Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone

(Adopted at the 11th session of the Standing Committee of the Seventh People's Congress of Shenzhen Municipality on August 30, 2022)

Contents

Chapter 1   General Provisions

Article 1   These Regulations were formulated in accordance with relevant laws and administrative regulations and based on the actual situation of the Shenzhen Special Economic Zone in order to promote the high-quality development of the artificial intelligence (AI) industry in the Shenzhen Special Economic Zone, promote the in-depth integration and application of AI in economic and social fields, regulate the orderly development of the AI industry.

Article 2   The term Artificial Intelligence (AI) as used in these Regulations refers to the simulation, extension, or expansion of human intelligence by using computers or equipment controlled by them to sense the environment, acquire knowledge, perform deduction, and carry out other operations.

Article 3   The term AI Industry as used in these Regulations refers to core industries such as software and hardware product research, development, and production, system applications, and integration services related to AI as well as related industries driven by the integration and application of AI in the fields such as people's livelihood services, social governance, and economic development.

Article 4   The development of the municipality's AI industry follows the principles of being technology-led, application-driven, people-centered (以人为本), and secure and controllable (安全可控).

Article 5   The Municipal People's Government shall establish a coordination mechanism for the development of the AI industry in the municipality, coordinate AI development and security work, promote the healthy and orderly development of the AI industry, give full play to the role of AI in promoting the sustainable development of the economy, society, ecology, and other areas.

Article 6   The Municipal Bureau of Industry and Information Technology is the main oversight department (主管部门) for the AI industry (hereinafter referred to as the municipal main oversight department for the industry). It is responsible for implementing, coordinating, and supervising the development of the AI industry within its administrative jurisdiction.

The municipal departments for development and reform, education, science and technology (S&T) innovation, public security, finance, human resources and social security, planning and natural resources, ecological environment, housing and

construction, transportation, commerce, health, state-owned assets, market supervision, statistics, urban management and comprehensive law enforcement, government service data management, and small- and medium-size enterprise services, along with the municipal cyberspace administration (网信) departments, are responsible for the work related to the development of the AI industry within the scope of their respective responsibilities.

Article 7　The development of the AI industry shall be included in the municipality's national economic and social development plans, and the overall thinking, development goals, main tasks, and policy measures for the development of the AI industry shall be clarified.

The municipal main oversight department for the industry shall compile the municipality's AI industry development plan and submit it to the Municipal People's Government for approval before promulgation and implementation.

Article 8　The municipal market supervision departments shall, in conjunction with the municipal main oversight department for the industry and other relevant departments, establish and improve the local AI standards system.

They shall encourage institutions of higher learning, scientific research institutions, enterprises, and other organizations to participate in the formulation of international standards, national standards, industry standards, local standards, and group standards in the AI field.

Article 9　The Municipal Statistics Department and the municipal main oversight department for the industry shall, in conjunction with other relevant departments, establish and improve statistical classification standards for the AI industry, formulate and improve the statistical classification catalog for the AI industry, and carry out statistical investigation, monitoring, and analysis of the AI industry in an orderly manner.

Article 10　Relevant departments of the Municipal People's Government shall conduct inclusive and prudent supervision of the AI industry in accordance with the principle of encouraging innovation. They shall formulate corresponding regulatory rules and standards adapted to the new technologies, new industries, new business formats (新业态), and new models of AI and implement categorized and graded supervision and management (分类分级监管).

Article 11　We shall encourage and support institutions of higher learning, scientific research institutions, enterprises, and other organizations to carry out international exchanges and cooperation in basic research, basic platforms, technology development, talent cultivation, and other areas and promote technological innovation and development.

Article 12 Under the premise of abiding by relevant laws and regulations and ethical safety norms, we shall promote the popularization and application of AI products and services, improve the awareness and capabilities of the whole society as regards AI applications, and promote the development of economic and social intelligentization (智能化).

Chapter 2   Basic Research and Technology Development

Article 13 We shall encourage institutions of higher learning, scientific research institutions, enterprises, and other organizations to carry out long-term, interdisciplinary basic research on AI and undertake and participate in major national, provincial, and municipal S&T projects. The Municipal People's Government and its relevant departments shall provide support.

The municipal S&T innovation departments shall improve the formation mechanisms for major basic research tasks, strengthen the systematic deployment of goal-oriented basic research, and promote the integrated allocation of key projects, bases, talents, and funds in the AI field.

Article 14 Municipal S&T innovation departments shall focus on the key and core areas of AI, establish key and core technology (关键核心技术) research mechanisms that are led by market demand and deeply integrate the government, industry, academia, and research, and build a supporting policy system that covers the entire research cycle for key and core AI technologies.

Article 15 We shall accelerate the construction of national, provincial, and municipal research platforms, carry out strategic, forward-looking, and systematic basic research on AI and key and core technology research, promote breakthroughs and innovations in academic discipline theories and cutting-edge technologies, and give full play to the leading and supporting role of innovation.

