

MP-IDSA *Commentary*

China's Pursuit of Satellite Internet Infrastructure

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S*ummary*

China is developing its mega-constellations of satellites to fulfil its objective of a satellite Internet communication system by 2035.

On 13 March 2026, China launched the 20th group of low-orbit internet satellites under its ‘China SatNet’ Project. China aims for an integrated and self-reliant space internet, composed of satellite constellations across Low Earth Orbit (LEO), Medium Earth Orbit, and Geostationary Orbit. As of January 2026, China has deployed a significant number of satellites in their respective orbits. These include Satellite Internet High-orbit Satellites (3), ChinaSat (38), and Guowang (3) in Geostationary Orbit; Smart Skynet (2) deployed in Medium-Earth Orbit; and Qianfan/SpaceSail (108), Guowang/ China SatNet (154 launched + 24 test satellites), Tianqi (41), Xingyun (2), and GEESATCOM (64) in Low-Earth Orbit.¹

Satellite internet is a technology that provides internet service via communication satellites. Compared to ground-based infrastructure, satellite internet offers significant advantages, including extensive coverage, rapid deployment, and the ability to maintain stable communication during emergencies such as natural disasters.² Its service covers entire regions on Earth. Satellite internet works by transmitting data signals from the user's computer to a satellite in space, which then relays the signals to a Network Operations Centre (NOC) on Earth, which routes the data to its final destination on the internet.³

Due to its wide coverage, it has become a popular choice for users in rural and hard-to-reach areas. It enables communication across specialised fields such as aviation, maritime navigation, military operations, scientific research and emergency response. Among the functional LEO satellite communication networks are the United States’ Starlink and Kuiper, and ‘OneWeb’—a joint venture project of France, the UK, and India. China is developing its LEO satellite communication network that primarily involves the ‘Guowang/China SatNet’ and ‘Qianfan/Spacesail’ mega-constellations of LEO satellites.

The ‘Guowang/ China SatNet’ represents China’s first mega-constellation LEO satellite internet initiative, as well as its first integrated space-and-air 6G internet project. The plan includes launching a total of 12,992 satellites, organised into two sub-constellations: GW-A59 (6,080 satellites) and GW-A2 (6,912 satellites), to establish a high-speed communication network with global coverage.⁴ As per the

¹ Altynay Junusova, Rebecca Arcesati and Antonia Hmaid, [“Orbital Geopolitics: China's Dual-use Space Internet”](#), MERICS, 11 February 2026.

² [“Exclusive: My Country’s First Official High-Orbit Satellite for Satellite Internet! This is the Real Highlight!”](#) (独家：我国首颗正式卫星互联网高轨卫星！这才是重大看点！), *Sina*, 1 March 2024.

³ [“Satellite Internet \(卫星互联网\)”](#), Baidu, 2026.

⁴ [“China StarNet GW Constellation — A National-Level Low Earth Orbit \(LEO\) Satellite Internet Project Led by China Satellite Network Group](#) (中国星网 GW 星座-中国卫星网络集团主导的国家级低轨卫星互联网工程)”, Baidu, 2025.

schedule, the China SatNet Project is required to deploy approximately 1,300 satellites by 2029, 6,500 by 2032, and 12,992 by 2034. As of April 2026, China has deployed about 160 satellites operating in low Earth orbit, including the 20th batch deployed in March 2026.⁵ It needs to deploy nearly 1,140 satellites by 2029, a task that seems difficult due to technological bottlenecks in reusable rockets.

The ‘Qianfan Constellation’ project aims to deploy 15,000 satellite broadband services. The project will be completed in three phases. Phase I will deploy 648 satellites by 2025 to achieve regional coverage; Phase II will deploy 1,296 satellites to complete global coverage by 2027; and Phase III is planned to feature all 15,000 satellites by 2030 to deliver diversified, integrated internet services.⁶ However, the project is delayed due to a lack of reusable-rocket technology, and as of April 2026, only 108 satellites of the Qianfan constellation have been deployed. The project has failed to meet the scheduled deadlines for satellite deployment.

