IPv6 Deployment and Application Scenarios in Xiong'an New Area

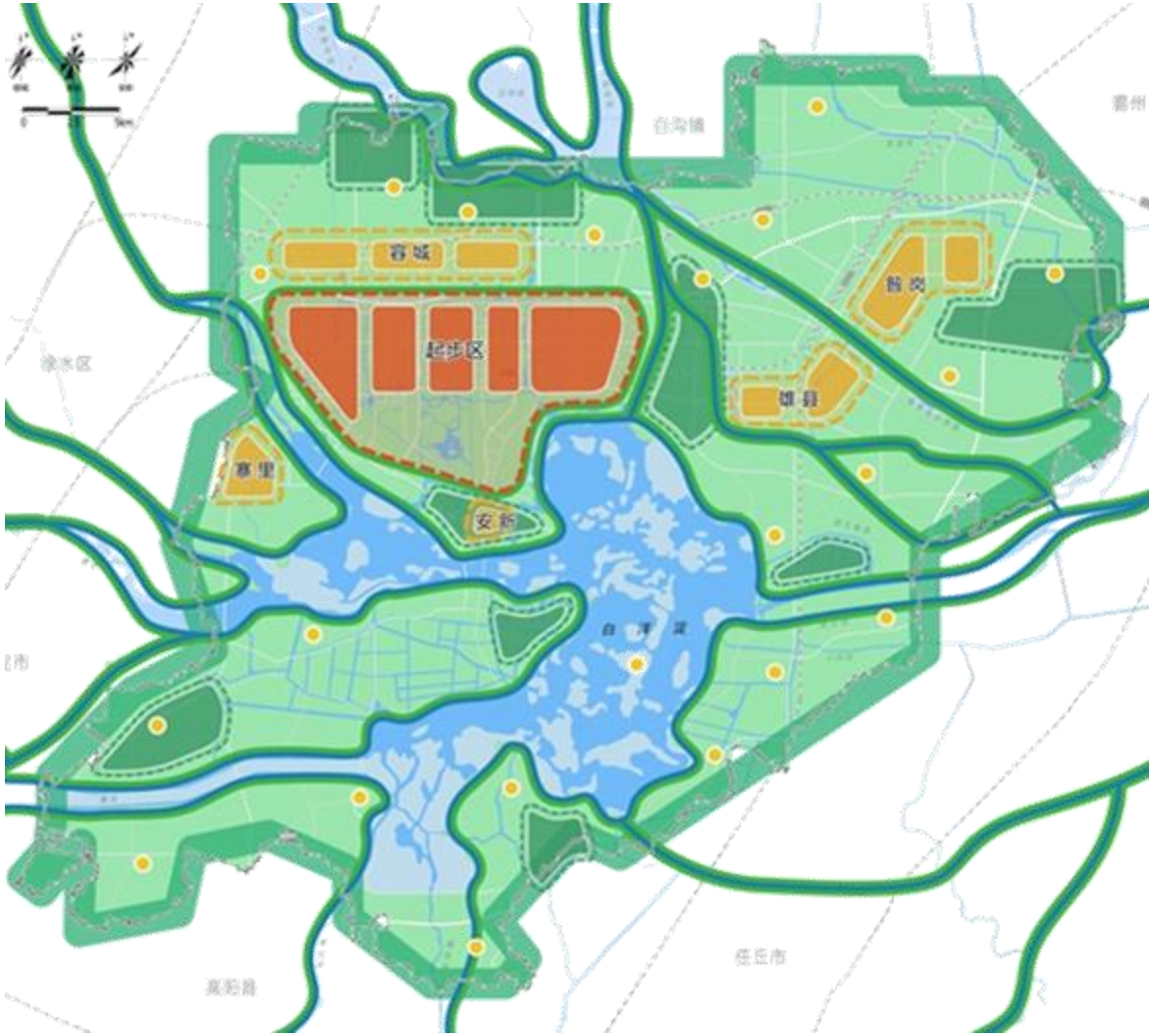
February 2026

Overview of Xiong'an New Area

Millennium Project And National-level New Area

As a national-level new area established in 2017 by the Central Committee of the Communist Party of China and the State Council, Xiong'an New Area in Hebei Province is hailed as a "millennium project" and a "major national initiative."

It covers a planned area of 1,770 square kilometers, with the core mission of serving as a relocation hub for non-capital functions from Beijing.