Article 16 We shall support the construction of key laboratories, characteristic experimental bases (特色实验基地), engineering research centers, industrial innovation centers, technology innovation centers, enterprise technology centers, manufacturing innovation centers, and other innovation vehicles.

Article 17 We shall cultivate and build new types of R&D institutions with diversified investment entities, modernized management systems, market-oriented operating mechanisms, and flexible employment methods and support them as they integrate AI scientific research, technological innovation, and R&D services.

Article 18 We shall support institutions of higher learning, scientific research institutions, enterprises, and other organizations as they strengthen

industry-academia-research institute (产学研) cooperation, create innovative organizational models through the establishment of innovation consortia and other methods, and carry out AI basic research and technology development.

Article 19 Municipal financial departments shall increase financial investment in S&T innovation, establish a sound and stable investment mechanism featuring competition-based coordination, and strengthen support for AI basic research and technology development.

They shall encourage enterprises and social forces to participate in basic research and technology development through multiple channels such as the establishment of funds, joint funding, and charitable donations.

Article 20 We shall encourage institutions of higher learning, scientific research institutions, enterprises, and other organizations to open up major scientific research infrastructure and large scientific research instruments to society.

We shall give full play to the role of international S&T information centers, international innovation industry information service platforms, and large-scale scientific instrument sharing platforms and improve the evaluation and incentive mechanisms for openness and sharing.

Article 21 The municipal S&T innovation departments shall create innovative management methods for AI projects, publicly solicit S&T innovation projects and achievements, and provide support through non-cyclical (非周期性) project funding and other methods.

They shall explore and implement the project manager or managing institution management model, entrust third-party professional institutions or dedicated personnel with project management, and optimize process management, project supervision, and performance evaluation.

They shall allow multiple leading units (牵头单位) with significantly different technical routes to simultaneously obtain preliminary project approval, carry out regular assessments within the project cycle time, grant funding according to the results of dynamic competition, and can provide additional support to projects with good implementation results and great development potential.

Article 22 We shall establish a project evaluation system oriented to quality, performance, and contribution in order to accurately reflect the innovation level, the conversion and application performance, and the actual contribution to economic and social development of AI S&T achievements.

We shall improve categorization and evaluation systems for free exploration and task-oriented S&T projects and establish evaluation mechanisms for non-consensus (非共识) S&T projects.

Article 23 The municipal S&T innovation departments shall establish incentive mechanisms conducive to promoting the conversion of S&T achievements into practical applications (科技成果转化) and promote the conversion of S&T achievements by various innovation entities into practical applications.

They shall encourage and support the research results of major national S&T projects and key R&D projects in the AI field as they carry out industrial application research in Shenzhen and promote the capitalization of intellectual property rights. They shall encourage the conversion of AI enterprises' offshore innovation achievements into practical applications in the municipality and view this as equivalent to the support of domestic innovation achievements in relevant areas.

They shall support professional and technical personnel from institutions of higher learning and scientific research institutions in accordance with relevant regulations to engage in the conversion of S&T achievements in the AI field into practical applications by starting businesses after leaving their current positions, while staying on at their current positions, or by working part-time in enterprises.

Article 24 We shall support and encourage social capital[1] to set up professional service agencies for the conversion of AI S&T achievements into practical applications and provide comprehensive services for the conversion of S&T achievements such as transaction brokering (交易代理), value assessment, talent training, and startup incubation into practical applications.

The Municipal People's Government and its relevant departments shall follow the principle of combining market orientation and government guidance and strengthen support for professional service institutions for the conversion of AI S&T achievements into practical applications in terms of platform construction, purchasing services, and talent training.

Article 25 We shall empower AI innovation teams and leading talents with the authority to make decisions about technical routes and the authority to use funds. We

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[1] Translator's note: The Chinese term 社会资本, translated literally as "social capital," and its synonyms "social funding" (社会资金), "social investment" (社会投资), and "social financing" (社会融资), refer to any source of funding outside of government budget outlays. These terms encompass 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."

shall adopt a flexible compensation system and incentive measures for scientific researchers who undertake major S&T research tasks.

Chapter 3   Industrial Infrastructure Construction

Article 26 The Municipal People's Government shall make overall plans for the construction of industrial infrastructure centered on communication networks, data centers, computing systems, and one-stop development platforms, improve the construction and operation mechanisms taking the market as the main actor, and provide public services for the development of the AI industry.

Article 27 The Municipal People's Government shall optimize the coordination mechanisms for network infrastructure construction and solve problems such as electricity consumption, land use, approval, and access.

Article 28 The municipal main oversight department for the industry shall improve the data center operation evaluation system, explore and improve the energy efficiency standards for data centers, and build green data centers that support the development of AI.

Article 29 Municipal government service data management departments shall build a public data resource system for the AI industry in accordance with the overall planning of the public data resource system and relevant institutional norms and requirements.

Article 30 The municipal market supervision departments shall, in conjunction with other relevant departments, establish a public data and industry data standard system in the field of AI applications and achieve data interoperability.

