Advance network innovation and strengthen the construction of new infrastructure

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China Unicom undertakes the significant mission of building a Cyber Superpower and Digital China, adhering to the principles of moderate advancement, scientific planning, and coordinated development. It accelerates the construction of network infrastructure and actively plans computing power infrastructure to lay a solid digital foundation for Chinese-style modernization.

Measures adopted in 2024

- The Company adhered to co-build co-share, precisely strengthened and filled blind spots, enhanced the breadth and depth of mobile network coverage and user perception. Broadband network capability continued to improve, completing gigabit deployment in developed towns and above areas.
- The Company promoted the construction of computing and digital smart application capabilities, achieving a nationwide integrated deployment for IDC, completing the basic intelligent computing deployment of bases and highlands, and establishing a 400G computing power intelligent network AINet.
- The Company steadily advanced the "Three-Year Action Plan for Mobile Network Quality Improvement" and the "Special Action for Network Operation Quality Enhancement", launched a three-year special action for ultra-lean networks, and achieved quality and efficiency improvement in network operation and maintenance through intelligent network operations.
- The Company gradually expanded the deployment of international network infrastructure, broadened overseas infrastructure connections, accelerated the deployment of submarine cables in key regions, and strengthened the deployment of international intelligent computing capabilities.

Actions to be taken in 2025

- The Company will continuously strengthen the construction of new infrastructure, accelerate the reshaping and renewal of the backbone optical cable network, promote the sharing and upgrade refarming of 800/900MHz low-band frequency, continuously enhance gigabit capability, and steadily advance the demonstration of ten-gigabit cities.
- The Company will continuously improve the deployment of its computing power system, serve the development of artificial intelligence, create more technologically advanced, green and low-carbon new data centres, and build an end-to-end integrated computing power intelligent network AINet.
- The Company will promote the optimisation of broadband network quality to achieve industry-leading broadband network satisfaction, deepen the special management of hidden dangers and faults, establish a network-side perception optimisation management system, and ensure operational safety.
- The Company will, in conjunction with the commissioning and operation of the Qingdao exchange, Hainan exchange, and new submarine cables, continuously optimise the traffic flow from domestic regions to East Asia, Southeast Asia, and North America to reduce domestic detours; and actively promote the construction of new channels in key directions such as Europe, Japan, and Singapore.

Comprehensively strengthening the construction of new infrastructure

China Unicom continues to strengthen the construction of new infrastructure, accelerating the development of intelligent computing centres to create a high-throughput, high-performance, and highly intelligent computing power AI Network; deepening co-build co-share to advance air-ground integration, creating an agile, efficient, and intelligent ubiquitous smart network; and enhancing the construction of international submarine and land cables to promote global network interconnection.

Strengthening the infrastructure of Connectivity and Communications

China Unicom accelerates the construction of the Connectivity and Communications network, continuously enhances mobile network coverage, speeds up the construction of high-speed broadband networks, meticulously builds the premium government-enterprise network, and advances the integration of terrestrial, submarine, and air networks.

Strengthening mobile network coverage

China Unicom continues to advance the construction of a mobile network with broader coverage, stronger capabilities, better quality, and improved experience, consistently deepening the coordinated development of 5G/4G IoT to enhance mobile network coverage and subscribers' perception.

- The Company enhances the breadth and depth of network coverage, with continuous 5G coverage completed in towns and above regions. 5G-A carrier aggregation achieves typical coverage in 300 cities, RedCap achieves large-scale deployment in 100 cities.

- The monitoring report released by the China Academy of Information and Communications Technology shows that China Unicom's 5G network speed maintains an industry advantage, and its 4G network speed is industry leading.