One central core - Five auxiliary zones - Multiple nodal points

One central core: The start-up area (core urban district).

Five auxiliary zones: The counties of Xiongxian, Rongcheng, and Anxin, along with the two cluster areas of Zhaili and Ganggu, which develop in a coordinated manner.

Multiple nodal points: A network of characteristic small towns and beautiful villages distributed across the region.

Advanced path of digital development

Digital Twin City: By "planning and developing the digital city in parallel with the physical city," it aims to become a globally leading digital twin city.

IPv6 Pilot Initiative: Designated as a "comprehensive pilot city for IPv6 technological innovation and integrated application" by the Cyberspace Administration of China and other ministries, Xiong'an is committed to building a pure IPv6 demonstration zone across the entire area.

Digital infrastructure is being rapidly deployed

Construct the Smart City Architecture: One Central Hub + Four Pillar Systems.

Three Entire areas

Comprehensive Sensing

Full-Scale IPv6 Deployment

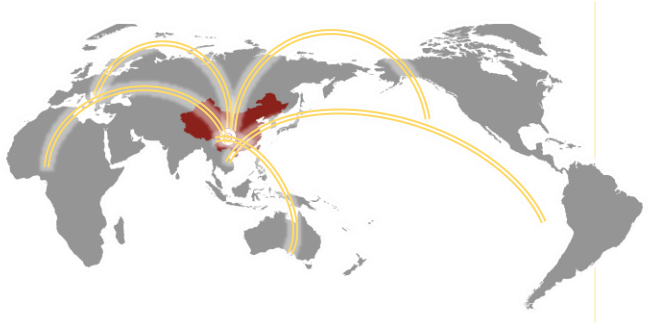
HarmonyOS-Centric Ecosystem

Implement moderately ahead-of-demand deployment of smart sensing infrastructure.
Designate as a National Comprehensive IPv6 Pilot City.
Promote city-wide adoption and integration of HarmonyOS.

Two channels

International and domestic network channels

International Internet data with 200G bandwidth
The dedicated channel is now operational
Upgrade to a national-level core network node



One Center

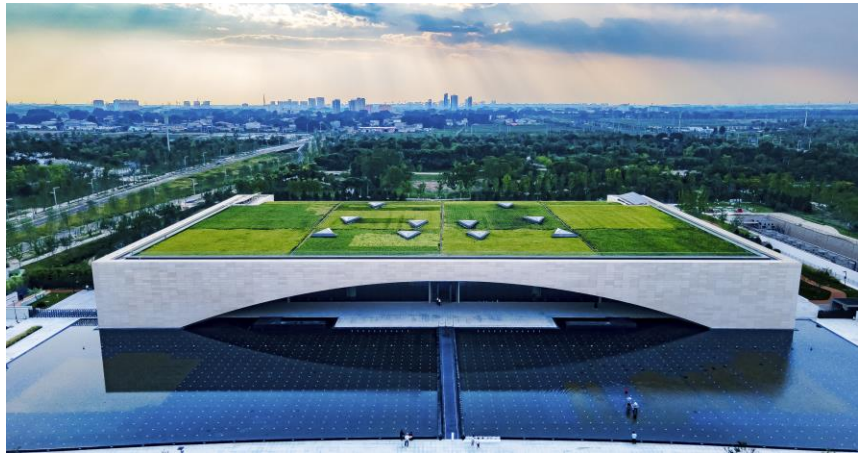
Urban computing center

Construct a Self-Developed Urban Computing System with an ECH-AI (Edge, Cloud, HPC, AI) Synergistic Architecture.

Digital infrastructure is being rapidly deployed

Construct the Smart City Architecture: One Central Hub, Four Pillar Systems.

One Center



With the Urban Computing Center as its core, we will build an autonomous, open, secure, and trusted City Brain.

Four Systems

- Autonomous Digital Infrastructure
- Unified & Twin-Co-Growth Construction System
- Layered Smart Operations System
- Scenario-Led Replication Framework

To forge an intelligent urban entity that is ubiquitous and omnipresent, leveraging digital technologies to advance the development of a high-standard socialist modernized city.