Article 31 The Municipal People's Government shall build a public data open platform, establish a public data sharing directory and sharing rules in the field of AI applications, and promote the categorized, graded, and orderly (分类分级有序) opening up (开放) of public data.

Article 32 We shall encourage organizations and individuals engaged in AI research and applications to rely on public data open platforms, develop AI products and services, and promote innovative applications of public data in AI scenarios.

Article 33 We shall promote the circulation and utilization of data in the AI field and promote the transformation of data factors of production (数据要素) into resources, assets, and capital.

Organizations and individuals engaged in AI research and applications that provide legally obtained personal data to external parties shall anonymize (去标志化) this data unless otherwise stipulated by laws and regulations.

Article 34   We shall encourage and support institutions of higher learning, scientific research institutions, enterprises, and other organizations to build AI computing power ("compute") infrastructure, open-source development platforms, and open-source communities, make use of computing platforms such as the National Supercomputing Center in Shenzhen and Peng Cheng Cloud Brain (鹏城云脑), open up compute resources, reduce enterprise development costs, shorten development cycles, and cultivate an open source governance ecosystem featuring sharing and collaboration.

Article 35   We shall encourage and support enterprises as they face scenarios in industry subsectors, build an open innovation platform for AI, and open up key general purpose AI technologies to upstream and downstream enterprises in the industry.

Article 36   The Municipal People's Government shall promote the construction of AI testing, inspection, and certification platforms and provide services such as functional testing, security testing, reliability assessment, and ethical and security risk assessment.

It shall support the establishment of basic electronic component testing and certification and experimental platforms, focus on key markets such as smart terminals, 5G, smart vehicles, and high-end equipment, accelerate the improvement of relevant standard systems, and reduce the cost of testing and certification.

Chapter 4   Application Scenario Expansion

Article 37   The Municipal People's Government shall promote the integrated application of AI in the fields of people's livelihood services, social governance, and economic development and support the application and popularization of the new technologies, new products, and new models of AI.

It shall explore the establishment of a world-class advanced technology application and promotion platform and accelerate the gathering of cutting-edge technological innovation achievements and high-end innovation factors of production (创新要素) from China and abroad.

Article 38   Municipal state institutions, organizations authorized by laws and regulations to manage public affairs, enterprises, and public institutions[2] shall take the

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[2] Translator's note: "Public institutions" (事业单位) are organizations created and led by PRC government departments that provide social services. Unlike state-owned enterprises (SOEs), public institutions do

lead in using AI products and services to promote digitalized and intelligentized social management.

They shall promote the application of AI technology in the administrative and judicial fields and improve the standardization, convenience, and informatization (信息化) levels of government services and judicial services.

Article 39 We shall promote the application of AI technology in the fields of people's livelihood services such as healthcare, education, employment, elder care, culture, transportation, and housing assurance, promote the extension of public resources to the grassroots level, and build a high-quality, balanced, and intelligent people's livelihood service system.

Article 40 We shall promote the application of AI technology in social governance, legal services, social order and security [incident] prevention and control, emergency rescue, and other fields and improve the government's governance capacity and governance level.

We shall promote the application of AI technology in fields such as financial risk, state-owned assets, planning and investment, finance, taxation, auditing, and statistics and provide a basis for the municipality to formulate economic policies and monitor the state of economic operations.

We shall promote the application of AI technology in fields such as natural resources, ecological environment, water conservancy, and energy conservation and emissions reduction and improve the ability to prevent and handle ecological risks.

Article 41 We shall promote the large-scale application of AI technology in fields such as S&T innovation, industrial development, manufacturing, commercial circulation (经贸流通), and financial services and support enterprises as they apply AI to improve the intelligentization level of R&D, production, and services.

We shall encourage enterprises to use AI technology to carry out technological transformations. The municipal main oversight department for the industry shall provide financial support for enterprises to carry out intelligentization transformations and upgrades and transformations of technical equipment.

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not create material products and are non-profit. Public institutions are not considered government agencies, and their employees are not civil servants. Most public institutions are fully or partially government-funded, but some fully privately funded (but still government-led) public institutions exist. Public institutions typically provide services in areas such as education, science and technology, culture, health, and sanitation.

Article 42 We shall support AI products and services that protect the rights and interests of children, the elderly, the disabled, and other special groups and ensure and improve their basic service needs and service experience.

Article 43 The municipal main oversight department for the industry shall establish an open system for AI application scenarios, regularly formulate and release a list of AI scenario requirements, publicly solicit application scenario solutions, and attract high-level AI product and service suppliers from China and abroad.

We shall explore the establishment of a marketized supply and demand operation mechanism for AI application scenarios.

Article 44 Except for areas involving national security, the public interest, and the personal safety of citizens, low-risk AI products and services that have not yet formulated national or local standards but meet international advanced product standards or specifications shall be allowed to conduct pilot trials through tests, experiments, pilot projects, and other methods.

