参与数据价值创造，共享数字合作成果

Enabling More Organizations to Create Data Value and Share the Benefits of Digital Cooperation

可信数据共享使供应链伙伴能够在不放弃控制权的前提下开展协同分析，改善质量管理、供应链透明度和风险响应，并为数据驱动服务创造条件。开放架构、开源组件和共享知识降低了试验门槛，尤其有助于中小企业、科研团队和青年人才参与，无需各自从零建设复杂体系。通过联合培训、主题交流和示范项目，不同国家、行业和规模的组织能够理解彼此需求、积累技能并形成长期网络。实验室缩短了研究与产业实践的距离，也为国际数据流通积累可验证、可迁移的经验。其平等参与、互信协作和共同受益的方式，有助于减少新的数字壁垒，为携手构建网络空间命运共同体提供务实案例。

Trusted data sharing enables supply-chain partners to conduct joint analysis without surrendering control of their data. It can improve quality management, supply-chain visibility and risk response while creating opportunities for data-driven services. Open architecture, open-source components and shared knowledge lower barriers to experimentation, especially for small and medium-sized enterprises, research teams and young professionals that cannot build complex systems from scratch. Through joint training, thematic exchange and demonstrator projects, organizations from different countries, sectors, and of different sizes can understand one another's needs, build skills and form lasting networks. The Lab narrows the distance between research and industrial practice and develops verifiable, transferable experience for international data exchange. Its model of equal participation, mutual trust and shared benefits helps prevent new digital barriers and provides a practical contribution to building a community with a shared future in cyberspace.



▲ 培训与专题交流帮助不同背景的参与者掌握数据空间知识。
Training and thematic exchange make data-space knowledge accessible to participants with different backgrounds.

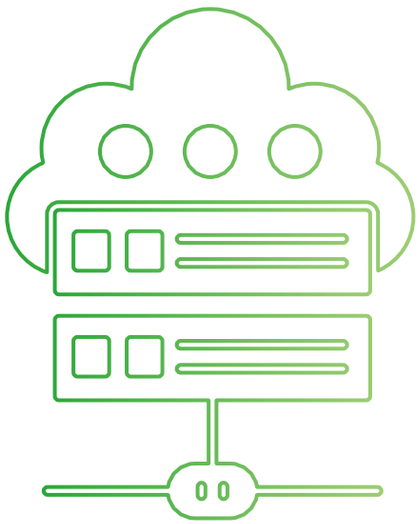
04

网络安全保障
Cybersecurity Maintenance

保障网络安全，促进有序发展

Maintaining Cybersecurity to Promote Orderly Development





精品案例

集思广益防漏洞：卡巴斯基全球反馈机制

A collaborative approach to tackling vulnerabilities: Kaspersky's Global Feedback Mechanism



▲ 政企及学术专家在卡巴斯基遍布各地的透明中心
Experts from governments and the academia visiting Kaspersky's Transparency Centres worldwide

申报机构
Applying Institution

kaspersky 卡巴斯基
Kaspersky

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖西班牙、荷兰、瑞士、土耳其、意大利等18个国家和地区
Covering 18 countries and regions including Spain, the Netherlands, Switzerland, Türkiye, Italy

随着网络攻击规模和复杂性的不断增长，任何单一组织或政府都无法独自应对这些风险。网络韧性的提升依赖于政企和学术界的集体智慧。秉持这一理念，卡巴斯基通过其遍布全球的13个透明中心以及开放式的漏洞赏金计划，系统性地开放源代码，以期获得全球反馈。

As cyberattacks grow in scale and sophistication, no single organization or government can address these risks alone. Increasingly, cyber resilience can only be achieved by leveraging the collective wisdom of governments, companies, and academia, united by their common destiny in cyberspace. In this spirit, Kaspersky has systematically opened its security processes and source code to global feedback, through its network of 13 Transparency Centers worldwide as well as a community-based bug bounty program, to harness such collective wisdom.

全球跨领域专家网络：政府、企业、学术界及安全研究界

A global cross-sector network of experts: governments, companies, academia, and the security research community

2018年，卡巴斯基成为首家开放其源代码的网安公司，供政府官员、监管机构、客户和学术界人士审查。此举旨在验证公开发布的软件版本与他们审查过的源代码是否一致。源代码审查在敏感信息隔离设施 (SCIF) 进行，我们称之为“透明中心”。

自2018年以来，卡巴斯基已投资940万美元，在欧洲、亚洲、中东、拉丁美洲和非洲的13个国家/地区建立了透明中心。在这些设施中，政企和学术界专家已完成了67次审查。

卡巴斯基还通过漏洞赏金计划与全球安全研究界互动。该计划自2022年起与法国独立平台Yogosha 合作运营，Yogosha为该流程提供中立的治理。卡巴斯基邀请全球独立研究人员查找并披露其系统中的漏洞，对于涉及本地权限提升或敏感数据泄露的漏洞，奖励金额为1,000美元至5,000美元；对于发现并协调披露关键漏洞，并提供高质量报告和概念验证演示，奖励金额最高可达100,000美元。

In 2018, Kaspersky became the first cybersecurity company to open up its source code and software development documentation for inspection by government officials, regulators, trusted customers, and academics. This serves to verify that publicly distributed product builds correspond to the source code they have reviewed. To balance between transparency and the protection of Kaspersky's intellectual property rights, source code inspections are conducted through Sensitive Compartmented Information Facilities (SCIF) called Transparency centers.

Recognizing the critical importance of the verification process and the need to ensure equitable access, Kaspersky has established dedicated facilities in 13 countries spanning Europe, Asia, the Middle East, Latin America, and Africa. Kaspersky has invested US$9.4 million since 2018, reflecting a substantial infrastructure commitment to ensure that reviews can be conducted with the rigour that government and institutional partners require. Across these facilities, over 67 reviews have been completed by public and private stakeholders, including national cybersecurity agencies, universities, and enterprise partners.

Kaspersky also engages the global security research community through a structured Bug Bounty Program, operated since 2022 in partnership with Yogosha, a French independent platform that provides neutral governance for the process. Independent researchers worldwide are invited to find and responsibly disclose vulnerabilities in Kaspersky's systems, with rewards ranging from $1,000 to $5,000 for vulnerabilities involving local privilege escalation or sensitive data exposure, and up to $100,000 for the discovery and coordinated disclosure of critical vulnerabilities supported by high-quality reports and proof-of-concept demonstrations.



▲ 卡巴斯基已投资 940 万美元，在欧洲、亚洲、中东、拉丁美洲和非洲的 13 个国家/地区建立了透明中心
Kaspersky has invested US$9.4 million since 2018 to establish Transparency Centres in 13 countries spanning Europe, Asia, the Middle East, Latin America, and Africa.

循序渐进的方法，确保从各方获得有意义的反馈

A graduated approach to ensure meaningful feedback from all fronts

借鉴滑雪的概念，卡巴斯基将源代码检查的不同级别按照“雪道”进行划分。从基础的“蓝道”审查开始，审查内容包括对卡巴斯基公司产品组合的远程或现场概述。中级的“红道”审查将由客户或监管单位对源代码中最关键的部分进行审查。最高级别的“黑道”审查将对源代码中最关键的部分进行最深入的审查。这种循序渐进，冀集思广益。

漏洞赏金计划的出发点是：没有任何一家网安供应商能够掌握所有答案，而我们减少漏洞的最佳途径是通过众包。该框架是卡巴斯基理念的切实体现：唯有所有利益相关方开展开放、包容且持续的合作，方能实现和平安全的网络空间。在共同构建网络空间命运共同体的过程中，卡巴斯基始终致力于深化这些合作关系。

源代码透明化、独立机构审查以及社区驱动的漏洞披露等环环相扣的机制，共同构成了一个全面的框架，缺一不可。

To borrow from a skiing concept, Kaspersky categorized the different levels of source code inspections at based on 'piste'. Starting from the basics, 'blue piste' reviews will involve a remote or onsite overview of Kaspersky's security and transparency best practices, and the company's product portfolio. In the middle tier, a 'red piste' review will involve the most critical parts of the source code by a client or regulatory stakeholder. At the highest tier, a 'black piste' review involves the deepest and most comprehensive review of the most critical parts of Kaspersky's source code. This graduated approach serves to ensure that Kaspersky can receive meaningful feedback across stakeholders of different levels of technical competency.

The operation of a Bug Bounty Program in close collaboration with the global security research community is also based on the recognition that no single security provider will have all the answers, and that our best chance of securing the systems with the least vulnerabilities is through crowdsourcing. The framework is the tangible expression of Kaspersky's approach to cybersecurity governance: that a peaceful and secure cyberspace can only be achieved through open, inclusive, and sustained collaboration among all stakeholders. In jointly building this shared future in cyberspace, Kaspersky remains committed to deepening these partnerships.

Together, these interlocking mechanisms, such as source code transparency, independent facility-based reviews, third-party certifications, and community-driven vulnerability disclosure form a comprehensive framework that no single verification approach could achieve on its own.



▲ 以雪道概念代表不同深度的源代码审查
Borrowing a skiing concept to illustrate the different levels of technical depth for source code reviews

切实反馈增强网络韧性

Tangible feedback that has strengthened cyber resilience

透明中心的源代码审查举措已取得切实成果。在 67 次审查中，尤其是来自学术界的审查，其发现和见解直接指导了卡巴斯基安全框架的改进，弥补了安全漏洞，强化了安全架构。由此形成了一个持续的反馈循环：独立审查不仅验证了现有框架的有效性，而且积极地促进了其稳健性的提升。

漏洞赏金计划迄今为止尚未发现任何重大漏洞，但已奖励了超过74份漏洞报告，赏金总额达93,510 美元。每份报告都代表着一个缺陷在被利用之前被发现、披露并修复，从而直接为数亿用户的网络安全做出了贡献。该计划还遵循已发布的负责任披露的道德原则，进一步加强了卡巴斯基与全球研究界之间的战略互信。

当各国网络安全机构参与技术审查时，其官员能够获得源代码分析和软件成分分析的直接经验，从而增强其监管和监督能力。这种机构能力建设效应是开放协作模式最持久的贡献之一。参与国的地域多样性，涵盖多个地区的发达经济体和发展中经济体，也体现了弥合数字鸿沟、促进公平获取网络安全资源和知识的承诺，这与构建包容、共享的数字未来的目标相一致。

The initiative of source code reviews at Transparency Centres has led to tangible results. From the 67 reviews, especially those from academics, findings and insights from these reviews have directly informed improvements to Kaspersky's security framework, closing gaps, reinforcing architecture, and translating external oversight into measurable strengthening of cyber resilience. The result is a continuous feedback loop in which independent examination not only validates the existing framework but also actively contributes to making it more robust.

From the Bug Bounty Program, while no critical vulnerabilities have been identified to date, more than 74 vulnerability reports have been rewarded, totalling $93,510 in bounty payouts. Each of these reports represents a flaw found, disclosed, and remediated before it could be exploited, thereby directly contributing to security in cyberspace for hundreds of millions of users. The program is further governed by published ethical principles for responsible disclosure, reinforcing strategic trust between Kaspersky and the global research community.

The impact of this framework extends beyond immediate cyber resilience. When national cybersecurity agencies participate in technical reviews, their officials gain direct experience with source code analysis and software composition analysis, strengthening their regulatory and oversight capabilities. This institutional capacity-building effect is among the most enduring contributions of the open collaboration model. The geographic diversity of participating countries, spanning developed and developing economies across multiple regions, reflects a commitment to bridging the digital divide and promoting equitable access to cybersecurity resources and knowledge, consistent with the goal of building an inclusive, shared digital future.

Bug Bounty Program 漏洞赏金计划

$100,000
for the discovery and coordinated disclosure of severe vulnerabilities (high-quality report with PoC).

奖励于发现和协调披露严重漏洞（高质量报告及概念验证）

$5,000 – $20,000
for the discovery of vulnerabilities allowing different and less severe types of remote code execution.

奖励于发现允许执行不同类型和不太严重的远程代码的漏洞。

$1,000 – $5,000
for discovery of bugs allowing local privilege escalation, or leading to sensitive data disclosure.

奖励用于发现允许本地权限提升或导致敏感数据泄露的漏洞。

Since March 2018:
自2018年3月：

74 reports rewarded
$93,510* total bounties
已奖励了超过 74 份漏洞报告，
赏金总额达 93, 510 美元

*No $100k payments for critical vulnerabilities were made as none were reported.

▲ 针对在卡巴斯基系统中发现的最严重缺陷，最高可获得10万美元的奖励
Awards of up to USD $100,000 for the most critical flaws found in Kaspersky's systems

精品案例

香港特区政府：多方联动护航十五运会等重大活动， 保障活动期间跨境网络安全

The Government of the Hong Kong Special Administrative Region: Multi-party Collaboration to Safeguard Cybersecurity for Major Events such as the 15th National Games and Ensure Cross-boundary Cybersecurity



▲ 第十五届全国运动会香港赛区核心场馆及赛事数据跨境安全流动，展现粤港澳跨境协同保障赛事网络安全的重要性
The core venues of the Hong Kong competition region of the 15th National Games and the secure cross-boundary flow of event data, highlighting the importance of Guangdong–Hong Kong–Macao collaboration in safeguarding event cybersecurity

申报机构
Applying Institution

數字政策辦公室 Digital Policy Office

中华人民共和国香港特别行政区政府数字政策办公室
Digital Policy Office, The Government of the Hong Kong Special Administrative Region of the People's Republic of China

其他参与机构
Other Participating Organizations

香港警务处网络安全及科技罪案调查科
The Cyber Security and Technology Crime Bureau of the Hong Kong Police Force

第十五届全国运动会香港特区赛区筹备委员会
The Hong Kong Special Administrative Region Organising Committee of the 15th National Games

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、中国香港、中国澳门，涉及 19 座城市、105 个赛事场馆
Covering China, Hong Kong, China, and Macao, China, encompassing 19 cities and 105 competition venues

第十五届全国运动会首次由粤港澳三地联合承办，人员与数据跨境流动频繁，网络安全挑战凸显。香港特区政府数字政策办公室联合各方构建跨境协同防护体系，为赛事筑牢数字安全防线。

The 15th National Games were jointly hosted by Guangdong, Hong Kong and Macao for the first time. The frequent cross-boundary flow of people and data posed significant cybersecurity challenges. In collaboration with relevant stakeholders, the Digital Policy Office (DPO) of the HKSAR Government established a cross-boundary collaborative cybersecurity protection framework to provide robust digital security safeguards for the Games.

构建粤港澳跨区域协同机制，护航第十五届全运会香港赛区网络安全

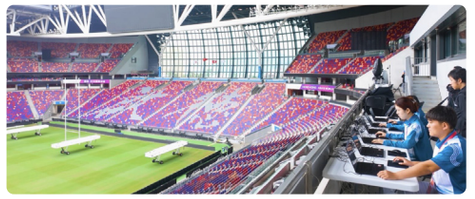
Building a Guangdong-Hong Kong-Macao Cross-Regional Collaboration Mechanism to Safeguard Cybersecurity for the Hong Kong Competition Region of the 15th National Games

2025年，第十五届全国运动会首次采用粤港澳三地联合承办模式，赛事覆盖3个地区19座城市共105个场馆，也是首次在中国港澳地区设置赛事赛区。人员、赛事数据及信息的高频跨境流动，为跨地域网络安全协同治理带来全新挑战。

香港特区政府数字政策办公室积极联同广东、澳门沟通协作，推动技术标准对接、安全信息互通与应急响应联动，联合构建覆盖云、网、数、端的网络安全梯次防护体系，顺利完成云数据中心、竞赛专网、赛事互联网建设，依托专业机构开展攻防演练，以战代练提升防守应急处置能力，持续开展安全风险监测，严格执行常态化安全情况报告，有效保障赛事期间各系统安全运转。全方位筑牢重大赛事数字安全防线，为跨区域大型活动安全治理提供实践参考。

In 2025, the 15th National Games were jointly hosted by Guangdong, Hong Kong and Macao for the first time, with events staged at 105 venues across 19 cities in these three regions. It also marked the first time for the Games to feature competition regions in Hong Kong and Macao. The frequent cross-boundary movement of personnel, competition data and information presented unprecedented challenges to co-ordinated cybersecurity governance across the regions.

The DPO of the HKSAR Government worked closely with Guangdong and Macao to align technical standards, facilitate the exchange of security information and strengthen the emergency response coordination. Together, the three regions established a multi-tiered cybersecurity protection framework encompassing cloud infrastructure, networks, data and endpoints. Under this framework, the cloud data centres, dedicated competition networks and Internet infrastructure for the Games were successfully implemented. With the support from professional organisations, real-life cybersecurity attack and defence drills were also conducted to strengthen defensive capabilities and emergency preparedness. Throughout the Games, cybersecurity risks were subject to continuous monitoring, with regular security status reporting mechanism strictly implemented to safeguard the secure and reliable operation of all information systems. These comprehensive efforts reinforced the digital security defences for this major sporting event and provided a practical reference for the cybersecurity governance of large-scale cross-regional events.



