

Translation



The following plan from the Chinese equivalent of NASA sets goals for the development of China's emerging commercial spaceflight industry. In China, space has until very recently been the near-exclusive preserve of the military and state-owned aerospace conglomerates, and this plan is an initial attempt to smooth the path for private Chinese space companies to enter this market. The plan proposes making state-funded space technologies accessible to private firms for commercialization, making test, calibration, and telemetry facilities available to private space companies, and establishing laws and insurance for the commercial space sector. It also encourages local governments to prioritize the development of new commercial space companies in their jurisdictions.

Title

China National Space Administration Action Plan to Promote the High-Quality and Safe Development of Commercial Spaceflight (2025-2027)
国家航天局推进商业航天高质量安全发展行动计划(2025—2027年)

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Source

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China National Space Administration Action Plan to Promote the High-Quality and Safe Development of Commercial Spaceflight (2025-2027)

I. Overall Requirements

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the spirit of the 20th Party Congress and of the Second, Third, and Fourth Plenums of the 20th Chinese Communist Party (CCP) Central Committee; fully, accurately, and comprehensively apply the new concept of

development (新发展理念); accelerate the building of the new pattern of development (新发展格局); adhere to high-quality development; uphold the combination of efficient markets and an assertive government (有为政府); persist in doing overall planning for development and security;¹ incorporate commercial spaceflight into the overall national space development framework; foster an open, transparent, fair, and just policy and regulatory environment; promote optimized resource allocation and improved development efficiency; advance supply-side structural reform in the space sector; improve the industrial ecosystem; accelerate the formation of new quality productive forces (新质生产力) for space; realize an overall enhancement of the effectiveness of space development; and provide strong support for building China into a space powerhouse.²

Persist in innovative thinking and strengthen development momentum. Give full play to the role of commercial spaceflight enterprises as the mainstay of innovation; promote the deep integration of scientific and technological (S&T) innovation with industrial innovation; support and encourage exploratory and leading technological innovation as well as innovation in business models. Adhere to systematic thinking and advance industrial collaboration. Give full play to the decisive role of the market in resource allocation while better leveraging the role of government; strengthen systematic planning and layout across the entire production chain; promote deep integration of the innovation chain, production chain, capital chain, and talent chain; encourage industrial cooperation; and build a sound industrial ecosystem. Persist in rule-of-law thinking to ensure safety and order. Improve the policy and regulatory system; foster a favorable business environment; safeguard the rights and interests of commercial spaceflight development; strengthen safety supervision and management; and advance high-quality development and high-level security in commercial spaceflight.

By 2027, the commercial spaceflight industrial ecosystem will be efficiently coordinated; research, development, and production will be safe and orderly; the scale of the industry will expand significantly; innovation and creativity will be markedly enhanced; resources and capabilities will be developed in a coordinated manner and utilized efficiently; industry governance capacity will be notably improved; and

¹ Translator's note: The Chinese word 安全 encompasses the meanings of both "safety" (protection from accidental harm) and "security" (protection from deliberate harm). In this translation, it is variously translated as "safety," "security," or "safety and security" at the translator's discretion.

² Translator's note: This translation renders the Chinese word 强国 qiángguó—which literally means "strong nation" and is sometimes translated "superpower"—in English as "powerhouse," as in the phrase "space powerhouse" (航天强国). For a more thorough discussion in English of the Chinese word qiángguó, see:

<https://www.newamerica.org/cybersecurity-initiative/digichina/blog/lexicon-wanluo-qiangguo/>.

high-quality development of commercial spaceflight will be basically achieved.

II. Key Measures

(a) Enhance Innovation and Creative Momentum.

1. Competitively open up (开放) national scientific research projects. Open up civilian space research programs and basic research projects to commercial spaceflight entities; strengthen the strategic, forward-looking, and systematic layout of basic research in commercial spaceflight; support R&D of advanced technologies such as new concepts, new products, and low-cost solutions; and accelerate the attainment of high-level S&T self-reliance (自立自强). With a focus on cutting-edge and key technology areas such as advanced space propulsion technologies, advanced satellite platforms and payload technologies, and integrated communication-navigation-remote-sensing applications, encourage commercial spaceflight entities to actively participate in the R&D and construction of civilian space projects and major national special projects.