Article 45 We shall establish a trading platform for electronic components and integrated circuits, establish experimental standards and evaluation procedures for access to relevant markets, lower the barriers to entry for new-generation information technologies and new infrastructure such as 5G and the Internet of Things in related fields, and promote relevant integrated application demonstrations.

Article 46 We shall encourage medical institutions to establish a mutual recognition mechanism for ethical reviews of clinical trials for registered medical devices and improve the efficiency of clinical trials for AI medical devices. We shall allow the acceptance of medical device registration inspection reports issued by third-party inspection agencies recognized by the National Certification and Accreditation Administration of the PRC in conjunction with the National Medical Products Administration.

Encourage medical institutions in the municipality to use AI products and services such as auxiliary decision-making (辅助决策), image or data processing, medical data analysis and mining, and medical assistance.

Chapter 5   Promotion and Assurance

Article 47 Based on the actual development of the AI industry, the Municipal People's Government and its relevant departments shall make overall plans for the layout of the AI industry and support the AI industry through funds, industrial land use, and talent.

Article 48 In accordance with the AI industry development plan, the Municipal People's Government shall establish industrial policies that comply with international trade norms, maintain fair competition in the market, and provide a favorable policy environment for the international development of the AI industry.

Article 49 We shall promote the construction of AI industrial parks and guide AI industry clustering and development. When the municipal planning and natural resources departments prepare supply plans for construction land use, they shall reasonably guarantee that the needs for construction land of the AI parks are met. We shall explore the establishment of loose and flexible industrial space management mechanisms and reasonably determine the development intensity and supporting functions for qualified enterprises.

Article 50 We shall support Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone, Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone, Guangming Science City, and other areas as they independently carry out AI basic research and applied basic research, establish a scientific research management system aligned with international conditions, explore and implement a more open and convenient registration system for international organizations, and attract high-end AI innovation elements from Hong Kong, Macau, Taiwan, and foreign countries.

Article 51 We shall support local institutions of higher learning in establishing AI-related curricula and interdisciplinary areas of study, encourage enterprises to set up research institutions and jointly build laboratories with schools, and establish an industry-academia-research institute cooperation model for hybrid talent (复合型人才) training. We shall promote the development of AI basic education and applied vocational skills education.

Article 52 The municipal talent work departments shall formulate and implement talent policies aligned with international conditions, attract international high-end talents, and establish overseas talent reserves. We shall bring together elite AI talents and high-level teams from China and abroad through major projects.

Article 53 We shall establish an S&T talent evaluation system oriented towards innovation value, capabilities, and contributions and use the economic and social benefits generated by the conversion of S&T achievements into practical applications as an important factor in the evaluation of the professional titles of AI talents.

We shall establish and improve evaluation mechanisms for AI innovation talents with employer talent evaluations playing the leading role.

We shall encourage enterprises to improve AI talent assessment tools and mechanisms through competitions, practical training, and other methods.

Article 54   Talents attracted by AI enterprises shall enjoy the talent policy benefits of the municipality in accordance with relevant regulations in terms of enterprise establishment, project declaration and entry and exit, housing, foreign exchange management, medical assurance, and schooling for children.

Article 55   We shall give full play to the supporting role of the Municipal People's Government's investment guidance funds and focus on AI core areas and key links when providing special project support in accordance with the municipality's industrial cluster development plan.

We shall encourage social capital to participate in the development of the AI industry. We shall give full play to the role of financing guarantee funds for micro-, small, and medium-size enterprises and increase credit guarantees for AI startups.

Article 56   We shall explore and improve a specialized insurance compensation system adapted to AI products and services and provide full-chain insurance guarantees for AI products and services.

Article 57   We shall support social forces as they carry out AI award activities and reward individuals and organizations that have achieved results or made contributions in AI basic research, key and core technology breakthroughs, and the popularization and application of S&T achievements.

Article 58   We shall strengthen intellectual property protection for new technologies, new business formats, and new models and promote the establishment of an intellectual property protection system in the AI industry field and its key technical links.

Article 59   We shall cultivate the AI standard organizations and industry organizations in the municipality that conform to international development trends and possess market competitiveness.

We shall encourage industry organizations to provide services such as entrepreneurship training and guidance, intellectual property protection, investment and financing, trustworthy technology R&D, risk analysis and control, and technical support.

Article 60   We shall support and encourage the holding of high-level academic exchanges and industrial cooperation activities on AI in China and abroad. We shall establish standard exchange and cooperation mechanisms with the International Organization for Standardization (ISO) and influential international academic and industrial organizations.

We shall encourage institutions of higher learning and scientific research institutions to participate in and lead international scientific programs and scientific

projects. We shall encourage enterprises to participate in influential international organizations and carry out relevant activities. We shall promote the demonstration and application of AI products and services in China and abroad.

Article 61   We shall strengthen the guidance of AI ethics and security norms and social values and carry out AI knowledge propaganda, education, training, and science popularization.