Xiong'an IPv6 Construction and Deployment Achieve Stage Results

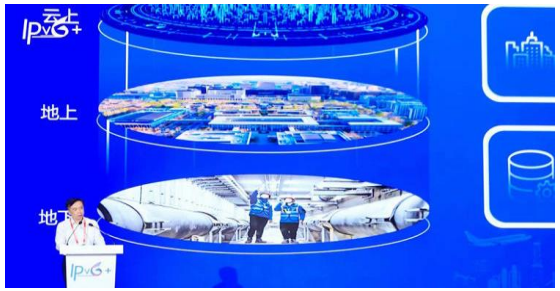
Formulate the Top-level Plan.

In 2019, the “Special Plan for Smart City Construction in the Hebei Xiong'an New Area” was issued. It mandated taking the lead in the comprehensive deployment of IPv6, building a high-speed, ubiquitous, widely adopted, and intelligent next-generation Internet, and achieving full IPv6 support across networks, applications, and end-devices.

Awarded: Outstanding IPv6 Pilot City

National IPv6 Pilot

In January 2022, the city successfully applied for and was designated as a comprehensive pilot city for IPv6 technological innovation and integrated application by the Cyberspace Administration of China (CAC). In July 2024, it passed the final review, receiving a grade of A (top ranking), and was concurrently recognized as an Outstanding IPv6 Pilot City.



nclusion in the Compendium of Excellent Cases (Technology Innovation & Convergence) for Showcasing Full IPv6 Implementation.

Host a Professional Tournament

In 2024, the Xiong'an International Next-Generation Network Technology (IPv6) Application Competition was successfully held. The competition attracted 123 submissions from leading industry companies, research institutes, universities, and startups, spanning over 10 provinces across the country. Of these, 63 entries advanced to the finals, resulting in 36 awards comprising first, second, and third prizes, as well as honors for excellence.

Drives the Development of the IPv6 Industrial Ecosystem: The Role of the Application Competition.

Establish Network Research Institute.

The Future Network Innovation Research Institute of Xiong'an New Area (abbreviated as the "Network Research Institute") was established in April 2025. It brings together key elements of IPv6 innovation to provide technological innovation and integrated application services, thereby leading the innovation and development of the technology industry.

The IPv6 Exhibition Hall has been completed and opened to the public.

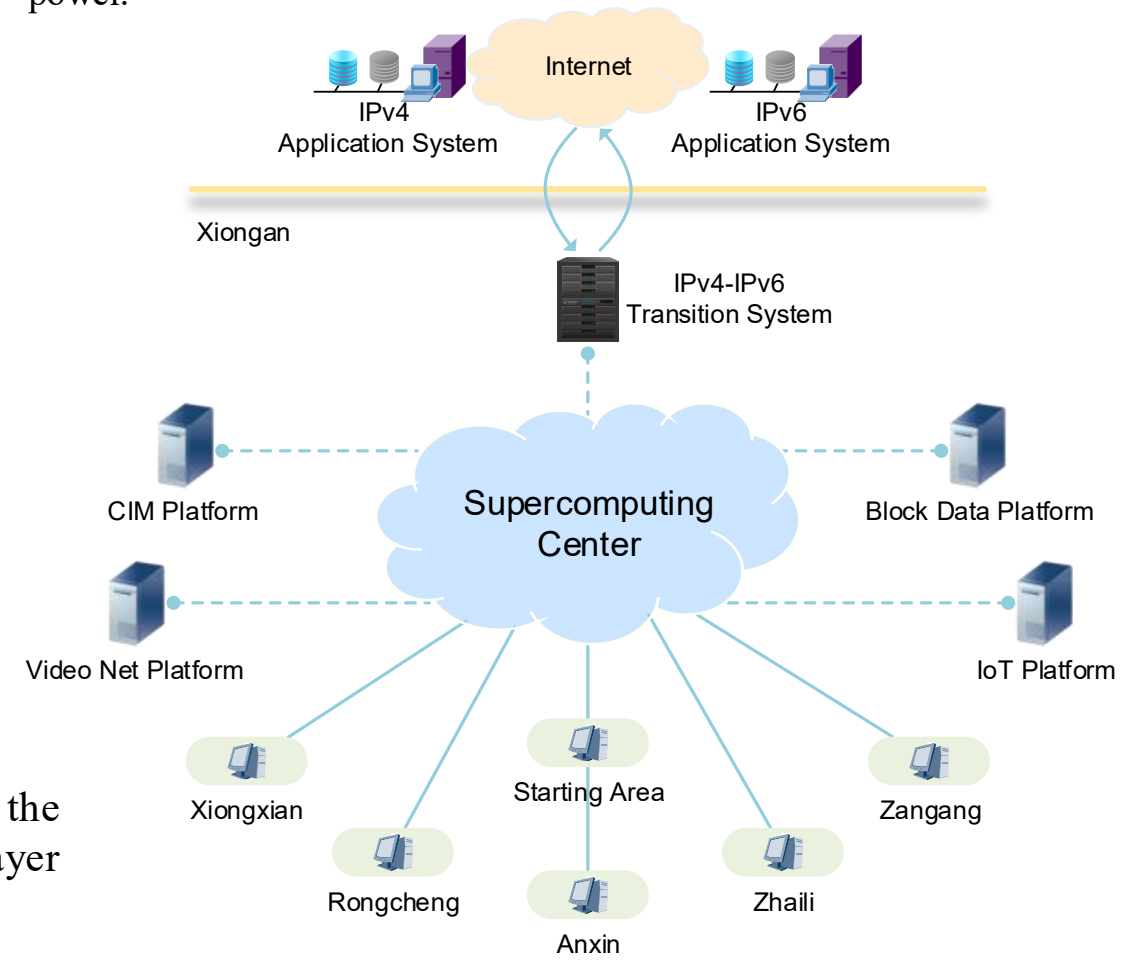
All IPv6-Only Explores a New Path for the Upgrade of the Internet