2. Promote the commercialization and application of national technological achievements. Improve the intellectual property system; promote the establishment of mechanisms for commercial spaceflight entities to spread and apply S&T achievements created through state investment; implement large-scale demonstration initiatives for the large-scale application of new technologies, new products, and new scenarios in commercial spaceflight; explore diversified technological routes; and increase the establishment and opening up of application scenarios. Encourage local governments to establish a number of advanced technology achievement conversion centers and service platforms; establish mechanisms for sharing S&T achievements; provide preferential policies and funding support for the incubation and implementation of space-related S&T achievements; promote the application of state space S&T achievements in the commercial spaceflight field; and enhance the effectiveness of national S&T innovation.

3. Build space S&T innovation platforms. Promote the establishment of the China Commercial Spaceflight Promotion Association (中国商业航天促进会); encourage the rational flow of talent; and establish industry-academia-research institute-user (产学研用) collaborative innovation mechanisms that feature joint development, complementary advantages, shared results, and shared risks. Encourage local governments to form technology innovation centers in key fields such as reusable rockets and smart satellites (智能卫星). Build public technology platforms around key links such as smart manufacturing and final assembly and testing; pursue breakthroughs in general purpose technology R&D and major S&T projects; support

commercial spaceflight entities in accelerating technology iteration; and promote and drive the transformation of space R&D and production toward low cost and large scale.

(b) Utilize Capabilities and Resources Efficiently.

4. Promote open sharing of national research and test facilities and equipment. Improve policies for the graded and categorized (分级分类) open sharing and use of major research and test facilities and equipment; properly coordinate the relationship between efficient markets and assertive government; rely on the power of industrial advantages (行业优势力量) to build information service platforms; make good use of government fiscal incentive funds for open sharing; stimulate the enthusiasm and initiative of relevant work units (单位) to open up and share facilities and equipment; and, under the premise of ensuring safe use, expand the open sharing of large-scale test facilities and equipment—such as national civilian measurement and control stations, receiving stations, calibration sites, validation sites, rocket engine test facilities, and space environment test equipment—with commercial spaceflight entities.

5. Promote coordinated construction and integrated use of ground infrastructure. Strengthen overall planning, optimize layout structures, and promote integration and fusion. Strengthen overall planning for civilian and commercial needs in ground infrastructure construction; promote the validation and construction of public service-oriented (公共性服务) support and test facilities; encourage and support commercial spaceflight enterprises to accelerate the construction of a number of major pilot-scale platforms with strong industry-driving effects; regulate and guide the construction of infrastructure such as commercial space launch tests; collaboratively promote the construction of commercial space launch sites; and promote the integrated development of state infrastructure and commercial infrastructure. Establish equal and reasonable sharing and joint use cooperation mechanisms; support state-owned enterprises (SOEs), higher education institutions, and research institutes in providing market-oriented pilot-scale services; encourage commercial spaceflight facilities to participate in support and assurance tasks for state space projects; and improve the utilization efficiency of ground infrastructure.

6. Promote integrated development of civilian and commercial space standards systems. Establish an authoritative, unified, open, and shared space standards system. Focusing on key links such as commercial satellite and rocket development, launch services, telemetry, tracking, and command (TT&C) operations, in-orbit collision avoidance, satellite data applications, and safety and security supervision, research and formulate relevant technical standards and specifications; clarify which are mandatory standards and which are guidance standards (指导性标准); and enhance the systematic nature and practicality of standards in the commercial spaceflight field. Promote the

unification of civilian and commercial space standards, achieving a highly compatible system architecture, flexible openness, heterogeneous reconfiguration capability, and system interconnection, interoperability, and interoperation between civilian and commercial space systems.

7. Improve support mechanisms for commercial satellite construction and operation. Research and formulate policy systems for commercial satellite launch, TT&C, in-orbit operation management, transfer, deorbiting, and recovery; establish relevant mechanisms and procedures; and promote efficient construction and utilization of satellite resources. Make full use of state-owned and commercial monitoring facilities and space-based control systems to build and maintain a dynamic database for independent cataloging of space debris; carry out the sharing and application of space debris data and information, space debris tracking and monitoring, and risk assessment; and support collision early warning and handling for commercial spacecraft in orbit, as well as emergency response to sudden incidents. Explore the use of mechanisms such as deposits and letters of guarantee to make coordinated arrangements for commercial satellite deorbiting and safe reentry.

8. Promote the secure and efficient utilization of satellite data. Promote the issuance of detailed implementation rules supporting the commercial development and utilization of data created through government funding; encourage local governments to guide commercial spaceflight entities to focus on the application end and develop typical demonstration application scenarios. Promote the issuance of satellite data transmission security standards; regulate data acquisition and use; establish a quality certification and compliance review system for commercial satellite data; and enhance security protection capabilities of satellite systems and ground networks. Research categorized and graded (分类分级) security standards for commercial satellite data and corresponding safety supervision mechanisms; and promote the implementation of satellite data applications. Build trusted platforms for the shared use of commercial satellite data; promote the establishment of mechanisms for space big data sharing and trading, as well as space-based comprehensive data and information service systems.