The municipal main oversight department for the industry and other departments shall use media such as radio, television, newspapers, and the Internet to promptly publicize the development status and achievements of the AI industry, do a good job in guiding public opinion, and help the public cope with changes in their lifestyles, forms of employment, and ethics and morality brought about by the development of AI.

Article 62   The municipal main oversight department for the industry shall release to the public a report on the implementation of the municipality's annual AI industry development plan from the previous year in the first half of each year.

Chapter 6   Governance Principles and Measures

Article 63   The municipality's AI industry governance shall follow the principles of harmony and friendliness, fairness and justice, inclusiveness and sharing, respect for privacy, security and controllability, shared responsibility, open collaboration, and agile governance and promote sustainable economic, social, and ecological development.

Article 64   We shall establish and improve the AI governance mechanisms of government regulations, industry self-regulation, enterprise self-governance, and supervision by society (社会监督), promote the formation of an AI governance framework and standards that enjoy a broad consensus, and promote coordination and co-governance by a wide range of industrial entities.

Article 65   In accordance with the relevant national regulations on AI governance, the Municipal People's Government shall establish a municipal AI ethics committee to perform the following duties:

(1) Research the formulation of ethical and security norms for the AI field;

(2) Establish and improve a management system for AI ethical and safety norms and guide and standardize the formulation and implementation of AI ethical and safety norms;

(3) Analyze and judge the impact of data and algorithms on the protection of information rights and interests, social ethics, labor and employment, and other areas;

(4) Publish guidelines for AI ethical and security practices, white papers on AI ethics and security, collections of excellent cases of enterprise AI ethical and security governance, and other materials to guide different types of AI enterprises to establish and improve their ethical and security governance systems;

(5) Assess and supervise the implementation of ethical and security norms by AI enterprises in the municipality;

(6) Carry out other proper activities.

The daily work of the municipal AI ethics committee shall be undertaken by the municipal main oversight department for the industry.

Article 66 Based on specific AI application conditions such as risk levels, application scenarios, and scope of influence, the Municipal People's Government and its relevant departments shall implement graded, categorized, and differentiated supervision and improve supervision mechanisms in the AI field.

High-risk AI applications shall adopt a regulatory model of ex-ante assessment and risk warning. Low and moderate-risk AI applications shall adopt a regulatory model of ex-ante disclosure and post-facto tracking.

Measures for the graded and categorized supervision of AI applications shall be formulated separately by the Municipal People's Government.

Article 67 The municipal S&T innovation departments shall organize and carry out AI social experiments, research the behavior, income changes, and social psychology of individuals and organizations as well as the comprehensive impact on the employment structure, social equity, and other aspects, and continue to accumulate data and practical experience.

The municipal main oversight department for the industry and other departments shall monitor and assess the development of AI, accurately grasp technological and industrial development trends, carry out research on the comprehensive impact of AI on the economy and society and countermeasures, and promptly adjust industrial development policies.

Article 68 In accordance with the provisions of laws, regulations, and articles of association, industry organizations shall carry out industry self-regulation management, guide and urge industry operators to compete in accordance with the law, and maintain the orderly nature of market competition.

We shall encourage industry organizations to participate in the formulation of industry standards, technical guidelines, design guidelines, and other industry system

specifications related to AI, provide information, technology, training, and other services, and carry out activities such as policy propaganda and standards promotion.

Article 69 AI enterprises shall incorporate compliance with ethical and security norms into the professional code requirements of their units and incorporate ethical and security risk education and law and regulation education into the training content for their unit's AI practitioners.

We shall encourage AI enterprises to use technological innovation, technological confrontation, and other methods to prevent ethical security risks and compliance risks that may arise from AI products and services.

Article 70 We shall encourage and support units and individuals in carrying out AI research and application supervision activities and reporting violations of laws, regulations, and AI ethical and security norms to the municipal main oversight department for the industry and industry organizations.

Article 71 For algorithms in the field of public decision-making and commercial fields involving the public interest, organizations or individuals that provide AI products and services shall explain their algorithms in a way that is easy for the public to understand.

Article 72 Organizations and individuals engaged in AI research and application shall abide by AI ethical and security norms and carry out relevant activities within a reasonable scope. Relevant organizations or individuals shall review ethical and security norms and conduct risk assessments on the possible adverse effects of AI products and services on national interests, public security, commercial order, and personal rights and interests.

When carrying out AI research and application activities, they shall not engage in the following behaviors:

(1) Providing products and services that endanger national security or public interests;

(2) Violating personal privacy or violating personal information rights and interests;

(3) Providing products and services that endanger physical and mental health;

(4) Discriminating against users on the basis of race, gender, nationality, ethnicity, or religious beliefs;

(5) Using algorithm technology to carry out price discrimination, consumption fraud, or other behaviors that infringe upon the rights and interests of consumers based on users' habits, preferences, and payment capabilities;

(6) Using deep synthesis technology to engage in prohibited behaviors;

(7) Engaging in other behaviors that violate relevant laws and regulations or ethical and security norms.