本次网络安全保障的核心防护场景：第十五届全国运动会香港赛区主赛事场馆。
A key focus of the cybersecurity protection efforts for the Games: The Hong Kong competition region of the 15th National Games



▲ 粤港澳三地网络安全协同防护架构，来展现跨境数据传输与安全防护的整体链路。
The Guangdong–Hong Kong–Macao collaborative cybersecurity protection architecture, illustrating the overall end-to-end framework for cross-boundary data transmission and security protection

搭建多层级闭环协同架构，创新跨境跨部门网络安全协作模式

Establishing a Multi-Level Closed-Loop Coordination Framework to Innovate Cross-Boundary and Cross-Departmental Cybersecurity Collaboration

粤港澳三地聚焦跨境大型活动网络安全协同痛点，创新构建“1+4”多层级联络机制，通过双月高层联络会议、双周首席联络官会商、每日联络员对接及24个专项联合工作组，形成“高层协调—联合工作—分领域专班—技术执行”的全链条闭环体系，打通跨境跨部门安全信息壁垒。

在情报协同方面，香港特区政府数字政策办公室联动香港警务处网络安全及科技罪案调查科、国家计算机网络应急技术处理协调中心、香港网络安全事故协调中心等机构，构建跨地域情报共享网络。赛事筹办期间，三地联合处置针对赛事网站开展的漏洞扫描攻击，封堵风险源头。同时，三地常态化开展联合系统测试，持续优化跨境响应流程，为重大活动安全保障提供可复制的范式。

Guangdong, Hong Kong and Macao sought to address the key challenges in cybersecurity collaboration for large-scale cross-boundary events by establishing an innovative “1+4” multi-tiered liaison mechanism. Through high-level liaison meetings held once every two months, bi weekly consultations among chief liaison officers, daily liaison among designated officers, as well as 24 specialised joint working groups, the three regions put in place a comprehensive, closed-loop framework encompassing high-level coordination, joint operations, sector-specific task forces and technical implementation, which facilitated the seamless exchange of security information across boundaries and departments.

In respect of threat intelligence collaboration, the DPO of the HKSAR Government worked with multiple organisations, including the Cyber Security and Technology Crime Bureau of the Hong Kong Police Force, the National Computer Network Emergency Response Technical Team/Coordination Center of China and the Hong Kong Computer Emergency Response Team Coordination Centre, to establish a cross-regional intelligence-sharing network. During the preparation for the Games, the three regions jointly responded to vulnerability scanning attacks launched against the Games websites. With the timely response, the sources of the risks were promptly blocked. Furthermore, regular joint system testing was also conducted to continuously enhance cross-boundary response procedures, providing a replicable model for safeguarding the cybersecurity of major events.



▲ 香港特区政府数字政策办公室在召开十五运会网络安全专项调度会，统筹推进跨境防护工作
The DPO of the HKSAR Government is holding a special cybersecurity coordination meeting for the 15th National Games to coordinate and advance cross-boundary protection efforts



▲ 香港特区政府数字政策办公室与互联网基建联络小组在召开特别会议，协调互联网基建安全保障
The DPO of the HKSAR Government and the Internet Infrastructure Liaison Group are holding a special meeting to coordinate security measures for Internet infrastructure

打造风险导向全流程防护范式，推动技术创新与实战效能深度融合

Establishing a Risk-Based, End-to-End Protection Model and Integrating Technological Innovation with Operational Effectiveness

本次保障首创风险导向的全流程防护模式，构建“赛前评估—实战演练—赛中监测—跨域协同”一体化闭环体系。筹备阶段，联合中国专家团队，对十余个赛事核心系统开展压力测试、渗透检测及红队攻防测试，组织3次粤港澳联合实战演练与系统联调，全面检验技术系统、人员队伍和应急流程的实战防御能力。

赛事期间，综合运用主动威胁捕获、入侵阻断、恶意流量分析及网页合规巡检等手段，实施7×24小时动态监测，处理353万次数据交换，监测79亿次网络活动。创新引入中国自主研发的“盾立方”防御技术，精准识别外部扫描与异常探测，实现网络威胁早发现、早研判、早处置，有效补齐跨境大型活动网络防护短板。该模式可快速复用于各类跨区大型活动，具有广泛推广价值。

A pioneering risk-oriented, end-to-end protection model was adopted for the Games, establishing an integrated, closed-loop framework covering pre-event assessment, practical scenario drills, real-time monitoring during the Games and cross-boundary collaboration. Throughout the preparatory stage, expert teams from the Chinese Mainland were engaged to conduct multiple rounds of stress testing, penetration testing and red-team exercises on more than 10 core information systems for the Games. Three joint practical scenario drills and system integration tests involving Guangdong, Hong Kong and Macao were also conducted, comprehensively testing the operational defence capabilities of the technical systems and personnel, as well as the effectiveness of emergency response procedures.

During the Games, a range of multi-layered protection measures, including proactive threat detection, intrusion prevention, malicious traffic analysis and website compliance inspections, were deployed to provide round-the-clock monitoring, handling 3.53 million data exchanges and monitoring 7.9 billion network activities. The “Shield Cube” cyber defence technology developed by experts from the Chinese Mainland was also introduced for the first time to accurately identify external scanning and anomalous probing activities, enabling early detection, assessment and mitigation of cyber threats and reinforcing cybersecurity protection for large-scale cross-boundary events. The model can be readily replicated for other large-scale cross-regional events and has considerable potential for wider application.



▲ 十五运会香港赛区举行资讯系统桌面演练，检验赛事信息系统应急响应与协同处置能力
A tabletop exercise for information systems was conducted in the Hong Kong competition region of the 15th National Games to test emergency response and coordinated incident-handling capabilities for event information systems



▲ 香港特区政府数字政策办公室开展网络安全实景攻防演练，检验技术系统、人员队伍及应急流程的实战防御能力。
A cybersecurity attack and defence drill organised by the DPO of the HKSAR Government to assess the operational resilience of technical systems, personnel and emergency response procedures.

沉淀跨境安全治理实践经验，形成可复制可推广的普惠安全方案

Consolidating Cross-boundary Cybersecurity Governance Experience to Form a Replicable and Inclusive Security Solution

赛事期间，防护体系累计处置超过千万次网络扫描与恶意探测，依托跨境协同机制，高效完成风险研判、攻击源封堵及跨地域线索处置，保障赛事系统稳定运行，最大限度降低安全风险，确保赛事平稳有序举办。

本次实践形成三项可复制经验：一是统一统筹、分级调度的跨部门组织体系；二是情报互通、联合监测的跨地域协作机制；三是覆盖全周期的闭环防护流程。该标准化方案适用于各类跨境活动和国际会议，为全球跨区域网络安全共治提供实践参考。

During the Games, the protection framework handled over 10 million network scans and malicious probing attempts. The cross-boundary collaboration mechanism enabled prompt risk assessment, swift blocking of attack sources and coordinated follow-up action on relevant leads across the regions. These efforts safeguarded the stable and secure operation of the Games’ information systems, minimised security risks, and supported the smooth and orderly conduct of the Games.

Three replicable practices emerged from this initiative: first, a cross-departmental organisation framework underpinned by central coordination and tiered mobilisation; second, a cross-regional collaboration mechanism supporting intelligence sharing and joint security monitoring; and third, a closed-loop protection process covering the entire event lifecycle. This standardised approach is applicable to various cross-boundary events and international conferences, offering practical reference for collaborative cybersecurity governance across regions worldwide.



▲ 十五运会香港赛区技术运行中心在进行赛事信息系统监测与网络安全保障工作
Technology Operation Centre for the Hong Kong competition region of the 15th National Games is monitoring event information systems and providing cybersecurity support

构筑自卫和护卫结合的工业网络安全防线——守护全球“工业命脉”新方案

Building an Industrial Cybersecurity Line of Defense Integrating Self-Defense and Guarding: A New Solution for Protecting the World's “Industrial Lifelines”



▲ 自卫和护卫结合的工业网络安全新防线
A New Industrial Cybersecurity Line of Defense Integrating Self-Defense and Guarding

申报机构
Applying Institution

广州大学
Guangzhou University

其他参与机构
Other Participating Organizations

奇安信科技集团股份有限公司、软极网络技术(北京)有限公司、雄安盾立方信息技术有限公司、杭州和利时自动化有限公司

Qi An Xin Technology Group Inc., Range Soft Ltd., Xiong' an Shield Cube Ltd., Hollysys Automation Co., Ltd.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

沙特阿拉伯王国、土库曼斯坦
The Kingdom of Saudi Arabia and Turkmenistan

国家工业关键基础设施一旦遭受网络攻击，极易引发灾难性后果。传统防护难应对高隐蔽未知网络攻击。为此，广州大学联合多家单位提出自卫和护卫结合的新型工业网络安全防护体系，为全球工业关基安全提供中国解决方案。

Cyberattacks on national critical industrial infrastructure can easily trigger catastrophic consequences. Traditional defense mechanisms are often inadequate against highly stealthy and unknown cyberattacks. To address this challenge, Guangzhou University, together with several partner organizations, has developed a novel industrial cybersecurity framework integrating self-defense and guarding, providing a Chinese solution for protecting critical industrial infrastructure worldwide.

自卫和护卫协同防护方案守护全球“工业命脉”

A Coordinated Self-Defense and Guarding Solution for Safeguarding the World's “Industrial Lifelines”

广州大学团队提出自卫和护卫结合的新型防御体系，联合多家单位围绕沙特利雅得KAFD单轨铁路系统、土库曼斯坦油气田、国家电网及南方电网调度系统等多个典型核心场景，针对各系统实际运行特点和安全防护需求，分别设计并落地了自卫模式安全方案与护卫模式主动防御方案，通过内外协同成功解决了高隐蔽未知攻击的发现与处置难题。目前，案例已在石油、化工、建材、电力、轨交等关键工业领域成功应用，有效应对了长期存在的高隐蔽网络攻击威胁。该案例的实践验证了其在不同行业、不同业务场景下的广泛适应性，为全球关键基础设施安全保障提供了具备可复制性与推广价值的中国解决方案。

The Guangzhou University team has developed a novel defense framework integrating self-defense and guarding. In collaboration with multiple partner organizations, the team has designed and deployed tailored self-defense security solutions and guarding-mode active defense solutions for several representative critical scenarios, including the KAFD monorail system in Riyadh, Saudi Arabia, oil and gas fields in Turkmenistan, and the dispatching systems of State Grid and China Southern Power Grid. Through coordinated internal and external defense, the framework effectively addresses the detection and mitigation of highly stealthy and unknown cyberattacks. It has already been successfully applied in key industrial sectors including petroleum, chemicals, building materials, power, and rail transit. These applications demonstrate its strong adaptability across different industries and operational scenarios, providing a replicable and scalable Chinese solution for protecting critical infrastructure worldwide.



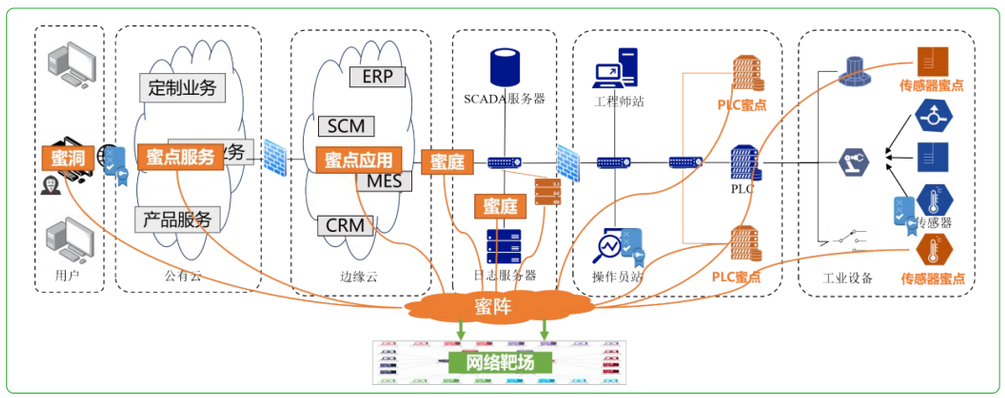
流程工业深度仿真欺骗诱捕系统
Deep simulation deception and trapping system for process industries

自卫和护卫协同的新型工业安全主动防御体系

A Novel Active Defense System for Industrial Cybersecurity Integrating Self-Defense and Guarding

针对高隐蔽未知攻击防护难题，本案例融合传统自卫模式与新型护卫模式，构建新型工业安全防御体系。内部强化自卫防护，深化现有体系，采用硬件资源隔离的双系统架构，构建可信工业控制器，确保攻击来袭时底线不失。外部构建护卫防护，转换思路，不再仅关注“如何保护目标”，而是追踪“攻击者在哪里”，采用“以隐蔽应对隐蔽”策略，搭建跨信息域、控制域和物理域的多维诱捕陷阱，通过设陷感知、逐层诱捕，先期发现高隐蔽威胁。在协同机制上，自卫守底线，护卫主感知，两者通过威胁情报共享与动态联动，形成“外围预警-内部响应”闭环，实现被动防御向主动防御转变。通过协同联动，实现未知威胁先期发现与及时处置，显著提升工控系统防护能力。

To address the challenge posed by highly stealthy and unknown cyberattacks, this case integrates the traditional self-defense mode with a novel guarding mode to establish a new industrial cybersecurity defense framework. Internally, the self-defense capability is reinforced by building on existing protection mechanisms and adopting a hardware-isolated dual-system architecture to construct trustworthy industrial controllers, maintaining a fundamental security baseline even under attack. Externally, the guarding mechanism shifts the focus from simply asking “how to protect the target” to identifying “where the attacker is”. Following the strategy of “using concealment to counter concealment”, multidimensional deception traps are deployed across the information, control, and physical domains to enable threat sensing and layered luring, allowing highly stealthy threats to be detected early. Through threat-intelligence sharing and dynamic coordination, self-defense maintains the security baseline while guarding provides proactive threat awareness, forming a closed loop of “perimeter early warning–internal response”. This coordinated mechanism enables the transition from passive protection to active defense, supporting the early detection and timely mitigation of unknown threats and significantly enhancing the cybersecurity of industrial control systems.



工控自卫和护卫结合防护典型方案
A typical industrial control protection solution combining self-defense and guard protection

新型防御体系赋能全球工业安全

A New Defense Framework Empowering Global Industrial Cybersecurity

在方滨兴院士护卫模式防护思路指导下，田志宏教授带领团队依托多个国家级项目牵头完成新型工业网络安全防护体系及相关系统，成果已在电力、轨交、石油、化工、建材等行业应用，销售金额逾3000万元；在中国，为国网、南网等重要行业企业网络安全防护，助力江西电力以“零安全事故”表现完成各级实战攻防演练50余次，在国网季度实战攻防防守单位排名第一，得到用户一致好评。在国际上，有力支撑了位于沙特利雅得的KAFD单轨铁路系统、土库曼斯坦油气田的安全防护，在满足国际标准和本地安全合规要求前提下，确保了可用性和安全性平衡。案例可推广应用于“一带一路”沿线国家的炼油、化工、电力等关基设施，助力其以较低成本构建新型安全防御体系。

Guided by Academician Fang Binxing's concept of guarding-mode defense, Professor Tian Zhihong and his team have led the development of a novel industrial cybersecurity defense framework and related systems through multiple national-level projects. The resulting technologies have been deployed in the power, rail transit, petroleum, chemical, and building-materials industries, generating more than RMB 30 million in sales.

In China, the solutions have supported the cybersecurity protection of major industrial enterprises including State Grid and China Southern Power Grid. In particular, they enabled Jiangxi Electric Power to complete more than 50 practical cyber offense-and-defense exercises with zero security incidents and to rank first among defending units in State Grid's quarterly exercises, receiving strong recognition from users. Internationally, the solutions have provided effective cybersecurity protection for the KAFD monorail system in Riyadh, Saudi Arabia, and oil and gas fields in Turkmenistan, achieving a balance between system availability and security while meeting international standards and local cybersecurity compliance requirements.

The framework can also be extended to critical infrastructure in refining, chemical, power, and other sectors in countries participating in the Belt and Road Initiative, helping them establish advanced cybersecurity defense systems at relatively low cost.