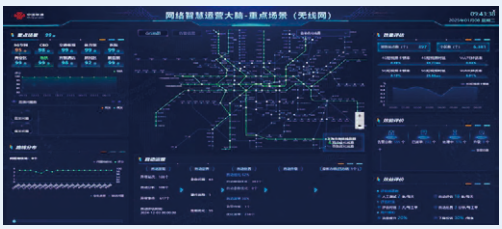
Over **1.375** million of 5G mid-band base stations

850,000 low-band base stations available

Over **2.3** million of usable 4G mid-band base stations

Total number of IoT terminal connections exceeded **620** million

Shanghai Unicom and Shanghai Metro have joined forces to comprehensively enhance 5G network coverage, achieving full 5G coverage across multiple metro lines. They have innovatively applied 5G-A technology to achieve an ultimate downlink experience speed, with peak speeds exceeding 3Gbps, significantly improving the normal perception rate of the metro network. This has resulted in a 100% 5G network residency rate and voice call connection rate within the metro system, delivering an exceptional communication experience.



Shanghai Metro Wireless Network Smart Operation System

Upgrading broadband network capabilities

China Unicom continues to enhance high-quality broadband network coverage, promoting the comprehensive realisation of gigabit broadband networks and steadily advancing the construction of ten-gigabit cities.

- Broadband covered 560 million residential units, of which gigabit fibre network covered 430 million residential units; the broadband experience download speed increased by 18.4% year-on-year.

- The Company won the "Premium User Experience with Optical Broadband Award 2024" at the Mobile World Congress (MWC).

Building a premium government-enterprise network

China Unicom continues to advance the construction of a government-enterprise network offering ultra-wide coverage, ultra-large bandwidth, ultra-low latency, and ultra-high reliability for an intelligent experience, achieving continuous improvement in coverage and leading the industry in scale.

Premium User Experience with Optical Broadband Award 2024

• The Company cumulatively established over 40,000 commercial 5G application projects, serving over 16,000 5G private network customers, covering 80 major categories of the national economy.

• OTN coverage access points reached 45,000, with intelligent OTN products fully launched, providing end-to-end automatic service activation capability; the coverage rate of smart metropolitan area network aggregation areas reached 100%, and the coverage rate of ToB nodes exceeded 80%.

• The Company promoted the integrated development of satellite Internet, low-altitude Internet, and terrestrial networks, providing industry terminals with direct satellite connections and emergency communication services for urban low-altitude areas, remote regions, maritime, aviation, and other sectors.

Strengthening the infrastructure of Computing and Digital Smart Applications

China Unicom has established a solid foundation for Computing and Digital Smart Applications capabilities. As a pioneer and advocate of computing power network, it fully undertakes the national "Eastern Data and Western Computing" project, continuously building computing network infrastructure, focusing on the development of the next-generation Internet, advancing towards the integration of general computing, intelligent computing, supercomputing, and quantum computing, and creating a new paradigm of intelligent computing infrastructure that is comprehensively covered, smartly upgraded, highly efficient, energy-saving, and securely intelligent.

Strengthening the construction of intelligent computing centres

China Unicom accelerated the construction of data centres and core node intelligent computing centres, fully ensuring resource security in hotspot areas and continuously enhancing the scale of intelligent computing.

• The Company continuously improved its integrated computing power deployment, establishing over 300 computing resource pools, with cloud pools covering more than 270 cities.

• The Company conducted digital intelligent upgrade of data centres, with the total scale of IDC resources across the network exceeding 420,000 cabinets, creating a well-structured, abundant, and green low-carbon computing infrastructure base.

• The AI computing power has formed a base + highland deployment, creating two clusters with over 10,000 AI accelerators in Shanghai and Hohhot, with a total computing power scale exceeding 17 EFLOPS.

Lingang International Data Port is the core hub of China Unicom's intelligent computing deployment, dedicated to building a high-level China Unicom computing power cluster hub node and a high-standard national-level cross-border data flow hub node. It possesses the capability for ultra-large-scale intelligent computing cluster deployment and has received the first batch of domestic 5A-level intelligent computing centre computing power performance certification in Shanghai.