Those who violate the provisions in the preceding paragraph shall be punished or held accountable in accordance with the *Civil Code of the People's Republic of China* and relevant laws and regulations on national security, personal information protection, and consumer rights protection.

Chapter 7   Supplementary Provisions

Article 73 These regulations shall come into force on November 1, 2022.

Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone

Interpretation

On August 30, 2022, the 11th session of the Standing Committee of the Seventh People's Congress of Shenzhen Municipality adopted the *Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone* (hereinafter the *Regulations*), which shall come into force on November 1, 2022. The *Regulations* fully implement the spirit of General Secretary Xi Jinping's important instructions on the development of AI as well as the country's strategic deployments for the development of new generation AI. They persist in the principle of promotion to push forward high-quality industrial development; persist in market orientation to create a good industrial environment; persist in a bottom-line mindset to standardize the orderly development of the industry; and persist in being grounded in the actual situation to give full play to Shenzhen's industrial characteristics. In terms of content, they focus on reflecting "comprehensive promotion and reasonable and necessary regulation." Focusing on the core purpose of "promoting the high-quality development of the AI industry," they are problem-oriented, seeking out the difficulties and pain points in the development of the AI industry in our municipality and promoting and standardizing the development of the industry through institutional design.

I. Necessity of Legislation

The formulation of the *Regulations* is a practical requirement in order to take the lead in implementing national strategic deployments and demonstrate the country's legislative exploration experience in emerging fields. General Secretary Xi Jinping has repeatedly given important instructions on the development of AI,

emphasizing that we must take a problem-oriented approach, comprehensively enhance our AI technology innovation capabilities, accelerate the establishment of new generation AI key general purpose technology systems, and promote the in-depth integration of the Internet, big data, and AI with the real economy. In October 2020, the General Office of the Central Committee of the Chinese Communist Party (CCP) and the General Office of the State Council issued the *Implementation Plan for the Comprehensive Reform of the Pilot Demonstration Zone for Building Socialism with Chinese Characteristics in Shenzhen (2020-2025)* (hereinafter the *Comprehensive Reform Implementation Plan*), which requires Shenzhen to take the lead in exploring emerging fields such as AI, self-driving vehicles, big data, biotechnology and pharmaceuticals, medicine and health, and information services. In order to implement the decision-making deployments of the Party Central Committee and the State Council on the development of new generation AI and implement the relevant requirements of the *Comprehensive Reform Implementation Plan*, it is necessary to use special economic zone legislation to conduct pilot trials in the AI field, do a good job in system design for the integrated development of AI and the real economy, cultivate a high-quality and efficient industrial development environment and a good industrial ecosystem, and provide legal guarantees for promoting the development of Shenzhen's AI industry.

The formulation of the *Regulations* is an important starting point to seize the strategic opportunity presented by the development of AI and create an international world-class bastion of the AI industry. AI is the core driving force of a new round of industrial transformation and a new engine of economic development. It will give birth to new technologies, new products, new industries, new business formats, and new models. It plays an important promotional role in accelerating the upgrading of traditional industries, reshaping the economic structure, and realizing an overall leap in social productive forces (社会生产力). As a pioneering demonstration zone, Shenzhen has a solid industrial foundation, abundant S&T innovation talents, and a good business environment. Moreover, it has the advantages of a wide range of application scenarios and vigorous innovation and entrepreneurship. This has formed a relatively complete production chain and governance system, and industrial competitiveness and influence continue to increase. We will be the first to enact legislation for the AI industry, focus on the industrial development directions and key tasks of new generation AI technology, fully stimulate innovative vitality, strengthen AI basic research, make breakthroughs in key and core technologies, accelerate the construction of major AI infrastructure, promote the conversion of AI application achievements, build an AI innovation ecosystem, build Shenzhen into the source of Chinese AI technology innovation and the world's leading bastion of the AI industry,

and effectively support the construction of Shenzhen's National New Generation AI Innovation and Development Pilot Zone.

The formulation of the *Regulations* is an important measure to solve the governance problems of the AI industry and regulate the orderly development of the AI industry based on the rule of law. As a strategic information technology expected to lead future changes, AI has achieved rapid development and wide application, but it has also given rise to many new issues and challenges such as security, privacy, and fairness. At present, there is no special AI industry legislation at the national level. Starting in 2015, China promulgated a series of policies, laws, and regulations that aim to strengthen protections for issues such as data sharing, data security, and personal privacy. The *New Generation Artificial Intelligence Development Plan*[3] released in 2017 proposed that it was necessary to formulate laws, regulations, and ethical norms to promote the development of AI. In 2021, the National New Generation Artificial Intelligence Governance Specialist Committee (国家新一代人工智能治理专业委员会) issued the *Ethical Norms for New Generation Artificial Intelligence*, proposing to actively guide responsible AI R&D and application activities and promote the healthy development of AI. Therefore, it is necessary to consider both the gradual formation of global AI governance systems and the actual situation of the special economic zone and use special economic zone legislation to regulate the AI industry in our municipality in an orderly manner, be the first to explore Chinese solutions for AI social governance, create a multi-party collaborative governance model, promote the healthy development of Shenzhen's AI industry, and form a well-regulated and orderly situation conducive to development.