(c) Promote Industrial Growth and Expansion.

9. Advance optimization of industrial structure. Encourage commercial spaceflight to deploy across appropriate segments of the space production chain; strengthen satellite and rocket manufacturing; expand application services; extend TT&C and operation capabilities; and promote high-quality development of the commercial spaceflight industry. Focus on supporting commercial spaceflight entities in developing new technologies and new products, and in tapping into new application scenarios. For

space transportation systems, focus support on the development of low-cost, high-reliability, fast-response, reusable commercial launch vehicles; for spacecraft systems, focus support on the development of satellite constellation systems such as low-Earth-orbit (LEO) communications, navigation enhancement, and high-resolution remote sensing; for launch and recovery systems, do overall planning of commercial launch sites and supporting facilities, sea-based launch, and recovery sites, and other new types of commercial launch systems; for TT&C systems, focus support on building integrated commercial TT&C layouts and the integrated utilization of resources; for application systems, focus support on the development of application scenarios and product services oriented toward mass consumer services and international markets.

10. Guide local governments in advancing the development of the commercial spaceflight industry. Enhance regional development coordination and promote interregional development linkages. Guide local governments to leverage their distinctive advantages in local resources, S&T, talent, and industrial support; give play to the agglomeration effects of industrial parks; and develop the commercial spaceflight industry in accordance with local conditions.

11. Support the expansion of new business formats (新业态). Support commercial spaceflight entities focusing on new fields such as space resource development and utilization, space manufacturing, on-orbit maintenance and services, space environment monitoring and exploration, space debris monitoring, early warning, mitigation, and removal, space tourism, and space biopharmaceuticals; strengthen original innovation and breakthroughs in key and core technologies (关键核心技术), system development, and application services; innovate business models; and develop emerging business formats (新兴业态).

12. Guide and cultivate patient capital. Improve investment and financing systems and mechanisms for commercial spaceflight development; establish a National Commercial Spaceflight Development Fund (国家商业航天发展基金); encourage local governments, financial institutions, and social capital³ to jointly establish investment platforms; and guide capital to persist in long-term investment, strategic investment, and value investment. Establish a project recommendation mechanism: Select a certain number of commercial spaceflight projects that align with space development planning and investment policy directions and that feature strong innovation, good demonstration effects, and commercialization potential, and recommend them to the fund. The fund

³ Translator's note: The Chinese term 社会资本, translated literally as "social capital," refers to any source of funding outside of government budget outlays. This term encompasses investment by private individuals and private institutions. However, investment from state-funded entities such as state-owned enterprises (SOEs), including state-run banks, also falls under the umbrella of "social capital."

will make independent decisions in a market-oriented manner.

13. Expand government procurement. Increase efforts to do overall planning for the public-interest requirements of government departments; improve government procurement service mechanisms; promote the participation of commercial launch vehicles, commercial satellites, commercial launch sites, and commercial TT&C facilities in state space missions; and encourage government departments at all levels to expand procurement of commercial spaceflight services.

14. Support internationalized development. Encourage commercial spaceflight entities to actively participate in the formulation of relevant international rules in the outer space field; through bilateral and multilateral intergovernmental cooperation channels, promote the orderly expansion of [Chinese] commercial spaceflight enterprises into overseas markets; promote China's commercial spaceflight projects and capabilities; encourage commercial spaceflight entities to participate in international cooperation and exchanges; and support developing countries in developing satellite application industries and related sectors. Select outstanding commercial spaceflight projects for inclusion in relevant channels of international space cooperation, and provide support.

(d) Improve Industry Management and Services.

15. Improve the regulatory and policy system for commercial spaceflight. Accelerate the legislative process for a national Space Law (航天法); clarify the status and role of commercial spaceflight in national space development; and safeguard the healthy and sustainable development of commercial spaceflight. For key areas such as mitigation of space debris and protection from it, approval of exports of specific space products and technologies, international space cooperation, launch licensing management, space object registration management, open sharing of space science data, protection of the Moon and other celestial bodies, space traffic management, and space launch site management, accelerate the issuance of relevant laws, regulations, and policy documents. Promote the confirmation of property rights for assets such as launch vehicles, spacecraft, satellite data, and test equipment and facilities, and protect the rights and interests of commercial spaceflight entities. Improve market access mechanisms for commercial spaceflight, establish a negative checklist for market access (市场准入负面清单), and reasonably adjust relevant practitioner qualification requirements. Enterprises engaged in the development of commercial satellites will not be required to obtain a Weapons and Equipment Research and Production License (武器装备科研生产许可证). Strengthen the publicization of laws, regulations, and policies, and improve government service efficiency.