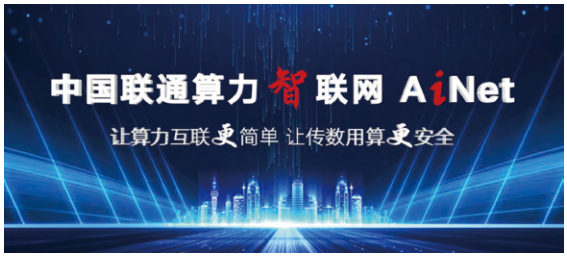
China Unicom Lingang International Data Port

Strengthening intelligent computing network construction

China Unicom continued to strengthen the construction of the national backbone network, accelerated the deployment of high-speed interconnection channels, and promoted the connection of the computing power AI Network to more computing hub nodes, laying a solid foundation for the construction of Digital China.

• The Company accelerated the deployment of the "New Eight Verticals and Eight Horizontals" backbone optical cable network, implemented large-scale deployment of G.654E new optical cables between national hub nodes, established foundational capabilities for massive data transmission, and strengthened the base for high-speed computing networks.

• The Company focused on national hub nodes and relied on the backbone optical cable network, and the initial construction of a dual-plane heterogeneous 400G ROADM network has been achieved to enable massive data transmission.



China Unicom launched the "computing power AI Network AINet"

• The Company established a low-latency network for metropolitans, deploying 2×200G ultra-high-speed interconnection channels between national hubs to meet the demands for ultra-large capacity, ultra-low latency, and ultra-long-distance transport capacity.

Strengthening global network infrastructure

China Unicom, guided by market demand, expanded the breadth of international network coverage and network capacity, enhancing subscribers' perception.

Strengthening international infrastructure connections

China Unicom continued to optimise its international network, accelerated the construction of the "Belt and Road" Digital Silk Road, and strengthened the global connectivity infrastructure. The Company strengthened strategic assurance for the construction and operation of international submarine and terrestrial cables and accelerated the evolution towards target architecture. We fully enhanced network accessibility and routing diversity, continuously strengthened network service capabilities, and actively supported Chinese enterprises going global and foreign enterprises entering the domestic market.

- In 2024, international submarine cable resource capacity reached 100T, up by 13.6% year-on-year.
- The global physical PoP points reached 140, with product PoP capabilities reaching 400, interconnecting with over 140 international internet networks, and the total international interconnection bandwidth exceeding 6Tbps.
- Network resources reached 80 countries and regions globally, while mobile roaming services covered 264 countries/regions.

Strengthening the deployment of international intelligent computing capabilit

China Unicom adhered to the national strategy, actively engaged in the construction of overseas data centres, continuously improved the deployment of international computing power capabilities, and strengthened resource co-build and co-share with upstream and downstream partners to lay a solid foundation for accelerating the iteration and formation of China Unicom's international computing power product system.

- The Company expanded global computing power resources using Singapore, Japan, Malaysia, Indonesia, and Frankfurt as hubs.
- The Company utilised its own Ascend intelligent computing capabilities, accelerated the iteration to form a series of computing power products aimed at the international market.
- Unicom Cloud has achieved deployment in over 330 geographic regions and more than 300 data centres worldwide.
- The Company built a green advanced intelligent computing centre, utilising a smart operation management platform to achieve real-time AI intelligent diagnostics and flexible, precise power allocation, thereby enhancing energy efficiency.

China Unicom (Hong Kong) Tseung Kwan O Intelligent Cloud Data Centre has high-density cabinet capacity reserves, connecting Mainland China through six cross-border networks and extending to over 60 countries and regions. It has obtained certifications such as "BEAM Plus Hong Kong Green Building" and "LEED Gold U.S. Green Energy and Environmental Design Gold Medal".

China Unicom (Hong Kong) Tseung Kwan O Intelligent Cloud Data Centre

Enhancing the operational efficiency of new infrastructure

China Unicom continued to advance the integration of operations, delivery, support, and services, consistently adhering to a customer-centric approach, enhancing the integration of network R&D and operations, and promoting high-quality network operations.