Xiong'an aims to build a IPv6-Only future city

- Carry out top-level design, support technological innovation,and promote industrial development.
- Strictly control the approval process for urban construction projects.
- support enterprises and research institutions to carry out technological innovation and integrated application

Deployment of IPv6-only in whole regions greatly reduces the construction and operating costs of digital infrastructure and upper-layer applications.

Xiong'an has built a smart city infrastructure base with "one center and four platforms" as the core, and is focusing on building a "digital twin city" with global perception of urban activities, urban data integration and sharing, and collaborative application of algorithm and computing power.



Enabling Innovation: Continuous Development of IPv6+ Application Scenarios

In the process of building an IPv6 pilot city, the Xiong'an has seen a continuous emergence of innovative application scenarios, forming three technology innovation tracks: IPv6 network, application, and management. It focuses on city-level integrated IPv6 solutions, covering multiple industrial directions such as IPv6+ Smart City, IPv6+ Satellite Internet, IPv6+ Digital Roads, IPv6+ Smart Community, IPv6+ Digital Home, IPv6+ Smart Charging Piles, and IPv6+ Cybersecurity. The district is also seizing the strategic high ground in industrial development, including IPv6 standards, platforms, and chips/modules.

Xiong'an International IPv6 Application Competition

IPv6-Based Open Access Platform for Digital Homes

IPv6+ Digital Road

IPv6+ Satellite Internet

Alliance for the Development of the Digital Home Appliance

IPv6+ Smart Charging Pile

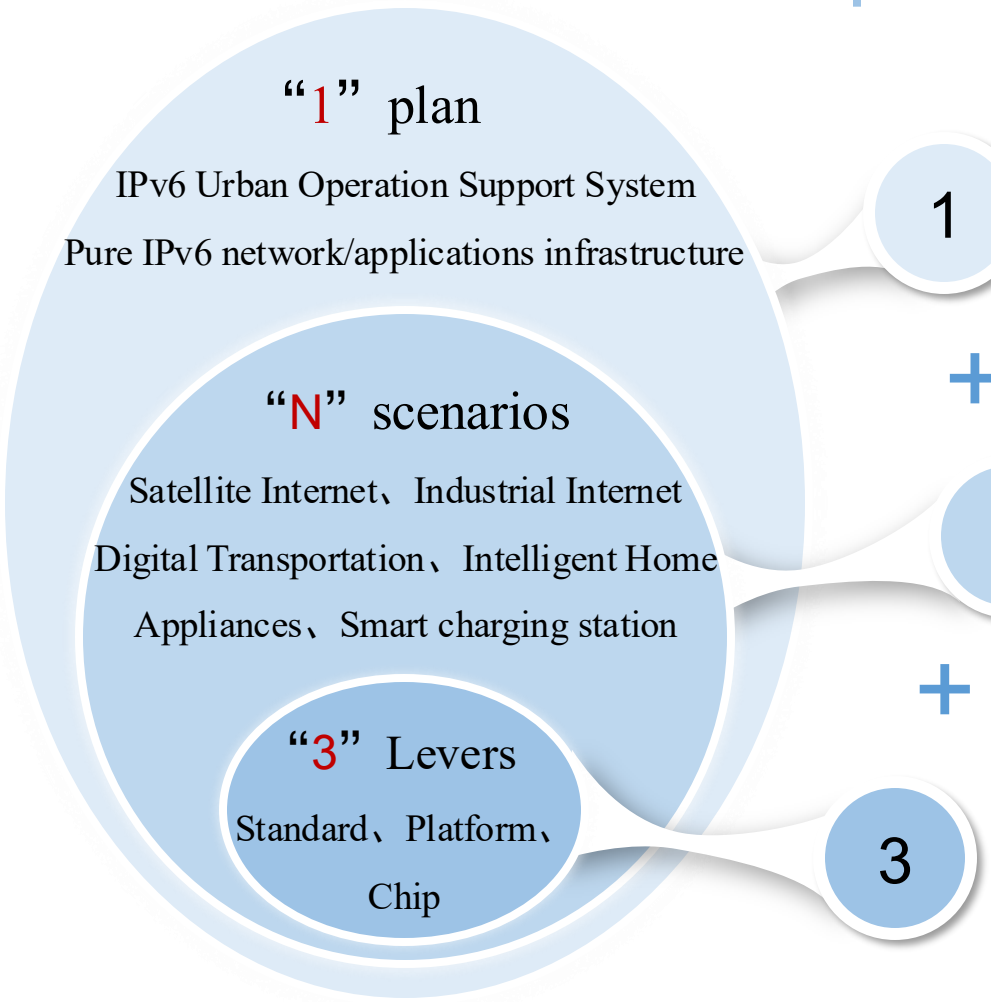
IPv6+ Digital Home

IPv6+ Smart Community

Exploring the New Model of IPv6 Industry Development in Xiong'an "1+N+3"

Abandon IPv4, leverage IPv6's advantages, and establish an innovative development model of "1+N+3"

The decentralized and platform-independent nature of IPv6 is transforming traditional technical architectures, giving rise to new business models and management approaches, and creating a continuous stream of innovation.



To develop a city-level integrated IPv6 solution.With the core objective of achieving rapid IPv6 upgrade and backward compatibility in IPv4-IPv6 interoperability systems, we will develop comprehensive IPv6 upgrade plans covering cloud-network infrastructure, terminal devices, service systems, and cybersecurity. This will establish a complete IPv6 urban operation support system, enabling swift deployment of city-level IPv6 network and application infrastructure.