16. Strengthen overall planning for commercial spaceflight development. Improve communication and coordination mechanisms among main oversight departments (主

管部门); continuously optimize relevant access and licensing approval processes to meet the needs of commercial spaceflight entities for flexible market response. Do overall planning for commercial spaceflight development needs; encourage enterprises to carry out collaborative innovation with research institutes and universities; and strengthen guidance for tackling key technologies in commercial spaceflight launch vehicles, satellites, and related areas. Optimize the spatial layout of commercial spaceflight development; guide local governments and commercial spaceflight entities to emphasize differentiated development and avoid low-level repetitive construction.

17. Promote open and coordinated development of the production chain and supply chain. Continue to organize assessments of safety, security, and industry compliance across the space production chain and supply chain; promote the construction of information management service systems for commercial spaceflight entities; comprehensively and accurately grasp development dynamics and progress; establish scientific industry statistical measures; and promote the construction of foundational databases for the space production chain and supply chain, providing support for scientific management and efficient services. Further promote the openness and integration of the space production chain and supply chain; encourage mutual entry of competitive supporting products from SOEs and private enterprises (民营企业) into each other's supply chain systems.

18. Implement liability for damages from commercial spaceflight activities. Establish an interdepartmental regulatory and service mechanism for compensation for damages caused by commercial spaceflight; supervise and guide the assessment and compensation for personal injury and property damage caused by launch vehicles and spacecraft during stages such as R&D, testing, launch, in-orbit operation, and reentry. Establish a mandatory insurance system for commercial spaceflight activities; through third-party liability insurance and other commercial insurance, implement the compensation responsibilities of space object owners, launch service providers, operators, and other parties.

19. Guide commercial spaceflight entities in complying with international outer space rules. Strengthen the publicization of international outer space rules; guide commercial spaceflight entities to comply with space traffic management rules and ensure that commercial spaceflight activities are lawful and compliant; with a focus on stages such as rocket passivation and satellite deorbiting, proactively take effective measures to ensure compliance with international outer space rules and domestic management policies, and promote the sustainable development of space activities.

(e) Strengthen Full-Chain Safety and Security Supervision.

20. Strengthen the organization and management of safety and security supervision.

Further consolidate the safety and security supervision responsibilities of the central government, local governments, and enterprises, as well as enterprises' primary responsibility for safety and security; promote the establishment of a commercial spaceflight safety and security supervision mechanism; and gradually build a foundational commercial spaceflight safety and security supervision system with clear responsibilities, a well-defined division of labor, effective measures, and long-term usefulness. Formulate and issue urgently needed safety and security supervision measures in areas such as testing, launch, market access, and data application; gradually establish a standardized and orderly policy and regulatory system; and foster an industrial ecosystem and development environment that staunchly defends the safety and security bottom line while remaining full of innovative vitality.

21. Strengthen full-life cycle safety and security inspections of products. Establish a safety and security inspection system covering the entire process and all elements of product R&D, testing, final assembly, testing, launch, in-orbit operation, deorbiting, and data application. Industrial main oversight departments, in coordination with relevant departments with supervision and inspection responsibilities, shall conduct strict inspections at key stages such as product phase transitions (产品转阶段), rolling off the assembly line, testing, launch, and data application, focusing on product quality and reliability, security, fire safety, special equipment safety, hazardous materials safety, hazardous operations safety, road transportation safety, landing site (航落区) safety, and space safety. For key systems or products involving major safety or security risks, conduct security re-verification and evaluation; strictly rectify hidden dangers; and, in cases of safety or security incidents or serious consequences, pursue accountability rigorously.

22. Enhance safety and security supervision capabilities. Establish certification systems and strengthen the development of professional capacities for safety and security review, certification, consulting, and training services. Strengthen research and reserves of safety and security supervision technologies, study safety and security supervision and inspection methods for reusable launch vehicles, recoverable satellites, and commercial crewed spacecraft. Gradually establish a quantitative technical system for safety and security risk identification, analysis, and evaluation, as well as decision-making mechanisms based on quantitative risk indicators. Study and establish a commercial spaceflight safety and security supervision service platform to realize informatization of enterprise information registration, dynamic risk monitoring of key equipment and facilities and major hazard sources, reporting of information on important activities, and real-time evaluation of safety and security risks, thereby enhancing the effectiveness and efficiency of safety and security supervision.