▲ 油气田工控安全防护场景
Security Protection Scenarios for Industrial Control in Oil and Gas Fields

DataCon 安全分析竞赛：实战化赛事、国际化育才

DataCon Security Analysis Competition: A Real-World Contest for Global Talent Development



▲ DataCon：中国首个安全大数据分析竞赛
DataCon: Chinese First Security Big Data Analytics Competition

申报机构
Applying Institution

奇安信科技集团股份有限公司
Qi An Xin Technology Group Inc.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、中国香港、中国澳门、美国、英国、新加坡、卡塔尔、马来西亚、印度等9个国家和地区

Covering nine countries and regions including China; Hong Kong, China; Macao, China; the United States; the United Kingdom; Singapore; Qatar; Malaysia; and India.

网络安全人才短缺是全球共同挑战。DataCon是首个由中国网络安全企业发起的国际化安全分析竞赛，自2019年起以真实攻防数据为纽带，面向全球培养实战型安全人才，推动协同育人与技术共享。

The shortage of cybersecurity talent is a shared global challenge. DataCon, the first international security analysis competition initiated by a Chinese cybersecurity company, has been cultivating hands-on security talent worldwide since 2019, using real attack-and-defense data to promote collaborative talent development and technology sharing.

实战场景，全球团队踊跃参与
Practical Scenarios and Global Participation

DataCon自2019年起已连续开展七届，赛事规模与专业度持续提升，不同于偏向攻击破解的单一领域竞赛，本赛事覆盖安全、数据、人工智能交叉领域，紧贴网络安全真实防护需求，是全球最贴近实战需求的安全赛事之一。累计吸引了美国东北大学、英国圣安德鲁斯大学和爱丁堡大学、卡塔尔哈马德·本·哈利法大学、新加坡南洋理工大学和国立大学、香港大学、澳门大学等全球高校和企业近3000支队伍、12000余人参赛，形成覆盖北美、欧洲、亚洲等多地理区域的国际化参与格局。此外在赛事的基础上，DataCon累计发布30份高质量安全数据集，具备极高科研学术价值，已吸引马来西亚理工大学和印度理工学院等全球300余所高校及科研机构的800余名科研人员申请使用，孵化出网络安全四大顶会在内的一系列论文等科研成果。

Since its inception in 2019, DataCon has successfully conducted seven consecutive editions, with continuous enhancement in both scale and professional standards. Distinguished from single-domain competitions focusing primarily on offensive penetration techniques, this competition encompasses interdisciplinary domains including security, data science, and artificial intelligence, closely aligned with actual cybersecurity protection requirements, positioning it as one of the security competitions most closely aligned with practical operational needs globally. The competition has cumulatively attracted nearly 3,000 teams and over 12,000 participants from universities and enterprises worldwide, including Northeastern University (USA), University of St Andrews and The University of Edinburgh (UK), Hamad Bin Khalifa University (Qatar), Nanyang Technological University and National University of Singapore (Singapore), The University of Hong Kong and University of Macau, establishing an international participation pattern covering North America, Europe, Asia, and other geographical regions. Furthermore, building upon the competition foundation, DataCon has released 30 high-quality security datasets possessing significant research and academic value, attracting applications from over 800 researchers at more than 300 universities and research institutions globally, including Universiti Teknologi Malaysia and Indian Institutes of Technology, incubating a series of research achievements including papers published in top four cybersecurity conferences.



▲ 部分参赛人员合照 / Some participants' group photo



▲ 发表网络安全四大顶会论文
Publishing papers at the top security conferences

模式创新，打造协同育人新范式

Model Innovation: Establishing a New Paradigm for Collaborative Talent Cultivation

DataCon首创“实战、共享、教学”三位一体模式，一是实战化比赛，采用真实攻防场景的脱敏数据，构建仿真的实战场景，设立半开放的探索性题目，不设立唯一标准答案，目的是用贴近真实实战攻防的场景来考察选手的能力。二是数据共享，不同于只对特定对象开放数据的DARPA竞赛，本赛事沉淀近30份高质量安全数据集，赛道从最初DNS恶意流量检测、恶意软件分析、网络威胁溯源等3个方向，拓展到涵盖网络流量、网络黑产、软件安全、邮件安全、AI安全、物联网安全、域名体系安全等7大领域，以更多种类的数据集，开创性地面向全球高校与科研机构免费共享，用于支持科研成果的产出和验证。三是促进教学，东南大学基于DataCon平台开设了“网络入侵检测与数字取证”课程；清华大学、电子科大、国防科大、中山大学等将其纳入实验课或学分考核，形成独特的“赛—教—研”闭环生态，并获得教育部网络空间安全产学协同育人优秀案例评选一等奖。

DataCon pioneered the "Practice-Sharing-Teaching" tripartite integrated model. First, practical competition implementation utilizes anonymized data from authentic attack and defense scenarios to construct simulated practical environments, featuring semi-open exploratory challenges without predetermined standard answers, designed to assess participants' capabilities through scenarios closely resembling real-world operational attack and defense situations. Second, data sharing distinguishes itself from DARPA competitions which restrict data access to specific entities; this competition has accumulated nearly 30 high-quality security datasets, expanding from initial three directions including DNS malicious traffic detection, malware analysis, and network threat attribution to encompass seven major domains: network traffic, underground industry, software security, email security, AI security, IoT security, and domain name system security. These diverse dataset categories are innovatively made available to global universities and research institutions without charge, supporting the generation and validation of research outcomes. Third, pedagogical promotion is evidenced by Southeast University establishing the "Network Intrusion Detection and Digital Forensics" course based on the DataCon platform; Tsinghua University, University of Electronic Science and Technology of China , National University of Defense Technology , Sun Yat-sen University and others have incorporated it into experimental courses or credit assessment systems, forming a distinctive "Competition-Teaching-Research" closed-loop ecosystem, receiving the First Prize in the Ministry of Education's "Excellent Cases of Industry-Academia Collaborative Talent Cultivation in Cyberspace Security".



第三届网络空间安全产学协同育人优秀案例评选一等奖
First Prize, 3rd Excellent Case Selection in Industry-Academia Collaborative Talent Cultivation in Cyberspace Security



东南大学课程赛（第四届）

主办方：DataCon | 东南大学网络空间安全学院

东南大学 课程赛

▲ 专业课程深度融合 / Deep Integration of Professional Courses

全域生态赋能 ，DataCon 助力构建网络空间命运共同体

Comprehensive Ecosystem Empowerment: DataCon Contributing to Building a Community with a Shared Future in Cyberspace

DataCon竞赛紧密契合网络强国等国家目标，累计培养大批实战型安全人才，有效缓解人才短缺困境。竞赛构建“实战、共享、教学”全生命周期协同体系，对网络安全教育、学术研究及产业发展具有多维积极意义，形成从能力培养到知识传播、从资源开放到成果转化的完整生态链条，实现了从单一竞赛向全方位人才培养平台的跨越式升级。搭建的国际化交流平台，促进了不同国家和地区在网络安全领域的学术交流与技术合作，推动了全球网络安全研究社区的协同发展，为构建网络空间命运共同体提供了实践支撑。DataCon的成功实践展示了中国在全球网络空间安全领域的开放态度和合作精神，为推动全球网络空间治理体系的完善贡献中国智慧和中国方案。

DataCon competition closely aligns with national strategic objectives including cyber power development, having cumulatively cultivated numerous practical cybersecurity professionals, effectively alleviating the talent shortage challenge. The competition has constructed a "Practice-Sharing-Teaching" full-lifecycle collaborative system, generating multidimensional positive significance for cybersecurity education, academic research, and industrial development -- forming a complete ecological chain from capability cultivation to knowledge dissemination, from resource openness to achievement transformation, achieving a transformative upgrade from a single competition to a comprehensive talent cultivation platform. The established international exchange platform has facilitated academic exchange and technical cooperation in the cybersecurity field among different countries and regions, promoted collaborative development within the global cybersecurity research community, and provided practical support for building a community with a shared future in cyberspace. The successful practice of DataCon demonstrates China's open attitude and cooperative spirit in the global cyberspace security domain, contributing Chinese wisdom and approaches to promoting the improvement of the global cyberspace governance system.



▲ 创建 InForSec 网安国际论坛交流社区
Establishing the InForSec International Cybersecurity Forum Community

360图龙锋首创AI安全攻防体系，为全球AI时代网络安全治理提供“中国方案”

360 Tulongfeng Pioneers an AI-Powered Cybersecurity Offense-and-Defense System, Offering a Chinese Approach to Cybersecurity Governance in the Global AI Era



申报机构
Applying Institution

三六零安全科技股份有限公司
360 Security Technology Inc.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、美国及欧洲多个国家和地区
Covering China, the United States, and multiple countries and regions in Europe

漏洞是数字世界与生俱来的“基因缺陷”，可沿全球数字供应链跨境扩散。当前，AI技术将漏洞发现从“人的速度”推向“机器速度”，重塑网络安全攻防范式。360基于图龙锋实现批量化、智能化漏洞挖掘，推动漏洞治理协同升级，为全球网络安全治理提供实践路径。

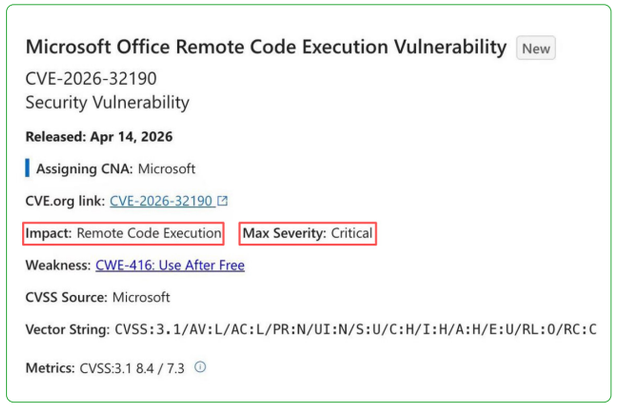
Vulnerabilities are inherent “genetic flaws” of the digital world and can spread across borders through global digital supply chains. AI is accelerating vulnerability discovery from human speed to machine speed, reshaping cybersecurity offense and defense. With Tulongfeng, 360 enables intelligent, large-scale vulnerability discovery and advances collaborative governance, providing a practical path for global cybersecurity.

以AI提升全球漏洞治理能力，筑牢全球数字生态安全防线
Using AI to Strengthen Global Vulnerability Governance and Safeguard the Global Digital Ecosystem

面向全球基础软件、AI产品和开源生态，360图龙锋累计发现漏洞超10000个，超200个获国家信息安全漏洞库等权威机构核验确认，覆盖Windows、Office、AI编程工具、操作系统、物联网设备、OA系统等领域。其中，发现潜伏近5年的Windows内核提权漏洞、潜伏8年的Office远程代码执行漏洞；在OpenClaw生态中，对核心框架及10款衍生产品开展系统化审计，确认23处独立漏洞；还在OpenAI Codex、Claude Code、Flowise、Hermes等国际AI产品和开源项目中发现多项严重、高危漏洞，并推动厂商完成确认、修复与复测，将技术发现转化为惠及全球的安全价值。苏黎世联邦理工学院安全研究中心出具专项评估，对图龙锋 AI 漏洞挖掘技术能力予以专业肯定。

Serving global foundational software, AI products and open-source ecosystems, 360 Tulongfeng has discovered more than 10,000 vulnerabilities, over 200 of which have been verified by authoritative vulnerability databases and institutions including the China National Vulnerability Database of Information Security (CNNVD). Its coverage spans Windows, Office, AI coding tools, operating systems, IoT devices and office automation (OA) systems. Notable findings include a Windows kernel privilege-escalation vulnerability that had remained undiscovered for nearly five years and an Office remote-code-execution vulnerability hidden for eight years.

In the OpenClaw ecosystem, Tulongfeng conducted systematic audits of the core framework and 10 derivative products, confirming 23 independent vulnerabilities. It has also uncovered multiple critical and high-severity vulnerabilities in international AI products and open-source projects including OpenAI Codex, Claude Code, Flowise and Hermes, and worked with vendors through confirmation, remediation and retesting, turning technical discoveries into security value for users worldwide. A security research center at ETH Zurich also issued a dedicated assessment recognizing Tulongfeng’s AI-based vulnerability discovery capabilities.



360图龙锋发现Office远程代码执行漏洞获微软安全响应中心（MSRC）致谢
360 Tulongfeng received acknowledgment from the Microsoft Security Response Center (MSRC) for discovering an Office remote code execution vulnerability.

创新“安全基座大模型+专业智能体蜂群”架构，实现漏洞挖掘从专家经验到规模化智能作业

An Innovative “Cybersecurity Foundation Model + Specialized Agent Swarm” Architecture Scales Expert Vulnerability Research into Intelligent Operations

不同于主要依赖规则匹配和已知漏洞特征的传统扫描工具，图龙锋采用“安全领域大模型+专业智能体蜂群”技术路线，将360长期积累的漏洞数据、攻防专家经验、分析方法和安全工具融入统一工作流。安全基座大模型负责理解复杂代码、业务逻辑和权限关系，不同专业智能体分别承担攻击面梳理、代码分析、漏洞推理、动态验证和工具调用，并通过协同工作持续还原潜在攻击路径。其核心创新，是将过去高度依赖少数顶尖专家个人经验的漏洞挖掘方法，转化为可复制、可持续运行的智能能力，并形成“发现—分析—验证—报送—修复—复测”完整闭环，推动漏洞治理从人工驱动、事后响应，进一步走向智能协同、主动发现和规模化治理。

Unlike traditional scanners that rely mainly on rule matching and signatures of known vulnerabilities, Tulongfeng follows a “Cybersecurity Foundation Model + Specialized Agent Swarm” architecture. It integrates 360’s long-term accumulation of vulnerability data, offensive and defensive expertise, analytical methods and security tools into a unified workflow. The cybersecurity foundation model interprets complex code, business logic and permission relationships, while specialized agents divide tasks such as attack-surface mapping, code analysis, vulnerability reasoning, dynamic validation and tool invocation. Through collaboration, they continuously reconstruct potential attack paths. The key innovation is converting vulnerability-discovery methods that once depended heavily on the personal experience of a small number of elite researchers into reproducible, continuously operating intelligent capabilities. Tulongfeng also establishes an end-to-end loop of “discovery-analysis-validation-reporting-remediation-retesting”, moving vulnerability governance beyond human-driven, post-incident response toward intelligent collaboration, proactive discovery and governance at scale.



▲ 360图龙锋多智能体协作链路视图
Multi-agent collaboration workflow in 360

将高水平漏洞研究能力规模化、智能化，提升全球漏洞治理能力

Scaling Advanced Vulnerability Research with AI to Strengthen Global Vulnerability Governance

从经济效益看，图龙锋将过去高度依赖少数顶尖专家的漏洞研究方法转化为可规模化运行的智能能力，能够缩短漏洞发现和处置周期，降低长期依赖人工专家带来的时间与人力成本，并通过提前发现、推动修复深层漏洞，减少业务中断、数据泄露和系统破坏造成的潜在经济损失；从社会效益看，规模化的基础软件与AI生态漏洞治理，可将风险处置前移至大规模利用和扩散之前，更早保护全球用户终端和关键基础设施安全。与此同时，图龙锋通过降低高水平漏洞研究的使用门槛，让更多不同规模、不同领域的企业和机构获得主动发现未知风险的能力，推动专业安全能力由少数专家经验驱动走向规模化应用，为全球软件、开源社区与 AI 系统安全治理输出可复制、可推广的中国实践样本，助力建设安全稳定可信的网络空间命运共同体。

From an economic perspective, Tulongfeng turns advanced vulnerability research—previously dependent on a small number of elite experts—into an intelligent capability that can operate at scale. This can shorten discovery and remediation cycles, reduce the time and labor costs associated with sustained reliance on manual expertise, and lower potential losses from service disruption, data breaches and system damage by finding and helping fix deep-seated vulnerabilities earlier. From a social perspective, large-scale vulnerability governance across foundational software and AI ecosystems moves risk mitigation upstream, before vulnerabilities can be widely exploited or propagated, providing earlier protection for users and critical infrastructure worldwide. By lowering the barrier to advanced vulnerability research, Tulongfeng also enables organizations of different sizes and sectors to proactively identify unknown risks. This helps transform professional security capabilities from scarce expert knowledge into scalable services and offers a replicable and scalable practice from China for the governance of global software, open-source communities and AI systems, contributing to a safer, more stable and trustworthy community with a shared future in cyberspace.