II. Main Elements

The *Regulations* are China's first special legislation for the AI industry. They have seven chapters and 73 articles, including overall principles, basic research and technology development, industrial infrastructure construction, application scenario expansion, promotion and assurance, governance principles and measures, and supplementary provisions. Proceeding from the actual development of Shenzhen's AI industry, exploration and innovation will be carried out focusing on the links of "clarify the scope + address shortcomings + strengthen support + seize applications + development of agglomerations + regulate and govern." Its primary content is as follows:

(i) Clarify the definitions of AI and the AI industry

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[3] Translator's note: For an English translation of the New Generation Artificial Intelligence Development Plan, see:
https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/.

Currently, China has not yet formulated the concepts of AI and the AI industry at the legal level, and the academic community has not yet come to a unified understanding of the definitions of AI and the AI industry. The *Regulations* are based on the *New Generation Artificial Intelligence Development Plan* issued by the State Council. At the same time, they reference the *Practice Guidelines for Cybersecurity Standards – Guidelines on Artificial Intelligence Ethical Security Risk Prevention* compiled and issued by the National Information Security Standardization Technical Committee, the *Guangdong Provincial Implementation Plan for Accelerating the Development of the New Generation Artificial Intelligence Industry*, and other documents. On the basis provided by drawing on a series of relevant research results in China and abroad, the concept of AI is set out from a technical point of view, clarifying that AI is "the simulation, extension, or expansion of human intelligence by using computers or equipment controlled by them to sense the environment, acquire knowledge, perform deduction, and carry out other operations." At the same time, considering that as AI technology continuously develops, the boundaries and scope of the AI industry are also gradually expanding, and in light of the ongoing statistical work of the AI industry in our municipality, the *Regulations* clearly defined the boundaries of the AI industry, including core industries such as software and hardware product research, development, and production, system applications, and integration services related to AI as well as related industries driven by the integration and application of AI in fields such as people's livelihood services, social governance, and economic development in the AI industry category.

(ii) Establish AI statistics and monitoring systems

The establishment of statistical monitoring systems for the AI industry is one of the problems that enterprises and industry organizations generally say that the industry must urgently solve. At present, AI has not been included in the National Economic Industry Classification catalog (国民经济行业分类目录), and there are no unified statistical standards for the AI industry at the national level. The identification standards and statistical standards for the number, output value, and even industrial scale of AI enterprises are also different in different regions. Shenzhen has not introduced corresponding systems, relevant departments also lack a unified and authoritative standard for identifying the basic situation of the industry. This is not conducive to accurately understanding and grasping the basic situation of the AI industry in our municipality. It also affects the precise analysis and judgment of the AI industry. In view of this, on the basis of clarifying the significance of AI and its extensions, the *Regulations* stipulate that we must establish and improve statistical classification standards for the AI industry, formulate and improve the statistical classification catalog for the AI industry, and carry out statistical investigation,

monitoring, and analysis of the AI industry in an orderly manner. By improving the statistical monitoring system, we can accurately grasp the actual situation of the development of the AI industry in our municipality and provide accurate and unified data support and policy support for promoting the development of the AI industry.

(iii) Address the shortcomings of basic research on AI

In order to coordinate and promote solutions to the problem of weak basic research and gradually address the shortcomings in AI basic research, the *Regulations* propose the following: **First**, strive to make breakthroughs in key and core technologies. We shall focus on the key and core areas of AI, propose and establish key and core technology research mechanisms that are led by market demand and deeply integrate government, industry, academia, and research institutes (政产学研), build a supporting policy system that covers the entire research cycle for key and core AI technologies, and strengthen support for AI basic research and technology development. **Second**, strengthen the construction of new research and development institutions. We shall clarify and accelerate the construction of national, provincial, and municipal research platforms and support the construction of a number of key laboratories, characteristic experimental bases, engineering research centers, industrial innovation centers, technology innovation centers, enterprise technology centers, manufacturing innovation centers, and other innovation vehicles. We shall cultivate and build new types of R&D institutions with diversified investment entities, modernized management systems, market-oriented operating mechanisms, and flexible employment methods and bring innovation resources into the market. **Third**, promote the reform of the S&T system. We shall create innovative management methods for AI projects, publicly solicit S&T innovation projects and achievements, and provide support through non-cyclical project funding and other methods. We shall establish and improve a project evaluation system oriented to quality, performance, and contribution, establish and improve a service system for the conversion of S&T achievements into practical applications, give full play to the driving role of the market in the S&T achievement ecosystem chain, and promote the efficient conversion of S&T achievements into practical applications.