In addition, China launched its first high-orbit satellite internet service in November 2023, which largely covers the entire country as well as key regions along the ‘Belt and Road’ initiative. This network primarily comprises three high-throughput satellites: ChinaSat 16, ChinaSat 19, and ChinaSat 26.⁷ These three geostationary satellites cover three different regions of the globe. Among them, ChinaSat 16, launched in 2017, provides coverage to the central, western and eastern regions, as well as offshore areas; ChinaSat 19, launched in 2022, serves the eastern regions, Southeast Asia and Pacific shipping routes; ChinaSat 26, launched in 2023, was the first satellite in the series to exceed 100 Gbps in capacity, extending its coverage to encompass all of China, parts of Russia, and the surrounding Indian Ocean region.⁸

Satellites complement terrestrial 5G networks in coverage, reliability and flexibility, especially with low-Earth orbit (LEO) satellite integration, while terrestrial 5G networks offer greater scope for improving communication.⁹ Therefore, the satellite internet market is rapidly evolving due to 5G integration and increased demand for

⁵ [“China StarNet Project -A Satellite Network Initiative Led by the Chinese Government \(中国星网计划-中国政府主导的卫星网络计划\)”](#), Baidu, 2026.

⁶ Larry Press, [“Chinese LEO Satellite Internet Update: Guowang, Qianfan, and Honghu-3”](#), CircleID, 3 September 2025.

⁷ [“High-Orbit Satellite Internet — An Internet Network Constructed Using High-orbit Satellites \(高轨卫星互联网 -通过高轨道卫星构建的互联网网络\)”](#), Baidu, 2026.

⁸ Ibid.

⁹ Zhang Jianyin, NI Lingfei, Wang Hanbai, GU Shangming, Liu Yu and Liu Jinglei, [“Research on the Enhancement and Key Technologies of 5G Network for Satellite-terrestrial Integration \(面向星地融合的 5G 网络增强及关键技术研究\)”](#), China Mobile Research Institute, 2024.

connectivity in remote areas. According to the 2024 Global and China Satellite Internet Industry Overview Report published by the Taibo Think Tank, China’s satellite internet market size reached 64.8 billion RMB (US\$ 9.3 billion) in 2024. This figure is projected to grow to 75.1 billion RMB (US\$ 10.8 billion) by 2025 and to 151.2 billion RMB (US\$ 21.8 billion) by 2030.¹⁰ However, it currently faces significant challenges regarding cost control and achieving large-scale commercial applications.¹¹

Moreover, China is facing technological bottlenecks in developing reusable rockets to reduce costs in its satellite internet programme.¹² Although China possesses a relatively comprehensive suite of launch vehicles, it still lags significantly behind SpaceX in reusable-rocket technology and high-frequency launch capabilities. This disparity results in constraints on both launch costs and launch frequency. Unless and until China improves its reusable launch-vehicle technology, it will be difficult to deploy thousands of satellites before the 2035 deadline.¹³

Conclusion

China is still building its LEO satellite networks, which include two mega-constellations: Qianfan and Guowang. The satellite-based communication market is rapidly evolving due to increased demand for connectivity in remote areas. However, China faces major technological bottlenecks in developing a reusable rocket capable of launching tens of thousands of satellites for its satellite-based communication networks, raising doubts about completing the comprehensive satellite network system by 2035.

¹⁰ Zhang Xiaojie, “[From Trials to Commercialization: Satellite Internet Accelerates the Reshaping of the Communications Industry Ecosystem](#) (从试验到商用，卫星互联网加速重构通信产业生态)”, *Yicai News*, 5 December 2025.

¹¹ Ibid.

¹² “[China Satellite Investment Soars as SpaceX Sparks Race for Piece of the Sky](#)”, *Think China*, 16 March 2026.

¹³ Zhou Ruomin, “[China’s Qianfan and Guowang Constellations: The Development of Low Earth Orbit Satellite Networks](#)”, Institute for CCP Civil-Military Relations and Operational Concepts, December 2025.

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