◀ 360为全球AI安全治理提供“中国方案”
360 Provides a "China Solution" for Global AI Security Governance

推动漏洞治理模式升级，为全球AI安全协同治理贡献实践参考

Advancing Vulnerability Governance to Support Collaborative AI Security Worldwide

360凭借图龙锋入选工信部通用网络产品、工业控制产品、信创政务产品、移动互联网APP、车联网、人工智能产品六大漏洞专业库技术支撑单位；在第六届“天府杯”国际网络空间安全大赛中获“最佳漏洞发现团队”，并获开源鸿蒙社区“漏洞挖掘突出贡献团队”、华为终端安全奖励计划一等奖。相关技术成果还获CCF科技成果奖技术发明一等奖，持续获得权威漏洞平台、国际赛事以及全球产业生态的多方肯定，为行业探索AI驱动漏洞治理提供重要参照。

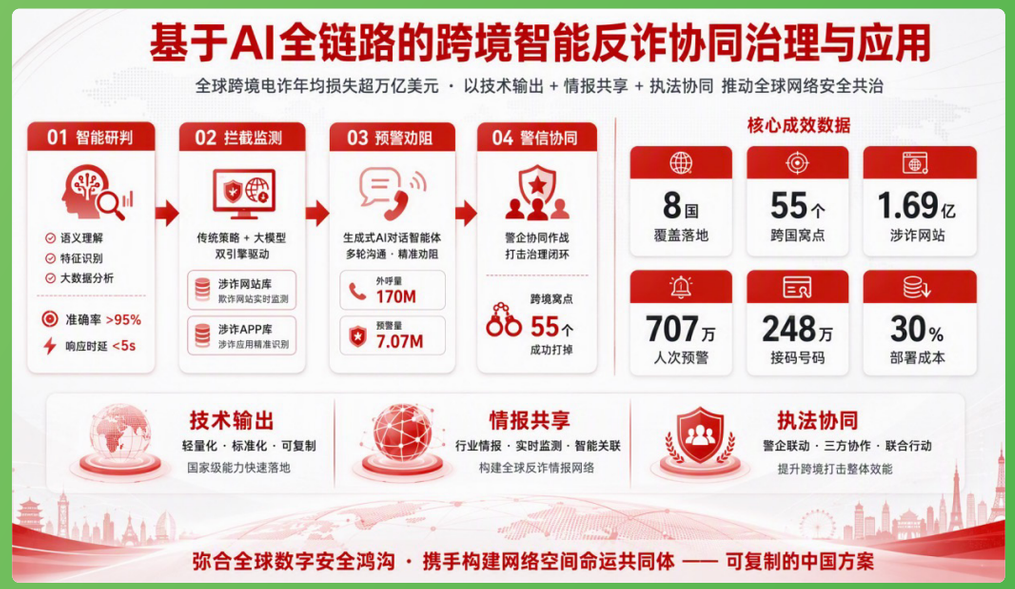
With Tulongfeng as a key technical capability, 360 was selected as a technical support organization for six specialized vulnerability databases under China's Ministry of Industry and Information Technology, covering general network products, industrial control products, information technology application innovation and e-government products, mobile Internet applications, Internet of Vehicles, and AI products. At the 6th Tianfu Cup International Cybersecurity Competition, 360 won “Best Vulnerability Discovery Team”, and also received recognition from the OpenHarmony community for outstanding contributions to vulnerability discovery and First Prize in the Huawei Device Security Reward Program. Related technologies also won First Prize for Technological Invention in the CCF Science and Technology Achievement Awards. These recognitions from authoritative vulnerability platforms, international competitions and industry ecosystems provide a practical reference for AI-driven vulnerability governance.



360 图龙锋获国际赛事认可
360 Tulongfeng recognized at an international cybersecurity

基于AI全链路的跨境智能反诈协同治理与应用

AI-Powered Full-Chain Cross-Border Intelligent Anti-Fraud Collaborative Governance and Application



▲ 面向全球跨境诈骗态势，以AI全链路能力驱动多国协同反诈治理，为构建网络空间命运共同体提供技术支撑。
Facing the global surge of cross-border fraud, this solution leverages AI full-chain capabilities to drive multi-nation collaborative anti-fraud governance, providing technical support for building a community with a shared future in cyberspace.

申报机构
Applying Institution

中国联通国际有限公司
China Unicom Global Limited

其他参与机构
Other Participating Organizations

中国联通（香港）创新研究院、中讯邮电咨询设计院有限公司、香港人工智能与数字安全协会、博安（香港）科技有限公司

China Unicom (Hong Kong) Innovation Research Institute
China Information Technology Design & Consulting Institute Co., Ltd.
Hong Kong Artificial Intelligence and Digital Security Association
Choiceway Boan (Hong Kong) Technology Co., Limited

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖埃及,澳大利亚,阿联酋,白俄罗斯,巴基斯坦等49个国家和地区
Covering 49 countries and regions, including Egypt, Australia, the United Arab Emirates, Belarus, Pakistan

全球跨境电诈年均损失超万亿美元，发展中国家反诈技术储备薄弱。打造AI全链路跨境智能反诈体系，以技术输出、情报共享、执法协同推动全球网络安全共治。

Global cross-border telecom fraud causes over one trillion USD in annual losses, while developing countries lack sufficient anti-fraud technical capabilities. An AI-powered full-chain, cross-border intelligent anti-fraud system has been built, advancing global cybersecurity governance through technology transfer, intelligence sharing, and law enforcement collaboration.

技术创新与能力底座：筑牢全球反诈治理技术基石
Technical Innovation and Capability Foundation: Consolidating the Technical Cornerstone for Global Anti Fraud Governance

方案已在东南亚、非洲8国落地，与泰国、印尼等5国主流运营商及警务部门建立深度合作，部署轻量化国家级反诈预警系统。立足香港国际通信枢纽，协助捣毁跨国诈骗窝点55个，并在金融机构打通开卡风险核验、潜在受害人预警等跨境协同场景。通过公开情报监测覆盖5类黑灰产7000余个群组，识别接码平台329个、接码号码248万个，服务辐射"一带一路"沿线地区，形成"技术输出+情报共享+执法协同"的成熟合作模式。同步为合作方搭建本地运维团队并开展技术培训，保障系统长期稳定运行，形成"授人以渔"的可持续合作。

The solution has been deployed across eight countries in Southeast Asia and Africa, establishing deep cooperation with major carriers and law enforcement agencies in five countries including Thailand and Indonesia, and deploying lightweight national-level anti-fraud warning systems. Based in Hong Kong's international telecommunications hub, it has assisted in dismantling 55 transnational fraud syndicates and enabled cross-border collaborative scenarios with financial institutions, including card-issuance risk verification and potential victim alerting. Through open-source intelligence monitoring, it covers over 7,000 groups across five categories of black-market activities, identifying 329 SMS verification-code platforms and 2.48 million associated numbers. Services extend along the Belt and Road regions, forming a mature cooperation model of "technology transfer + intelligence sharing + law enforcement collaboration". Concurrently, local operations teams and technical training are provided to partners, ensuring long-term system stability and sustainable cooperation.



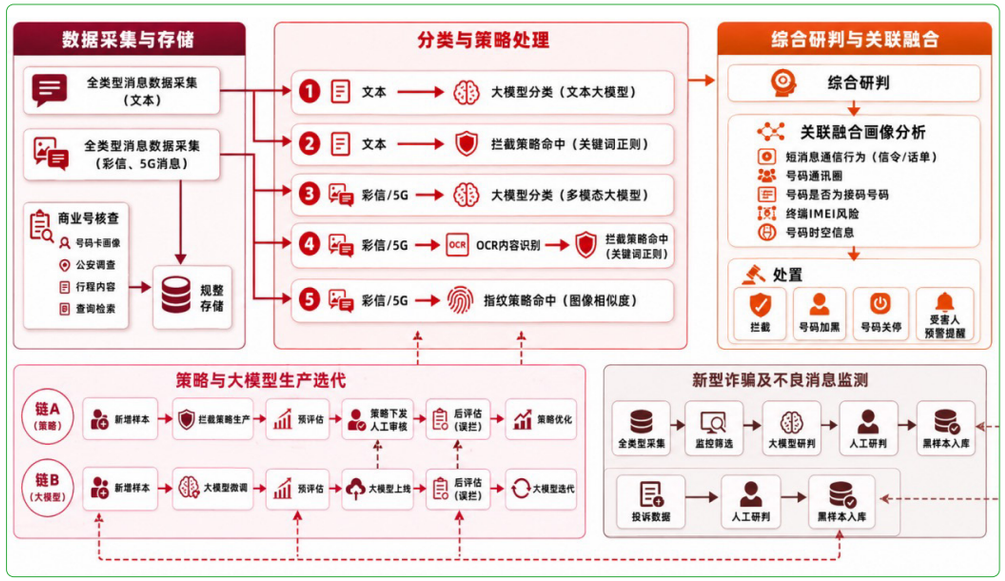
▲ 互联网资源风险监测处置系统功能架构
Functional Architecture of the Internet Resource Risk Monitoring and Disposal System

全场景落地与效能转化：驱动跨境反诈治理能级跃升

Full Scenario Implementation and Efficiency Transformation: Driving the Upgrade of Cross Border Anti Fraud Governance Capability

构建网址、短信、国际来话多维研判与统一预警体系。融合语言、视觉与机器学习模型，形成"语义理解→特征识别→大数据分析"闭环研判链，建设百万级全球诈骗网站及APP特征库，研判准确率超95%、单条时延低于5秒，2026年累计研判网站5亿个、识别涉诈网站1.69亿、涉诈APP69万个；集成"元景"大模型实现文本短信智能分类，构建"传统策略+大模型"双引擎全消息监测识别体系；针对国际来话涉诈日益攀升的严峻态势，构建涉诈特征库与风险号码检出模型，百万涉案量从月均20.5降至月均2.3。三线研判结果汇入统一预警引擎，对潜在受害人实时定级、优先触达，打造反诈对话生成式智能体，打破传统流程式对话局限，实现"用户说完一机器人开口"的实时智能交互，以生成式对话深度延缓诈骗进程、提升预警劝阻效果，内生安全通过率99.6%、端到端时延1.5秒内，2026年累计外呼1.7亿通、预警提醒707万人次。

A multi-dimensional assessment and unified warning system is constructed across websites, SMS, and international incoming calls. By integrating language, vision, and machine learning models, a closed-loop assessment chain of "semantic understanding → feature identification → big data analysis" is formed. A million-scale global fraudulent website and APP signature database is built, achieving assessment accuracy above 95% with per-item latency under 5 seconds; by 2026, a cumulative 500 million websites have been assessed, identifying 169 million fraudulent websites and 690,000 fraudulent APPs. The "Yuanjing" large model is integrated for intelligent SMS text classification, building a dual-engine full-message monitoring and identification system combining "rule-based strategies + large model". Addressing the escalating threat of fraud via international incoming calls, a fraud signature database and risk number detection model are constructed, reducing fraud incidence per million calls from a monthly average of 20.5 to 2.3. Assessment results from all three lines converge into a unified warning engine, enabling real-time risk grading and priority outreach to potential victims. An anti-fraud generative dialogue agent is developed, breaking through traditional scripted-conversation limitations to achieve real-time intelligent interaction where "the user finishes speaking—the agent responds instantly", leveraging generative dialogue to deeply delay fraud progression and enhance warning and persuasion effectiveness, with an intrinsic safety pass rate of 99.6% and end-to-end latency within 1.5 seconds. By 2026, cumulative AI outbound calls reached 170 million, alerting 7.07 million individuals.



▲ 全消息治理平台运营流程
Operational Workflow of the Full-Message Governance Platform



▲ 国际话务运营管理系统功能架构
Functional Architecture of the International Traffic Operations Management System

全球共治与普惠愿景：共绘网络空间安全共同体蓝图

Global Co Governance and Inclusive Vision: Jointly Forging the Blueprint for a Cyberspace Security Community

模块化部署成本仅为传统反诈体系的30%，发展中国家无需从零搭建即可快速具备全场景反诈能力，显著降低技术准入门槛，弥合全球数字安全鸿沟。累计为国际合作方培训技术运维人员200余名，赋能属地反诈人才建设。方案将持续拓展全球覆盖、深化与各国监管机构及运营商合作、迭代反诈技术能力，为全球跨境网络安全治理提供可落地、可复制的中国方案，助推网络空间命运共同体建设。

Modular deployment costs only 30% of traditional anti-fraud systems, enabling developing countries to rapidly acquire full-scenario anti-fraud capabilities without building from scratch, significantly lowering technical barriers and bridging the global digital-security divide. Over 200 technical operations personnel have been trained for international partners, empowering local anti-fraud talent development. The solution will continue expanding global coverage, deepening cooperation with regulatory authorities and carriers across countries, and iterating anti-fraud capabilities—providing a deployable and replicable Chinese solution for global cross-border cybersecurity governance and advancing the building of a community with a shared future in cyberspace.

标准引领与技术沉淀，持续夯实反诈治理知识底座

Standards Leadership and Technical Accumulation: Continuously Consolidating the Anti-Fraud Governance Knowledge Foundation.

方案已产出6篇学术论文、15项专利与软件著作权，牵头制定4项行业标准。日均研判涉诈网站超250万个、分析涉诈APP超5000个，覆盖语音、短信、互联网全业务线反诈治理，在中国反诈技术领域保持领先地位。

The solution has produced 6 academic papers, 15 patents and software copyrights, and led the development of 4 industry standards. It daily assesses over 2.5 million fraudulent websites and analyzes over 5,000 fraudulent APPs, covering anti-fraud governance across voice, SMS, and internet service lines, maintaining a leading position in China's anti-fraud technology landscape.

西门子安全合规平台 — 构建全球绿色合规网络安全新生态

Siemens Secure Compliance Platform: Building a New Global Green Cybersecurity Compliance Ecosystem



▲ 西门子安全合规平台 — 构建全球绿色合规网络安全新生态
Siemens Secure Compliance Platform: Building a New Global Green Cybersecurity Compliance Ecosystem

申报机构
Applying Institution

SIEMENS

西门子（中国）有限公司
Siemens Ltd., China

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖德国、奥地利、比利时、保加利亚、克罗地亚等27个国家和地区
Covering 27 countries and regions including Germany, Austria, Belgium, Bulgaria, Croatia

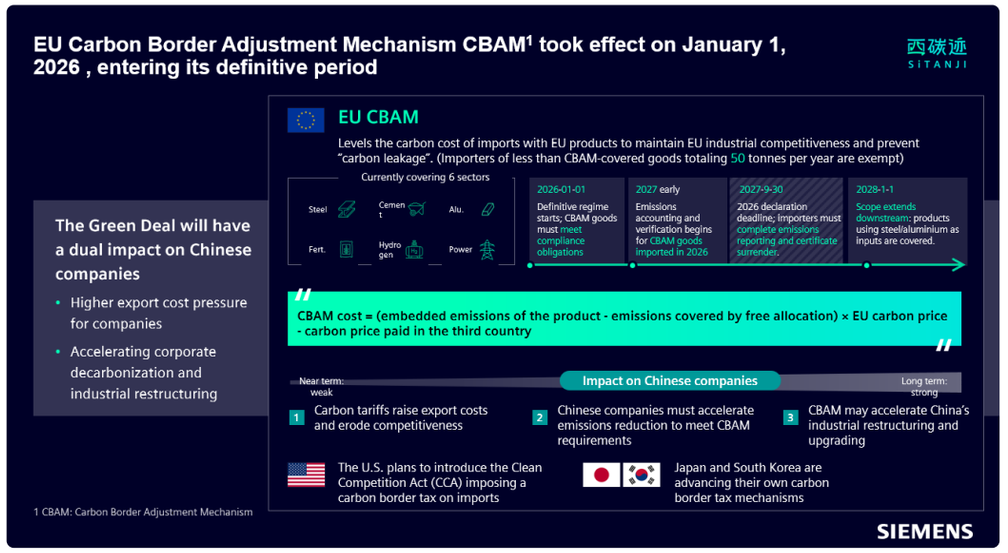
全球网络安全与低碳合规监管趋严，跨国制造企业面临跨境合规难题。西门子安全合规平台面向全球市场，打造一体化合规服务体系，助力产业安全绿色协同发展。

Against tightening global cybersecurity and low-carbon compliance regulations, multinational manufacturers face cross-border compliance challenges. The Siemens Secure Compliance Platform builds an integrated service system to advance secure and green industrial collaboration worldwide.