To establish numerous innovative scenarios for converged applications leveraging IPv6+.We will actively explore the enabling applications of IPv6 across various sectors, including satellite internet, industrial internet, digital transportation, smart home appliances, smart charging piles, as well as finance, education, healthcare, and media. The goal is to achieve holistic and scaled adoption of IPv6, and to foster a vibrant innovation cluster in the IPv6 ecosystem.

For each IPv6+ converged application innovation scenario, we will formulate unified standards, construct open platforms, and develop universal chips/modules. This will yield a series of new standards, technologies, products, services, and business models, thereby enhancing the core

The Direction of the Subsequent Work-Building the Four Centers

In the future, Xiong'an New Area will establish four key IPv6 hubs, transforming it into a global hub for IPv6 innovation and entrepreneurship.

A model center for pure IPv6 across the entire domain

Building on the achievements of the Scenario Convergence Competition, Xiong'an New Area is advancing the single-stack deployment of IPv6 across networks, terminals, and applications, ensuring the integrated development of smart city construction and IPv6 in the region.

Innovation Center for New Technology Development

To advance IPv6 technologies including future networks, computing-network convergence, IPv6 network slicing, and SRv6, we encourage innovation in IPv6 technologies and promote the industrialization, productization, and service-oriented development of cutting-edge IPv6 solutions.

R&D Center for New Application Products

Guided by the all-encompassing IPv6 adoption demand in Xiong'an New Area, we will open up scenarios, data, and computing resources to create an optimal environment for developing new IPv6 applications and products.

Capability Center Serving National Strategy

By building on the achievements of the new district and continuously summarizing best practices, we will develop replicable solutions and mechanisms for nationwide adoption, thereby accelerating IPv6 deployment and supporting national strategic objectives.

Xiong'an Future City Scenario
Collection Competition

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Xiong'an New Area

THANKS

Future City Digital Xiongan

Build a New IPv6 Ecosystem