Continuously improving network operational efficiency

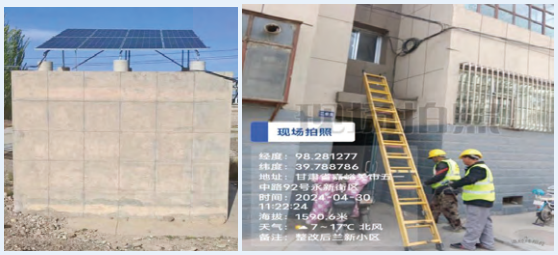
China Unicom conducted refined network operations to continuously enhance network quality; it advanced large-scale ultra-lean networks and digital intelligence operations to improve resource utilisation and network operation effectiveness.

Enhancing the quality of network services

China Unicom has solidly advanced the "Three-Year Action Plan for Mobile Network Quality Improvement" and the "Special Action for Network Operation Quality Enhancement", achieving continuous enhancement in subscriber perception and effective improvement in production quality and efficiency.

- The good experience rate of voice services increased to 92.7%, and the self-measured satisfaction of fixed broadband network continuously maintained the industry's first place.
- The Company organised and carried out special tasks to tackle broadband network hidden dangers and faults, with significant year-on-year improvements in the number of large-scale faults and fault recovery time.
- With collaboration in terminal, network, business and service, the Company promoted network perception optimization, resulting in a year-on-year reduction of 28% in broadband network complaint calls.
- The Company continually expanded the IP backbone network, with an average annual intranet IPv4 latency of 23.93 ms, maintaining the industry's leading position.
- The Company established a dual closed-loop management process centred on problem-solving for both network-side and customer service-side, reducing the mobile network subscribers complaint rate by over 40%.

China Unicom Gansu Jiayuguan branch has rationally planned the network lines, actively carried out the rectification of "flying wires", ensuring that they are dismantled wherever possible, streamlined where not dismantled, neatly bundled, and transformed underground as a comprehensive rectification approach to eliminate safety hazards and enhance the aesthetic appeal of the community living environment.

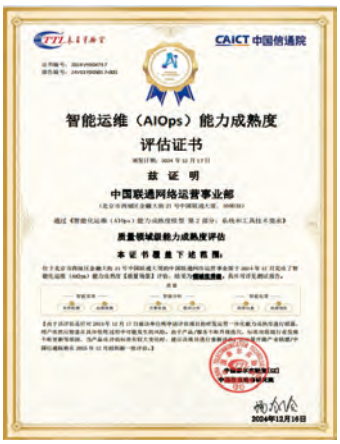


Community after rectification of wires

Promoting intelligent network operations

China Unicom continued to strengthen digital intelligence operations, effectively enhancing resource utilisation, and achieving good results in smart network operations.

- The Company empowered the Global Network Operations Centre (GNOC) to enhance monitoring, command, and dispatch capabilities, achieving comprehensive visibility across the entire network and all specialties at a single point, and significantly improving fault handling capabilities for business operations.
- Intelligent energy-saving technologies such as the automatic start-stop of Active Antenna Unit (AAU) and all-time AI energy saving have been launched, improving power-saving efficiency by 30%, with electricity savings exceeding 800 million kWh in 2024.
- China Unicom's "Network Intelligent Operation and Maintenance Robot System" has passed the excellent-level evaluation in the quality domain of intelligent operation and maintenance AIOps, becoming the first company to achieve the excellent level in this domain.



The "Network Intelligent Operation and Maintenance Robot System" has passed the excellent level evaluation in the quality domain of intelligent operation and maintenance AIOps.

Continuous improvement of the network operation system

China Unicom continued to optimise the network operation system architecture by enhancing organisational structure, establishing an operational system, and constructing a network management and control system, thereby providing a solid foundation for improving network operation efficiency.

- The Company synergistically advanced the optimisation and adjustment of regional structures, strengthened specialised regional management, and gradually implemented the evolution from a "6+3" to an "8+5" structure, forming a new regional structure that was rationally organised and capacity-balanced.
- The Company constructed an integrated and centralised Unicom Cloud and intelligent computing operation system, with a unified service interface.
- The Company promoted domestic and international cross-regional resource dispatch, gradually achieving a global integrated network.