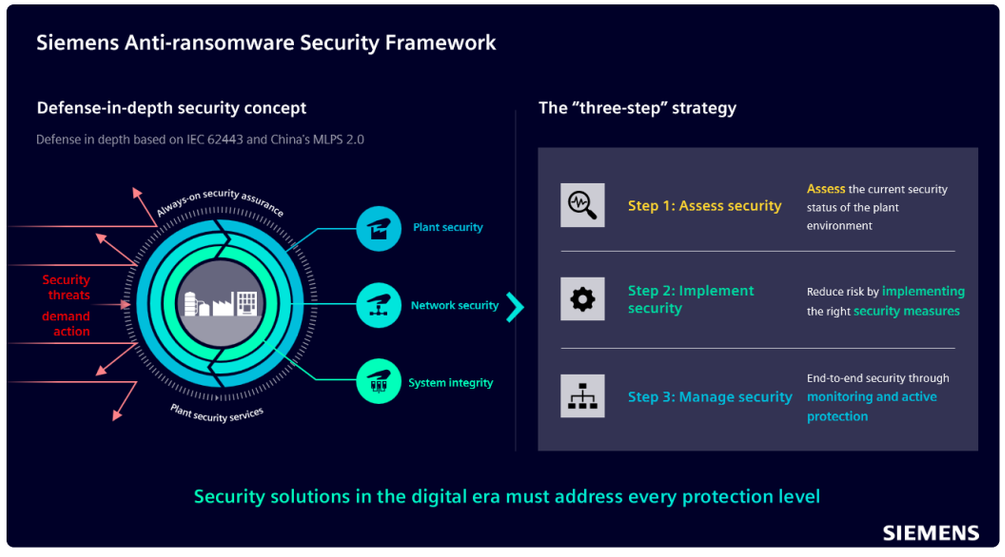
锚定合规发展导向，一站式化解全球经营跨境风险
Prioritize Compliance-driven Development to Eliminate Cross-border Risks for Global Operations in One Stop

全球工业企业跨境经营持续提速，多项国际网络安全、低碳新规密集落地，国际合规门槛持续抬升。跨国企业普遍面临国际运营管控复杂、各国合规标准不统一、碳足迹全链条追溯能力不足等现实挑战。仅依靠单点技术整改难以适配持续迭代更新的全球监管规则。制造业亟需一套整合全球资源、适配大中小企业的一体化合规解决方案，有效化解跨境合规风险，推动全球数字贸易规范有序发展。西门子安全合规平台由此应运而生，面向全球制造业主体提供网络安全与低碳合规综合服务。

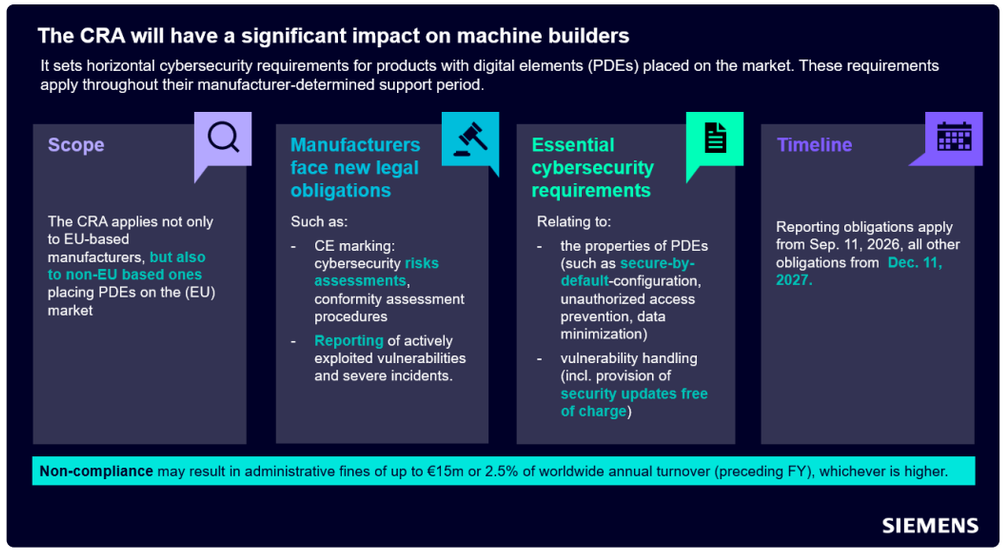
Industrial enterprises worldwide are accelerating cross-border deployment. Multiple new international regulations on cybersecurity and low-carbon development have been rolled out, raising global compliance thresholds. Multinational enterprises are confronted with complex international governance, inconsistent national compliance standards and insufficient full-chain carbon-footprint tracing capacity. Isolated technical adjustments cannot keep pace with constantly updated global regulatory requirements. The manufacturing sector urgently needs an integrated compliance solution leveraging global resources for enterprises of all sizes to mitigate cross-border compliance risks and foster well-regulated global digital trade. Against this backdrop, the Siemens Secure Compliance Platform was launched to deliver comprehensive cybersecurity and low-carbon compliance services for global manufacturers.



▲ 欧盟碳边境调节机制法案CBAM1已于2026年1月1日生效，进入正式运行期
The EU Carbon Border Adjustment Mechanism (CBAM 1) took effect on 1 January 2026, marking the start of its formal operational period



▲ 西门子防勒索攻击安全体系 / Siemens Anti-Ransomware Security System



▲ 欧盟网络韧性法案（CRA）将对制造商产生重大影响
The EU Cyber Resilience Act (CRA) will have a material impact on manufacturers

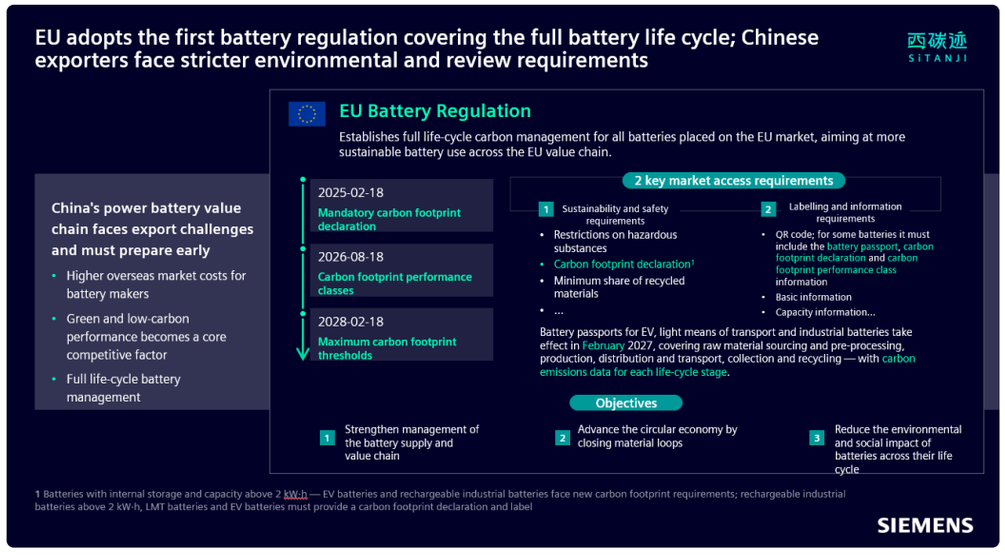
深耕中欧双市场，构建全流程合规服务体系

Cultivate China-EU Dual Markets to Establish a Full-process Compliance Service System

平台常态化对接欧盟监管机构、欧洲工业联盟及国际网安标准化组织，实时跟进欧盟法规迭代，联合开展规则研讨、技术研发与标准共建。面向欧盟市场搭建“主体运营安全+产品全生命周期合规”双支柱服务体系，覆盖数据跨境安全评估、NIS2风险排查整改、工业产品全周期安全管控、碳足迹核算、CBAM申报、电池护照生成等完整业务链条。方案已落地欧洲工厂与数十家全球化经营企业，打通中国电池企业与国际车企电池护照数据对接，适配欧盟27国监管细则，成熟模式可复制推广，赋能全球中小制造企业。

The platform maintains regular engagement with EU regulators, European industrial alliances and international cybersecurity standard-setting bodies. It tracks EU regulatory updates and jointly conducts rule research, technical R&D and standard-setting work. It builds a dual-pillar service system for the EU market covering entity operational security and full-lifecycle product compliance. Services include cross-border data security assessment, NIS2 risk inspection and rectification, full-cycle security governance for industrial products, carbon-footprint accounting, CBAM filing and battery passport generation.

Deployed at European plants and dozens of globally operating enterprises, it enables battery-passport data interconnection between Chinese battery firms and international automakers. Adaptable to regulations across 27 EU member states, its replicable, mature model empowers small-and-medium manufacturers worldwide.



▲ 欧盟通过首个针对电池全生命周期阶段的新电池法，中国全球化企业面临更严格的环保和审查要求
The EU has adopted the first Batteries Regulation that covers all stages of the full battery life cycle. Chinese enterprises exporting to the EU will face stricter environmental and scrutiny requirements.

前置风险防控关口，共建绿色安全全球贸易生态

Move Risk Prevention Forward to Co-create a Green, Secure Global Trade Ecosystem

在企业层面，平台帮助经营主体压缩合规改造周期与成本，规避国际层面高额处罚与市场准入限制，稳固企业全球市场渠道。在国际合作层面，输出中欧合规共建实践，推动跨境供应链数字化、安全化、低碳化转型，契合全球ESG与网络安全合作趋势，深化全球产业协作。在行业普惠层面，形成轻量化可复制的标准化合规路径，兼顾头部企业升级与中小微企业补齐合规短板，提升制造业全球合规竞争能力。长远来看，助力构筑安全可控、低碳共赢、贸易有序的全球产业格局，支撑网络空间命运共同体建设。

For enterprises, the platform shortens compliance renovation cycles and lowers costs, helping businesses avoid heavy overseas penalties and market-access barriers and secure global market channels. For international cooperation, it shares China-EU joint compliance experience, accelerates digital, secure and low-carbon transformation of cross-border supply chains, aligns with global ESG and cybersecurity trends and deepens worldwide industrial collaboration. For inclusive industry development, it delivers lightweight, replicable standardized compliance paths, supporting upgrades for leading firms and closing compliance gaps for SMEs to boost manufacturing's global competitiveness.

In the long run, it helps build a secure, controllable, low-carbon-win-win and well-ordered global industrial landscape and underpins the building of a community with a shared future in cyberspace.



▲ 欧盟：数据安全合规双轨制带来的挑战与应对规则
EU: Challenges & Response Framework for Dual-track Data Security Compliance



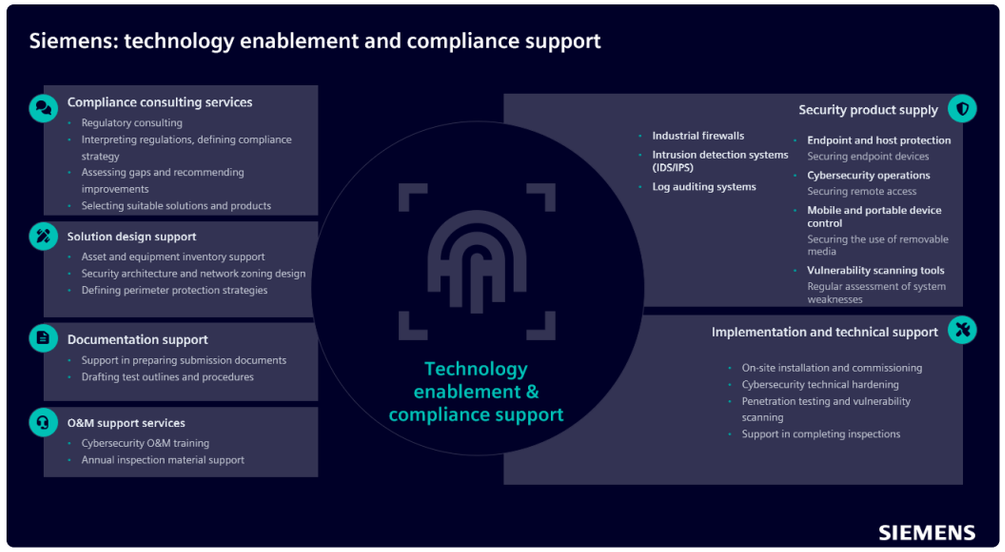
▲ 网络安全唯有携手，方能攻克
Cybersecurity: Only Together Can We Prevail

自研数字技术底座，攻克三大产业链合规痛点

Self-developed Digital Infrastructure to Resolve Three Core Industrial Chain Compliance Pain Points

平台创新"基础底座+行业拓展"弹性架构，底层适配多项国际、区域法规，依托国际研讨成果快速迭代功能模块，解决合规滞后难题。搭建欧洲产业多源数据中心，打通主流行业标准接口，破除中欧产业链数据壁垒。自研网安与碳足迹一体化核算引擎，内置多项国际主流核算标准，对接企业生产管理系统，实现产品全生命周期数据溯源与穿透式合规管控，为企业跨国经营与全球产业协同提供坚实技术底座。

The platform adopts an innovative elastic framework of "basic infrastructure plus industrial extensions". Its underlying layer complies with multiple international and regional regulations. Functional modules are rapidly iterated based on international research outcomes to address compliance lags. A European industrial multi-source data center, built with interfaces for mainstream industrial standards to break down China-EU industrial-chain data barriers. Its self-developed integrated engine for cybersecurity and carbon-footprint calculation embeds major international accounting standards. Connected with enterprise production-management systems, it enables full-lifecycle product data tracing and penetrating compliance control and provides solid technical support for corporate global operations and worldwide industrial collaboration.



▲ 西门子：技术赋能与合规支持
Siemens: Technology Empowerment & Compliance Support

筑牢全球网络安全防线：面向百国千将的《网络空间安全与国家安全》国际课程

Fortifying the Global Cybersecurity Defense: An International Course on "Cybersecurity and National Security" for Hundreds of Countries and Thousands of Generals.



▲ 2026年《网络空间安全与国家安全》国际课程多国学员合影
Group Photo of Participants from Multiple Countries in the 2026 International Course “Cyberspace Security and National Security”

申报机构
Applying Institution

中国科学院信息工程研究所
Institute of Information Engineering Chinese Academy of Sciences

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖阿尔巴尼亚、阿尔及利亚、阿富汗、阿根廷、埃及、埃塞俄比亚等134个国家和地区

Covering 134 countries and regions including Albania, Algeria, Afghanistan, Argentina, Egypt, and Ethiopia

面对跨国网络威胁加剧、发展中国家网络安全能力不足等挑战，中国科学院信息工程研究所马多贺教授团队依托国际化平台，面向百余国高级军官开设《网络空间安全与国家安全》国际课程，推动各国加强网络安全对话、交流与合作。

In response to growing cross-border cyber threats and gaps in cybersecurity capacity among developing countries, Prof. Duohe Ma and his group of the Institute of Information Engineering Chinese Academy of Sciences, offers the international course "Cyberspace Security and National Security" to senior military officers from over 100 countries -- promoting international dialogue, exchange, and cooperation on cybersecurity.

面向百国千将的《网络空间安全与国家安全》战略课程
A Strategic Course on "Cyberspace Security and National Security" for More Than 1, 000 Senior Military Officers from Over 100 Countries

网络威胁的跨国性与不对称性加剧了全球治理困境，发展中国家普遍面临战略、认知、技术、人才等结构性挑战。作为中国网络安全领域的重要科研机构，中国科学院信息工程研究所积极响应"构建网络空间命运共同体"倡议，依托国防大学国际防务学院的国际化平台，多年来持续为"一带一路"沿线及友好国家高级军官与防务官员开设《网络空间安全与国家安全》国际课程，搭建起跨越语言、文化与国界的对话桥梁，成为全球网络安全治理能力建设的重要实践样本。

The cross-border and asymmetric nature of cyber threats has made global governance more challenging, while many developing countries face persistent gaps in strategy, awareness, technology, and professional expertise. As a leading cybersecurity research institution in China, the Institute of Information Engineering Chinese Academy of Sciences, has supported the initiative to build a community with a shared future in cyberspace. Drawing on the international platform provided by the International College of Defense Studies at the National Defense University, the Institute has for many years offered the international course "Cyberspace Security and National Security" to senior military officers and defense officials from Belt and Road Initiative partner countries and other friendly nations. In doing so, the course facilitates dialogue across languages, cultures, and national borders and provides a practical model for capacity building in global cybersecurity governance.




▲ 2024年《网络空间安全与国家安全》国际课程马多贺教授与外军学员合影
Prof. Duohe Ma Posed Group Photo with International Officer Students in the 2024 Course "Cyberspace Security and National Security"

以"和平、战略、求真"为精神内核的国际化课程体系
An International Curriculum Built around Peace, Strategic Thinking, and the Pursuit of Truth

(1) 搭建和平课堂，汇聚百余国共同力量

课程面向亚洲、非洲、拉丁美洲和东欧等地区100多个国家，覆盖"一带一路"关键节点国家，累计培训1000余名高级军官。课程采用中英双语授课、多语种同传和跨文化案例教学，促进不同国家学员平等对话，凝聚维护网络空间和平安全的共识。

(2) 打造战略课堂，汇聚千余将跨国智慧

课程构建“技术—战略—治理”三维体系，技术层涵盖主动防御、量子安全、人工智能安全等议题，战略层比较主要国家网络安全战略，治理层探讨网络空间国际规则。课程同时研讨人工智能对现代战争的影响及发展中国家技术援助模式，提升了学员战略决策与跨国协作能力。

(3) 营造求真课堂，促进共学互鉴与同窗情谊

课程创新设置沉浸式研讨，组织学员围绕现实关切模拟场景、共商对策，在互动中增进信任。学员归国后将所学理念和技术应用于本国安全体系，形成“一人受训、带动一方”的示范效应。

(1) A Classroom for Peace: Bringing Together Over 100 Countries

Serving more than 100 countries across Asia, Africa, Latin America, and Eastern Europe, including key Belt and Road Initiative partners, the course has trained more than 1, 000 senior military officers. Through bilingual Chinese-English instruction, multilingual simultaneous interpretation, and cross-cultural case studies, it enables participants to engage as equals and build consensus on peace and security in cyberspace.

(2) A Strategy-Focused Classroom: Harnessing Cross-Border Expertise

The course integrates technology, strategy, and governance. The technology component covers active defense, quantum security, and AI security; the strategy component compares national cybersecurity strategies; and the governance component examines international rules for cyberspace. Discussions also explore AI's impact on modern warfare and technical-assistance models for developing countries, strengthening participants' strategic decision-making and cross-border cooperation.

(3) A Truth-Seeking Classroom: Advancing Mutual Learning and Lasting Bonds

The course uses immersive seminars in which participants simulate realistic scenarios, develop joint responses, and build trust. After returning home, participants apply what they have learned within their national security systems, extending the course's demonstration effect and realizing the principle that training one individual can benefit a broader community.



▲ 马多贺教授与国际学员围绕网络空间安全议题开展课堂研讨
Prof.Duohe Ma Discussed Cyberspace Security with International Participants in a Classroom Seminar

搭建平等交流平台，沉浸式研讨凝聚“命运共同体”共识

An Equal Platform for Exchange: Building Consensus on a Community with a Shared Future through Immersive Seminars

一位国际学员曾坦言：本国网络安全力量薄弱，面对日益复杂的网络威胁，缺少战略方向和技术支撑。在这方课堂上，来自数十个面临同样挑战的发展中国家的学员齐聚一堂、互通有无，他深刻认识到，正如一滴水只有融入大海才不会干涸，只有加强与中国及其他国际伙伴的网络安全合作，网络安全能力相对薄弱的国家才能更有效地应对全球网络安全挑战，维护网络空间主权与安全。这一感悟引发了多国学员的共鸣。他们自发建立联络机制，将同窗友谊转化为常态化的跨国交流合作。

本案例培训100多个国家的1000余名高级军官，传播发展中国家网络空间治理的共同理念与诉求，践行了以“共同安全、共享繁荣”为内涵的命运共同体理念，为推动构建更加公平、包容、安全的全球网络空间治理秩序作出了积极贡献。

An international participant once observed that his country had limited cybersecurity capabilities and lacked strategic direction and technical support in the face of increasingly complex cyber threats. In the classroom, he saw participants from dozens of developing countries facing similar challenges come together to exchange experiences. He came to recognize that, just as a drop of water is sustained only by becoming part of the ocean, countries with relatively limited cybersecurity capabilities can respond more effectively to global cybersecurity challenges and safeguard their sovereignty and security in cyberspace only by strengthening cybersecurity cooperation with China and other international partners. This realization resonated with participants from many countries. They established their own contact networks, turning the bonds formed as classmates into sustained cross-border exchange and cooperation.

The initiative has trained more than 1, 000 senior military officers from over 100 countries and advanced developing countries' shared perspectives and priorities on cyberspace governance. It has put into practice the vision of a community with a shared future centered on common security and shared prosperity and has made a positive contribution to efforts to build a fairer, more inclusive, and more secure system of global cyberspace governance.



◀ 多国高级军官通过多语种同传参与课程学习
Senior Military Officers from Multiple Countries Participate in the Course through Multilingual Simultaneous Interpretation

05

网络空间国际治理
Global Governance in Cyberspace

构建互联网治理体系，促进公平正义
Building a System of Global Governance in Cyberspace to Promote Equity and Justice





精品案例

Catena-X——全球汽车行业可信数据生态系统

Catena-X — The Trusted Data Ecosystem for the Global Automotive Industry



▲ Catena-X全球汽车数据生态体系已集聚了全球260余家企业。
The Catena-X Global Automotive Data Ecosystem has brought together more than 260 enterprises from around the world.

申报机构
Applying Institution

Catena-X 汽车网络协会
Catena-X Automotive Network e.V.

其他参与机构
Other Participating Organizations

宝马集团、梅赛德斯 - 奔驰、大众汽车集团、中国汽车工业协会、德国汽车工业协会、中汽中心、沃尔沃、博世、舍弗勒、采埃孚、大陆集团、巴斯夫、西门子、思爱普、微软、宁德时代、中国信息通信研究院、众链数智（上海）智能科技有限公司

BMW AG, Mercedes-Benz AG, Volkswagen AG, CAAM, VDA, CATARC, Volvo Car AB, Bosch, Schaeffler, ZF Friedrichshafen, Continental, BASF, Siemens AG, SAP, Microsoft Deutschland GmbH, CATL, CAICT, VDBP

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖澳大利亚、奥地利、比利时、保加利亚、加拿大等51个国家和地区
Covering 51 countries and regions, including Australia, Austria, Belgium, Bulgaria, Canada

全球汽车产业链横跨多洲、覆盖数百万供应商，长期缺乏可信中立的跨境数据交换机制。标准割裂、地缘互信不足与数据主权顾虑，制约了可持续发展、供应链透明化与循环经济落地。Catena-X旨在填补这一空白，推动构建公平的国际网络空间规则。

The global automotive industry — spanning millions of suppliers across continents — has long lacked a trusted, neutral mechanism for cross-border data exchange. Fragmented standards, geopolitical mistrust, and concerns over data sovereignty have blocked progress on sustainability, supply chain transparency, and circular economy goals. Catena-X was founded to close this gap and promote the establishment of equitable international rules for cyberspace.

Catena-X：连接欧亚美的全球多边产业联盟

Catena-X: A Global Multi-Stakeholder Alliance Bridging Europe, Asia, and the Americas

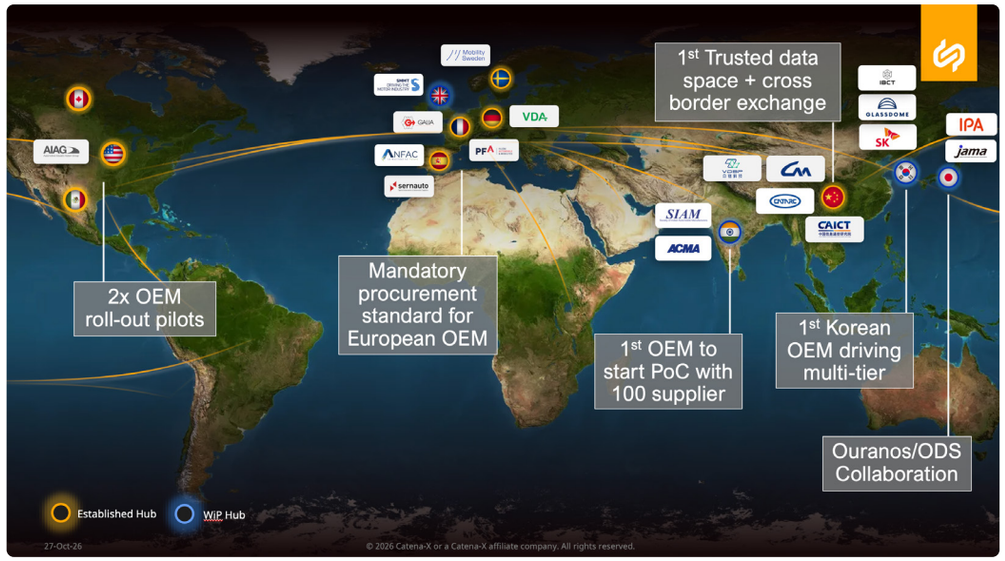
Catena-X是总部位于德国的非营利性协会，汇聚全球 200 余家成员，覆盖整车厂、各级供应商、中小企业、科技服务商、科研机构与标准化组织，囊括宝马、奔驰、大众、福特、博世、西门子、思爱普、微软、宁德时代、华为等全球领军企业。

协会以多边协商一致为核心治理原则，通过全体大会、理事会及各专业工作组决策，确保无单一主体占据主导：投票权按地区分配，工作组以英语为工作语言，同步推进中、日、韩文本地化，保障非欧洲参与者的包容性。Catena-X积极对接ISO、IEC、IEEE等国际标准化组织，以及IDSA、Eclipse基金会等机构，与中国信通院等中方主体联合举办研讨会，搭建与中国汽车数据治理体系的互操作桥梁。其治理框架适配欧盟《数据法案》、中国《数据安全法》《个人信息保护法》及美国数据监管规则，探索兼顾各区域诉求的务实网络空间治理路径。

Catena-X is a not-for-profit association headquartered in Germany, uniting more than 200 member organizations from almost all continents — including automotive OEMs, tier-N suppliers, SMEs, IT providers, research institutes, and standardization bodies. Members include global leaders such as BMW, Mercedes-Benz, Volkswagen, Ford, Bosch, ZF, Siemens, SAP, T-Systems, Microsoft, Huawei, CATL.

The governance model is explicitly multilateral and consensus-based. Decision-making bodies — including the General Assembly, Board, and working groups on standardization, operations, and regulation — ensure that no single company, country, or region dominates. Voting rights are distributed across regions, and working groups operate in English with parallel localization efforts in Chinese, Japanese, and Korean to ensure inclusivity for non-European participants.

Catena-X actively engages with international standardization organizations (ISO, IEC, IEEE), the Eclipse Foundation, the International Data Spaces Association (IDSA), and regional partners in China, Japan, and North America. Joint workshops with CAICT and Chinese industry players have shaped interoperability bridges between Catena-X and emerging Chinese automotive data initiatives. By embedding governance practices that respect each jurisdiction's regulatory framework — including the EU Data Act, China's PIPL/DSL, and US data norms — Catena-X demonstrates a practical pathway toward a shared, equitable cyberspace governance model that reflects the concerns of all participating regions.



▲ Catena-X 正在推动创建一个覆盖欧洲、亚洲和美洲的可信数据网络。
Catena-X is driving the creation of a trusted data network spanning Europe, Asia and the Americas.

联邦式架构与开放标准重构产业数据治理

Federated Architecture and Open Standards: Reinventing How Industries Govern Shared Data

Catena-X采用去中心化联邦架构，数据所有权始终归属于持有方，系统基于开源组件Eclipse Tractus-X搭建，核心包含四大创新：一是设计原生的数据主权，数据交换全程受机器可读的使用策略约束，参与方可完全掌控数据的使用主体、方式与用途；二是联邦式身份信任体系，基于W3C可验证凭证的自主主权身份框架，实现跨司法辖区的无中心化可信接入；三是全栈开放标准与开源实现，所有规范、数据模型与参考方案公开可用，避免厂商锁定，支持全球中小企业接入；四是中立化联邦治理，由成员驱动的中立协会统筹规则手册、认证体系与运营模式，保障跨监管辖区的合法性。

该模式呼应世界互联网大会构建均衡国际规则的倡议，不强行推行单一国家监管体系，而是搭建可与各国数据保护法规互操作的中立技术与法律框架。其第三方独立运营的认证体系提供了可落地的问责机制，为跨境数字生态的公平透明治理提供了产业实践样本。

Catena-X pioneers a decentralized, federated data ecosystem in which data never leaves the owner's control. Built on open-source components (Eclipse Tractus-X), it combines four governance and technical innovations:

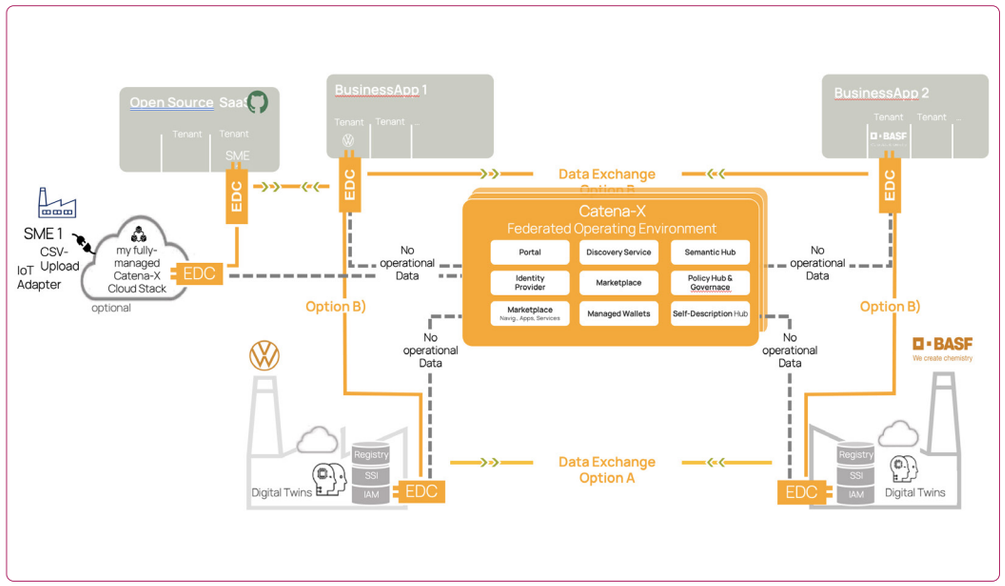
1.Data Sovereignty by Design — Every data exchange is governed by machine-readable usage policies, ensuring participants retain full control over how their data is used, by whom, and for what purpose.

2.Federated Identity and Trust — A self-sovereign identity framework, based on W3C Verifiable Credentials, enables trusted onboarding of participants across jurisdictions without a central authority.

3.Open Standards & Open Source — All specifications, data models, and reference implementations are publicly available, preventing vendor lock-in and enabling global adoption — including by SMEs in emerging economies.

4.Federated Governance — A neutral, member-driven association governs the rulebook, certification scheme, and operating model, ensuring legitimacy across competing jurisdictions.

This model directly addresses the WIC's call for balanced international rules: instead of imposing one nation's regulatory regime, Catena-X creates a neutral technical-legal framework that interoperates with the data protection laws of each member country. The Catena-X certification scheme, operated by independent third parties, provides an enforceable accountability mechanism — a concrete contribution to the global discussion on how digital ecosystems can be governed fairly and transparently across borders



▲ 联邦化的数据空间治理架构支撑跨企业数据的安全受控流通。
A federated data space governance architecture supports the secure and controlled flow of data across enterprises.

普惠产业发展，赋能全球市场互联互通

Empowering SMEs, Advancing Sustainability, and Building Bridges Between Global Markets

Catena-X的价值体现在三大维度：一是经济普惠性，开源工具与标准化接入大幅降低新兴市场中小企业准入门槛，三级供应商可与跨国整车厂对等开展数据交互，让全球汽车价值链参与更具包容性；二是可持续发展价值，支持可验证的产品碳足迹追踪、电池护照等循环经济场景与供应链尽职调查，助力落实联合国可持续发展目标与《巴黎协定》，目前已有超 500 家企业在生产环境落地应用；三是跨境互信价值，其中立治理模板已被航空航天、制造、医疗等行业研究借鉴，为全球产业在保障主权前提下开展数据共享治理提供了可复制方案。

Catena-X契合世界互联网大会“网络空间命运共同体”愿景，是一套技术成熟、具备国际合法性的可落地治理模式，兼顾发达与新兴经济体利益，有助于增进战略互信，为产业级公平数字治理落地提供了实践范例。

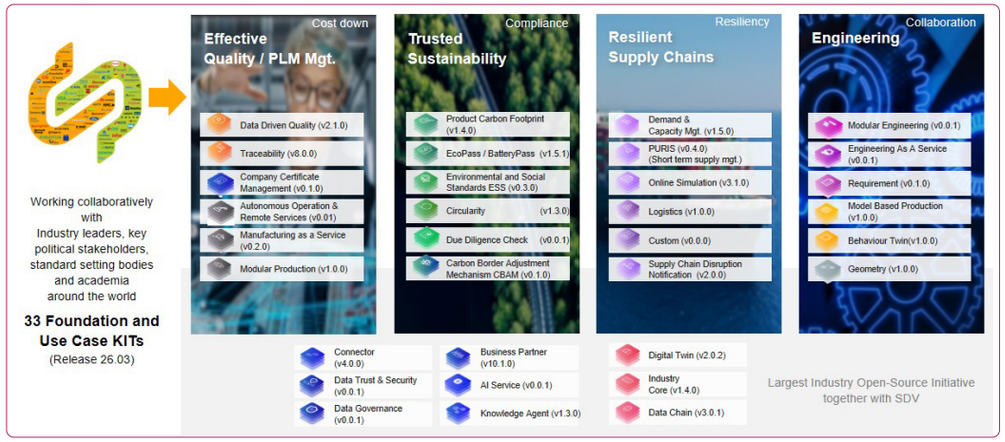
Catena-X delivers measurable benefits across three dimensions:

1.Economic Inclusion: By providing open-source tools and standardized onboarding, Catena-X dramatically lowers entry barriers for SMEs and suppliers in developing markets. A tier-3 supplier in Southeast Asia or Eastern Europe can now exchange data with global OEMs on equal technical terms with multinationals — democratizing participation in the global automotive value chain.

2.Sustainability & Public Good: Catena-X enables verifiable Product Carbon Footprint (PCF) tracking, circular economy use cases (battery passports, material traceability), and supply chain due-diligence reporting — supporting the UN Sustainable Development Goals (SDG 9, 12, 13) and the Paris Agreement. Over 500 companies already use Catena-X productively.

3.Cross-Border Trust: By offering a neutral governance template, Catena-X is being studied and partially adopted in other sectors (aerospace, manufacturing, healthcare) and regions (Manufacturing-X in Europe, parallel initiatives in Japan and China). It provides a replicable blueprint for how industries worldwide can govern shared data without sacrificing sovereignty.

Catena-X embodies the WIC vision of a "community with a shared future in cyberspace": a practical, technically mature, and internationally legitimate governance model that benefits established and emerging economies alike, fosters strategic mutual trust, and demonstrates how equitable digital governance can be operationalized at industrial scale.



▲ 33个基础模块与用例工具包赋能汽车全产业链普惠发展。
33 Foundation and Use Case Kits are empowering inclusive development across the entire automotive industry chain.

精品案例

数字标志：识别网络空间人道保护对象的全球倡议

The “Digital Emblem” Project: A Global Initiative to Identify Humanitarian Protections in Cyberspace



▲ “数字标志”将国际法为人道和医疗机构提供的保护识别标志延伸至网络空间。
The “Digital Emblem” extends the identification of protections that international law provides to humanitarian and medical organizations into cyberspace.

申报机构
Applying Institution

ICRC

红十字国际委员会
International Committee of the Red Cross (ICRC)

其他参与机构
Other Participating Organizations

澳大利亚红十字会、英国红十字会、日本红十字会、西班牙红十字会、尼日利亚红十字会、比利时红十字会

Australian Red Cross, British Red Cross, Japanese Red Cross, Spanish Red Cross, Nigerian Red Cross, Belgian Red Cross

Australian Red Cross · BritishRedCross · 日本赤十字社 Japanese Red Cross Society · Cruz Roja · CROIX-ROUGE de Belgique

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖澳大利亚、比利时、尼日利亚等8个国家和地区
Covering 8 countries and regions including Australia, Belgium, and Nigeria

“数字标志”是一种可被机器识别的数字信号，为受国际法保护的人道和医疗机构提供统一、规范且具有国际通识性的网络身份标识。正如现实世界中红十字、红新月与红水晶标志标明了受保护的医疗和人道服务，“数字标志”努力将这一机制延伸至网络空间。

The “Digital Emblem” is a machine-readable digital signal that enables protected humanitarian and medical organizations to identify themselves online in a standardized and globally recognizable manner. Similar to how the Red Cross, Red Crescent, and Red Crystal emblems identify protected medical and humanitarian services in the physical world, the “Digital Emblem” make such protection visible in cyberspace.

推动国际人道法保护原则向数字领域延伸的全球实践
A Global Effort to Translate Established Principles of International Humanitarian Law (IHL) into the Digital Domain

国际人道法为医院、医务人员及特定人道组织等受保护主体确立了国际公认的保护标志。在武装冲突期间，这些标志有助于让相关受保护人员和设施被及时、准确地识别，获得应有的尊重与保护。

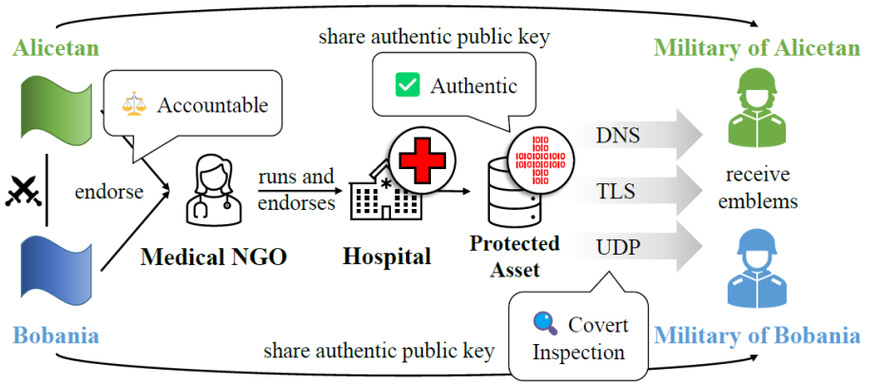
随着人道与医疗服务对数字基础设施的依赖不断加深，网络空间却尚未建立起相应的识别机制，用以标明受国际人道法保护的人道和医疗系统。

因此，“数字标志”项目应运而生。该项目将既有国际人道法原则向数字领域延伸，通过构建识别享有合法受保护地位的数字资产的机制，为打造更可信、更具韧性且更以人为本的数字环境提供实践路径。

IHL provides universally recognized protective emblems for hospitals, medical personnel, certain humanitarian organizations, and other protected entities during armed conflict. These emblems help ensure that certain protected persons and objects can be identified, respected, and protected.

However, as humanitarian and medical services increasingly depend on digital infrastructure, no equivalent mechanism exists for identifying protected humanitarian and medical systems in cyberspace.

The “Digital Emblem” was conceived to address this challenge. By translating established principles of International Humanitarian Law (IHL) into the digital domain, the project creates a practical mechanism for identifying digital assets entitled to special protection and contributes to a more trusted, resilient, and human-centred digital environment.



▲ “可信数字标志”（ADEM）：实现“数字标志”的一种技术路径
ADEM: A technical approach to realizing the concept of a “digital emblem”

多方合作推动国际法、技术标准与实践应用有机衔接

Multi-Stakeholder Cooperation in Connecting International law, Technical Standards, and Operational Practice

第34届红十字与红新月国际大会是一个重要里程碑。大会期间，各国通过决议，支持红十字国际委员会（ICRC）持续推进数字标志相关工作。

“数字标志”的技术方案正在互联网工程任务组（IETF）框架下转化成为开放、统一且具全球互操作性的技术标准。一些补充性的标准化工作则在国际电信联盟（ITU）同步进行。这一基于标准的发展路径，有助于确保数字标志在不同国家和地区的技术环境中具备广泛的适用性、互操作性和可扩展性。

与此同时，项目在联合国互联网治理论坛（IGF）、世界信息社会峰会（WSIS）、ITU人工智能向善（AI for Good）全球峰会等平台上获得关注，成为法律规范、技术创新与人道价值携手应对数字时代新挑战的典型范例。另外，有160余家科技企业共同发布了“数字标志承诺”，支持共同推动加强网络空间中人道基础设施的保护。

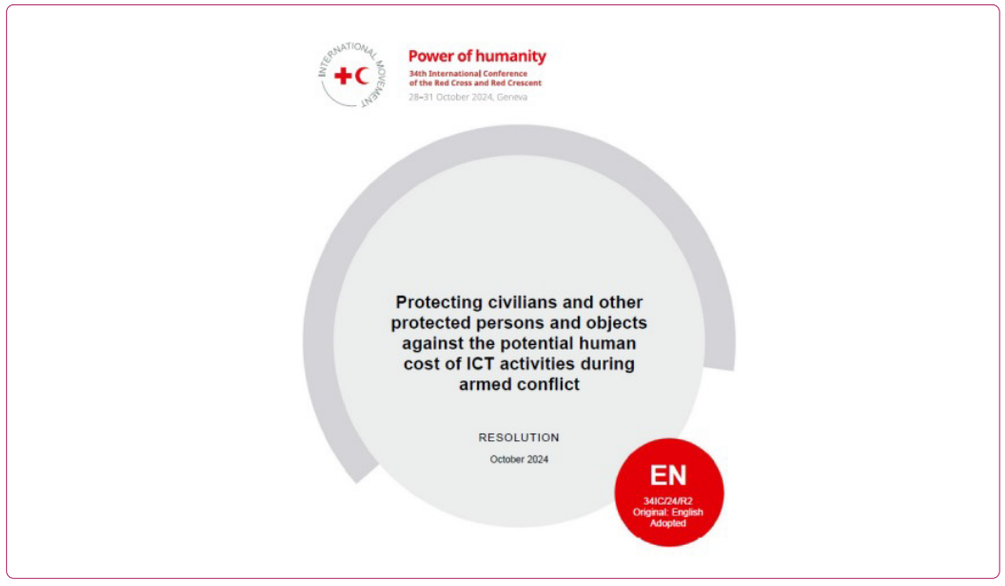
2026年7月，项目第二阶段在全球正式启动。项目正式进入实践应用阶段，工作重心转向实施路径探索，以及人道组织、医疗机构等相关主体的实际部署与应用。

A major milestone was reached at the 34th International Conference of the Red Cross and Red Crescent, where States adopted a resolution encouraging the International Committee of the Red Cross (ICRC) to continue its work related to the “Digital Emblem”.

Technical proposals are advancing through the Internet Engineering Task Force (IETF), where open and globally interoperable standards are being developed to support implementation. Complementary standardization work is also taking place at the International Telecommunication Union (ITU). This standards-based approach is designed to ensure broad accessibility, interoperability, and scalability across jurisdictions and technological environments.

The project has also become part of broader international discussions on the future of digital governance. It has been featured in major multistakeholder forums, including the Internet Governance Forum (IGF), the World Summit on the Information Society (WSIS) and the ITU's AI for Good Global Summit, where it has been highlighted as an example of how law, technology, and humanitarian values can be brought together to address emerging challenges in the digital age. More than 160 technology companies have publicly supported the initiative's objectives through industry-led efforts promoting the protection of humanitarian infrastructure in cyberspace, including the “Digital Emblem” Pledge.

An important milestone was reached in July 2026 with the global launch of Phase II of the Project. This phase marks the transition to operational practice, focusing on implementation pathways and real-world adoption by humanitarian organizations, healthcare institutions, and other relevant stakeholders.



▲ 该决议体现了各方对武装冲突期间开展信息通信技术（ICT）活动所造成危害的共同关切，重申了在武装冲突期间保护平民免受信息通信技术威胁的承诺，并强调了所有冲突当事方在使用信息通信技术时均必须遵守的国际人道法（IHL）核心义务。
The resolution presents a shared concern about the harm caused by the use of ICT activities during armed conflict, a commitment to protect the civilian population against ICT threats during armed conflict, and highlights key IHL obligations that all belligerents must respect in their use of ICTs.



▲ 数字标志已经进入实践应用阶段。
The Digital Emblem Project has transitioned into operational practice.

构建数字时代人道保护的新范式

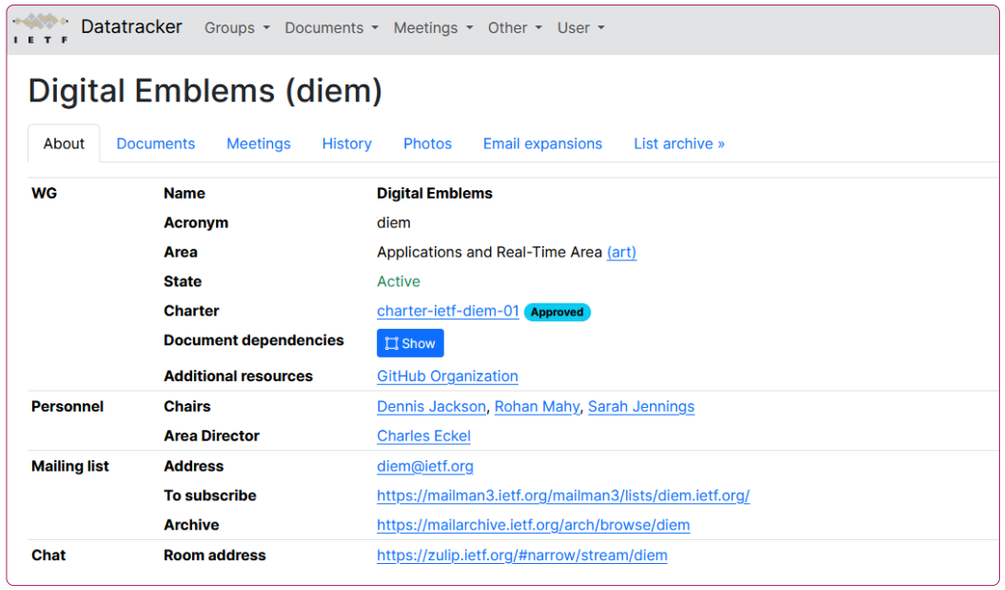
Building a New Paradigm for Humanitarian Protection in the Digital Age

“数字标志”为人道原则在数字时代持续发挥作用、保持现实意义，提供了务实且具有前瞻性的解决方案。

“数字标志”框架以国际社会广泛认可的人道原则为基础，通过开放的标准制定机制持续完善，具备良好的可扩展性、互操作性和跨区域适用能力，能够适应不同法域和技术环境的发展需求，为未来应对技术发展、公共政策和人道保护交叉领域的新挑战提供了可复制、可推广的参考路径。

The “Digital Emblem” provides a practical and forward-looking model for ensuring that humanitarian principles remain relevant and effective in the digital age.

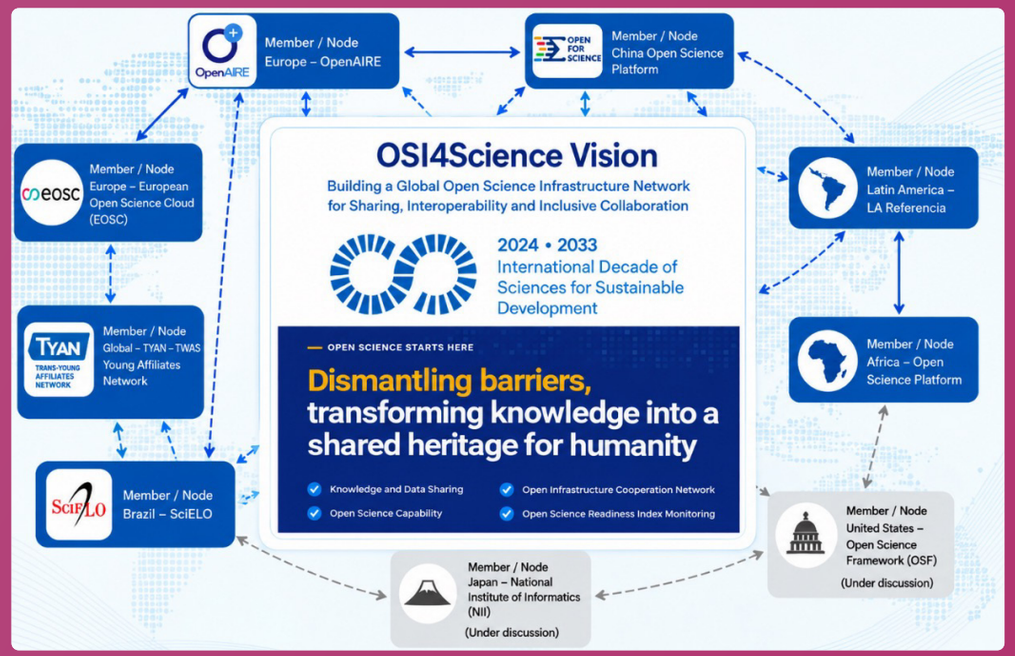
Built upon universally recognized humanitarian principles and developed through open standards processes, the framework is scalable, interoperable, and adaptable across jurisdictions and technological environments. Its governance model offers a replicable approach for addressing future challenges at the intersection of technology, public policy, and humanitarian protection.



▲ “数字标志”的技术方案正在互联网工程任务组（IETF）框架下转化成为开放、统一且具全球互操作性的技术标准。
Technical proposals are advancing through the Internet Engineering Task Force (IETF), where open and globally interoperable standards are being developed to support implementation.

编织全球知识网络，共筑开放科学新秩序——Open4Science开放科学信息基础设施共享网络联盟

Weaving a Global Knowledge Network, Shaping the Future of Open Science — Open4Science Global Alliance for Open Science Infrastructure Sharing



▲ 联盟（OSI4Science）连接全球开放科学节点，构建开放知识共享网络
OSI4Science: Connecting Open Science Nodes Worldwide, Building a Global Network for Open Knowledge Sharing

申报机构
Applying Institution

中国科学院文献情报中心
National Science Library

中国科协联合国咨商开放科学与全球伙伴专委会
National Science Library, Chinese Academy of Sciences (NSL, CAS)
CAST-UN Consultative Committee on Open Science and Global Partnership (CCOS)

其他参与机构
Other Participating Organizations

欧洲开放获取基础设施 OpenAIRE、“一带一路”国际科学组织联盟(ANSO)、科学电子图书馆在线(SciELO)、世界科学院青年科学家院士网络(TYAN)、联合国教科文组织东亚地区办事处、浙江大学、中国科学院计算机网络信息中心、中国科学院软件研究所、中国科学院重大科技基础设施共享服务平台、中国科学院青藏高原研究所、开放获取期刊目录(DOAJ)基金会、香港中文大学、公共科学图书馆(PLOS)、蒙古国科学院

Open Access Infrastructure for Research in Europe(OpenAIRE); Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO); Scientific Electronic Library Online (SciELO); TWAS Young Affiliates Network (TYAN); UNESCO Regional Office for East Asia; Zhejiang University; Computer Network Information Center, Chinese Academy of Sciences (CNIC, CAS); Institute of Software, Chinese Academy of Sciences (ISCAS); Chinese Academy of Sciences Sharing Service Platform of CAS Large Research Infrastructures; Institute of Tibetan Plateau Research, Chinese Academy of Sciences (ITP-CAS); Directory of Open Access Journals (DOAJ) Foundation; The Chinese University of Hong Kong; Public Library of Science (PLOS); and Mongolian Academy of Sciences.

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖中国、俄罗斯、德国、法国、英国等62个国家和地区
Covering 62 countries and regions including China, Russia, Germany, France, and the United Kingdom

开放科学正在全球加速发展，但不同国家在基础设施、技术标准和参与能力上仍有差距。为让科学知识更公平地跨越国界和平台，Open4Science联合多国伙伴建设OSI4Science，让更多国家公平参与、共同受益，以开放科学促进可持续发展。

Open science is gathering momentum worldwide, yet the foundations for participation remain uneven, with significant disparities in infrastructure, technical standards, and institutional capacity across countries. To enable scientific knowledge to flow more equitably across borders and platforms, Open4Science is joining forces with international partners to build OSI4Science—a collaborative network designed to broaden equitable participation, generate shared benefits, and unlock the potential of open science for sustainable development.

跨越地域与平台壁垒，织就全球开放科学共享网络

Beyond Borders and Platforms: Weaving a Global Network for Open Science

开放科学正从单一机构和区域的资源开放，走向跨国家、跨平台的协同共享。面对不同国家和地区开放科学基础设施分散、资源类型多样、技术规则不一等问题，中国科学院文献情报中心以承担联合国教科文组织（UNESCO）“Open for Science 10（OS10）”计划相关项目为契机，推动建设Open4Science开放科学信息基础设施共享网络联盟（OSI4Science）。联盟连接欧洲OpenAIRE、拉丁美洲SciELO、俄罗斯科学院、非洲开放科学平台以及亚洲多国合作伙伴，逐步形成跨越欧洲、拉丁美洲、非洲和亚洲的开放科学合作网络，通过国际协作促进科学知识和科研资源更广泛地开放、连接与共享。

Open science is moving beyond the opening of resources within individual institutions and regions toward coordinated sharing across countries and platforms. Progress, however, is constrained by fragmented infrastructure, diverse resource types and inconsistent technical frameworks. Building on its work under UNESCO's Open for Science 10 (OS10) Programme, the National Science Library, Chinese Academy of Sciences, is spearheading the development of the Open4Science Open Science Information Infrastructure Sharing Network Alliance (OSI4Science). The Alliance brings together Europe's OpenAIRE, Latin America's SciELO, the Russian Academy of Sciences, the African Open Science Platform and partners across Asia. Together, these partnerships are shaping an open science collaboration network spanning Europe, Latin America, Africa and Asia, enabling scientific knowledge and research resources to be opened, connected and shared on a far broader scale.



▲ OSI4Science发展里程碑
Milestones in the Development of OSI4Science



▲ 巴黎共话开放科学，共绘全球知识共享新图景
Open Science Dialogue in Paris: Shaping a New Landscape for Global Knowledge

连接既有平台，以“网络的网络”推动互联互通

Connecting What Already Exists: A “Network of Networks” for Connectivity and Interoperability

OSI4Science采用“网络的网络”协同模式，以各国和地区已有开放科学平台、知识仓储和数据中心为基础，通过平台连接而非重复建设，推动跨区域基础设施协同。各方共同研究技术标准、互操作规范和协同治理机制，促进科技文献、科学数据、开源软件、科研基础设施等多类型资源跨平台发现与共享。同时，依托联合国教科文组织“科学十年”相关活动、世界科技与发展论坛、IFLA世界图书馆与信息大会等国际交流平台，与不同国家和国际组织专家持续开展标准和互操作讨论，使合作由资源互联进一步延伸至规则共建，形成开放、可扩展的国际协作机制。

Rather than building another standalone platform, OSI4Science operates as a collaborative “network of networks”, connecting existing open science platforms, knowledge repositories and data centers across countries and regions. This connection-first approach avoids duplication while fostering cross-regional coordination among infrastructures. Partners work together to advance technical standards, interoperability specifications and collaborative governance mechanisms, making scientific and technical literature, research data, open-source software, research infrastructures and other resources discoverable and shareable across platforms.

Through UNESCO activities associated with the United Nations International Decade of Sciences for Sustainable Development, the World Science and Technology Development Forum, the IFLA World Library and Information Congress, and other international forums, OSI4Science maintains an ongoing dialogue on standards and interoperability with experts from different countries and international organizations.

In this way, cooperation progresses from connecting resources to jointly shaping rules, laying the foundation for an open, scalable framework for international collaboration.



▲ 国际专家在全球开放科学大会OSFair 2025共商开放科学基础设施共享路径
International Experts at OSFair 2025 Explore Collaborative Pathways towards Shared Open Science Infrastructures

共享知识与能力，让开放科学惠及更多国家

Sharing Knowledge, Building Capacity: Extending the Benefits of Open Science to More Countries

OSI4Science不仅扩大开放科学资源的连接范围，更着力降低不同国家获取和利用科学知识的门槛。联盟已连接欧洲OpenAIRE、拉丁美洲SciELO、非洲开放科学平台以及亚洲多国科研机构和国际组织，相关平台和服务累计面向全球200多个国家和地区、12000余家机构提供知识共享与发现服务。同时，建设科研资讯、AI辅助服务和开放科学成熟度监测等全球公共知识产品，其中开放科学成熟度监测覆盖193个联合国会员国。通过共享基础设施、资源和能力，合作尤其有助于降低基础设施相对薄弱国家的重复建设成本，扩大其参与全球开放科学合作的机会。

The value of OSI4Science lies not only in the breadth of its connections, but also in its capacity to widen participation. By lowering barriers to accessing and using scientific knowledge, the Alliance enables countries to participate more fully in open science. It now links Europe's OpenAIRE, Latin America's SciELO, the African Open Science Platform, and research institutions and international organizations across Asia. Collectively, these platforms and services support knowledge discovery and sharing for more than 12,000 institutions in over 200 countries and regions.

OSI4Science is also developing global public knowledge goods, including research intelligence services, AI-assisted services and open science readiness monitoring, with the monitoring initiative covering all 193 United Nations Member States. By sharing infrastructure, resources and expertise, the initiative reduces the need for duplicative investment—particularly in countries with more limited infrastructure—and creates greater opportunities for them to participate in global open science cooperation.



▲ 发布科学十年《巴黎知识共享与传播行动建议》，推动全球开放科学合作
Launching the Paris Call for Joint Action on Knowledge Sharing and Dissemination to Advance Global Collaboration in Open Science in UNESCO Science Decade Global Conference

从资源互联走向规则共建，推动开放合作包容可持续

From Connecting Resources to Shaping Shared Rules: Advancing Open, Inclusive and Sustainable Cooperation

随着合作不断深入，OSI4Science正从基础设施连接进一步走向标准共建、能力共享和协同治理。不同国家、地区和国际组织既是资源和平台的参与者，也是国际规则讨论和合作机制建设的共同参与者。联盟通过开放协商，兼顾不同国家的发展基础和实际需求，并重视全球南方国家在标准共建、能力提升和网络治理中的参与。以互联互通、平等参与和共同受益为基础，开放科学基础设施由单纯的技术网络逐步成为连接不同国家科研共同体、促进知识合作与互信的纽带。

As collaboration deepens, OSI4Science is moving beyond infrastructure connectivity toward the co-development of standards, shared capacity and collaborative governance. Countries, regions and international organizations are not only contributors of resources and platforms, but also partners in shaping international rules and building mechanisms for cooperation. Through open consultation, the Alliance takes account of countries' differing development contexts and practical needs, while placing particular emphasis on the meaningful participation of the Global South in standard-setting, capacity-building and network governance.

Grounded in connectivity and interoperability, equitable participation and shared benefits, open science infrastructure is gradually evolving beyond a purely technical network to become a bridge between research communities, fostering knowledge cooperation and mutual trust across borders.



▲ IFLA WLIC 2026专题研讨推进开放知识与数据共享规范合作
A Thematic Session at IFLA WLIC 2026 Advances Collaboration on Standards for Open Knowledge and Data Sharing



▲ 2026年亚太经合组织第一次高官会期间APEC经济体代表共议开放科学
Representatives from APEC Economies Engage in Dialogue on Open Science during the 2026 APEC First Senior Officials' Meeting and Related Meetings

JA Youth Talent Mechanism数字青年人才发展平台：以模块化课程和全球专家网络培养可持续创新人才

JA Youth Talent Mechanism Digital Youth Talent Development Platform: Developing Talent for Sustainable Innovation through Modular Curriculum and a Global Expert Network



▲ JA学生企业团队在竞赛颁奖现场合影，呈现全球青年人才机制中"做企业—参赛—展示成果"的闭环。
A JA student company team at an awards ceremony, showing the loop of forming a venture, competing and presenting results.

申报机构
Applying Institution

JA Talents

青年成就全球组织（JA）
Junior Achievement Worldwide

其他参与机构
Other Participating Organizations

安永、Alai Studios、麦肯锡、埃森哲、汇丰银行、苏黎世保险基金会、巴斯夫、联邦快递、花旗基金会、Hivebrite

EY; Alai Studios, McKinsey & Company, Accenture, HSBC, Z Zurich Foundation, BASF, FedEx, Citi Foundation, Hivebrite

案例涉及的国家和地区
Countries and Regions Covered or Involved in the Implementation

覆盖美国、中国、巴西、英国、瑞士、德国、印度尼西亚、挪威、希腊、尼日利亚等10个国家和地区

Covering 10 countries and regions, including the United States, China, Brazil, the United Kingdom, Switzerland, Germany, Indonesia, Norway, Greece, and Nigeria

全球青年仍面临就业技能缺口、创业资源不足和可持续发展意识薄弱等挑战。JA Worldwide构建模块化、数字化和可规模化的青年人才发展平台，将创业教育、金融素养与可持续创新纳入同一体系，并依托全球专家与志愿者网络提供实战指导。

Young people worldwide still face employability-skills gaps, limited entrepreneurial resources and weak sustainability awareness. JA Worldwide has built a modular, digital and scalable talent-development platform that integrates entrepreneurship education, financial literacy and sustainable innovation, delivering hands-on guidance through a global network of experts and volunteers.

十国协同的全球青年人才发展网络
A Ten-Country Global Network for Youth Talent Development

JA Worldwide创立于1919年，总部位于美国，是全球规模最大的青年服务组织之一，并于2022年、2023年连续获得诺贝尔和平奖提名。平台以多国并行的项目网络体现国际性：在美国，总部与安永、麦肯锡合作开发JA Boost人工智能学习平台，并与Hivebrite共建覆盖100余国的全球校友网络；在中国，JA China与SABIC连续举办“Lights of Our Future”可持续设计竞赛；在英国，汇丰与JA推出支持12种语言的FinQuest金融教育应用；在德国，巴斯夫与JA发起“Young Voices for a Sustainable Future”创新挑战。巴西、印度尼西亚、挪威、希腊、尼日利亚等地亦已形成稳定的项目运营与竞赛体系。由此，课程、数字工具、企业志愿者和跨境竞赛被组织进同一套青年人才发展机制。

Founded in 1919 and headquartered in the United States, JA Worldwide is one of the world's largest youth-serving organizations and was nominated for the Nobel Peace Prize in 2022 and 2023. Its international character is a multi-country operating network: in the United States it partners with EY and McKinsey on JA Boost and with Hivebrite on an alumni network spanning more than 100 countries; in China, JA China and SABIC run “Lights of Our Future”; in the United Kingdom, HSBC and JA offer the 12-language FinQuest app; in Germany, BASF and JA launched “Young Voices for a Sustainable Future”. Mature programmes also operate in Brazil, Indonesia, Norway, Greece and Nigeria. Curriculum, digital tools, corporate volunteers and cross-border competitions are therefore held inside one talent-development mechanism.



▲ 青年在协作场景中分享成果，呼应JA在多国开展的团队学习、项目路演与竞赛激励。
Young people celebrating shared work, echoing JA's team-based learning, project pitching and competition pathway across countries.

模块化课程与全球专家网络的实施路径

An Implementation Pathway Built on Modular Curriculum and a Global Expert Network

本案例的核心创新，在于构建“模块化课程—人工智能个性化学习—全球专家辅导—实战创业验证—跨境竞赛迭代”的闭环。平台提供创业、金融素养、就业准备、可持续发展和STEM等模块化内容，通过JA Boost实现个性化学习，覆盖5至25岁年龄段。全球约50万名商业志愿者与教师，每年为超过1,500万名学生提供实战指导。JA Company Program指导学生组建真实企业，并参加从本地到全球的多级竞赛；De La Vega全球创业奖汇聚六大区域冠军。创新点不在单一课程，而在于把学习、辅导、做企业和公开竞赛连成可规模复制的教育基础设施，使不同国家能够共享同一套标准，同时保留本地议题和语言。

The case’s core innovation is a closed loop of modular curriculum, AI-enabled personalized learning, global mentoring, practical venture validation and cross-border competition. Content covers entrepreneurship, financial literacy, work readiness, sustainability and STEM, delivered through JA Boost for learners aged 5 to 25. Some 500,000 volunteers and teachers guide more than 15 million students each year. The JA Company Program helps students form real companies and progress through multi-tier competitions, culminating in the De La Vega award among regional champions. The innovation is not a single course, but educational infrastructure that links learning, mentoring, venture practice and public competition, so that countries can share one standard while keeping local issues and languages.



▲ 课堂上学生向商业导师展示产品原型，对应JA以志愿者辅导驱动的实战创业训练。
A student presents a product prototype to a business mentor in class, corresponding to JA’s volunteer-mentored venture training.



▲ 不同背景的青年学生共同研习项目方案，体现平台面向多元学习者的模块化培养。
Young students from different backgrounds work through a project together, reflecting modular programmes for a diverse cohort.

面向全球的普惠价值与可持续创新人才范式

Inclusive Global Value and a Paradigm for Talent in Sustainable Innovation

2024年，JA Worldwide交付超过1,900万次学习体验，覆盖100余个国家和10万余所学校。平台在尼日利亚等冲突影响地区为青年提供就业技能培训，并在希腊、黎巴嫩、意大利等地为难民青年拓展教育机会。全球竞赛中的学生企业，多聚焦塑料污染、心理健康和可持续农业等公共议题，使创业教育同时承担公共问题的练习场。模块化课程与数字平台降低了发展中经济体和资源有限社区获得国际标准创业教育的成本。其普惠意义在于：不把优质创业教育留在少数城市学校，而通过志愿者网络和数字工具把同一套方法送到更广泛的学校与社区。

In 2024, JA Worldwide delivered more than 19 million learning experiences across over 100 countries and 100,000 schools. It provides employability skills in conflict-affected settings such as Nigeria and educational opportunities for refugee youth in Greece, Lebanon and Italy. Student ventures in global competitions address plastic pollution, mental health and sustainable agriculture, turning entrepreneurship education into a rehearsal space for public problems. Modular curriculum and digital delivery lower the cost of internationally benchmarked entrepreneurship education for developing economies and resource-constrained communities. The inclusive claim is that high-quality venture education is not reserved for a few urban schools, but carried to a wider set of schools and communities through volunteers and digital tools.



▲ 来自不同背景的青年围绕笔记本电脑交流，呈现跨境校友网络与包容性学习社区。
Young people from diverse backgrounds exchanging ideas around a laptop, illustrating JA’s cross-border alumni network and inclusive learning community.



▲ 多元背景的青年在导师带领下共同研习项目方案，体现全球专家网络对可持续创新人才的实战赋能。
A mixed team reviews a project on a laptop under mentoring guidance, showing how JA’s global expert network enables hands-on talent development.