(iv) Strengthen AI industry infrastructure construction

In order to provide the basic resource assurance and supporting facilities needed for the development of the AI industry, reduce enterprise development costs, improve the efficiency of research and application, and form an industry cluster effect, the *Regulations* propose the following: **First**, promote the orderly opening up of AI data resources. We shall require the government to build an AI industry public data resource system, establish a public data sharing directory and sharing rules in the field of AI applications, and promote the categorized, graded, and orderly opening up of

public data. We shall establish a public data and industry data standard system in the field of AI applications and promote the development of the conversion of data factors of production into resources, assets, and capital. **Second**, establish an industry-oriented compute and algorithm open platform. We shall encourage and support institutions of higher learning, scientific research institutions, enterprises, and other organizations to build AI compute infrastructure, open-source development platforms, and open-source communities, make use of computing platforms such as the National Supercomputing Center in Shenzhen and Peng Cheng Cloud Brain, open up compute resources, reduce enterprise development costs, shorten development cycles, promote data sharing, algorithm convergence, and compute openness, and cultivate an open source governance ecosystem featuring sharing and collaboration. **Third**, strengthen the layout of public service platforms for the AI industry. We shall support the construction of open innovation platforms for the industry, support R&D on key general purpose technologies, and open them to upstream and downstream industry entities. We shall build an AI testing and certification platform that integrates functional testing, security testing, reliability assessment, and ethical and security risks and create an industrial support system covering key links and key fields.

(v) Give full play to the driving role of application scenarios

Based on the requirements proposed by the State Council's *New Generation Artificial Intelligence Development Plan* to promote the large-scale application of AI and considering the status of applications integrating AI and various industries in our municipality, the *Regulations* propose institutional designs by proceeding from the following aspects in order to give full play to the role of application scenarios in empowering the development of the AI industry. **First**, strengthen application demonstrations. We shall clarify that municipal state institutions, organizations authorized by laws and regulations to manage public affairs, and enterprises and public institutions shall take the lead in using AI products and services and give full play to their guiding and demonstration roles. We shall promote the application of AI technology in the administrative and judicial fields and promote the integrated application of AI in the fields of people's livelihood services, social governance, and economic development. **Second**, focus on leading opening up. We shall stipulate that industry authorities shall establish an open system for AI application scenarios, regularly release a list of AI scenario requirements, publicly solicit application scenario solutions, attract high-level AI product and service suppliers from China and abroad, guide the opening up of more application scenarios, and attract industrial elements to form agglomerations. We shall actively explore the establishment of a marketized supply and demand operation mechanism for AI application scenarios and give full play to the driving role of the market. **Third**, make innovations in product access. On

the basis of graded and categorized supervision, we shall explore the establishment of a product access system that is compatible with the development of the AI industry. We shall stipulate that low-risk AI products and services that have not yet formulated national or local standards but meet international advanced product standards or specifications shall be allowed to conduct pilot trials through tests, experiments, pilot projects, and other methods.

(vi) Establish AI governance mechanisms

In consideration of the gradual formation of global AI governance systems and the actual situation of the special economic zone, the *Regulations* seek to explore the construction of an AI governance framework and reasonably balance the relationship between promoting innovation and holding fast to the bottom line (坚守底线). On the premise of retaining sufficient flexibility and space for industrial development, we shall strictly hold fast to the bottom line in regulation, do a good job in risk prevention and control, and promote the healthy and orderly development of AI. **First**, establish a governance mechanism featuring coordination and co-governance by a diverse range of entities. We shall establish the eight internationally recognized governance principles for AI governance, harmony and friendliness, fairness and justice, inclusiveness and sharing, respect for privacy, security and controllability, shared responsibility, open collaboration, and agile governance. We shall establish and improve the AI governance models of government regulations, industry self-regulation, enterprise self-governance, and supervision by society and promote coordination and co-governance by a wide range of industrial entities. Based on specific AI application conditions such as risk levels, application scenarios, and scope of influence, we shall establish a categorized, graded, and differentiated regulatory model and form an inclusive and prudent regulatory method. **Second**, establish a dedicated AI governance institution. We shall stipulate that the municipal government shall set up an AI ethics committee, clarify the responsibilities of the AI ethics committee, strengthen the ethics committee's overall planning, regulation, guidance, and coordination of AI ethics, accelerate the formulation and implementation of AI ethical and security norms, deepen research on the ethical and security risks of AI technology, and promote the establishment of AI ethical governance rules featuring comprehensive coverage, clear orientation, orderly regulation, and coordination and consistency. **Third**, clarify the behavior bottom line and legal responsibility. We shall stipulate that organizations or individuals engaged in AI research and application shall review ethical and security norms and conduct risk assessments on the possible adverse effects of AI products and services on national interests, public security, commercial order, and individual rights and interests. We shall clarify that national security, public interests, and individual rights and interests must not be violated in AI research and application

activities and prohibit discrimination against users, infringement on consumer rights, and the misuse of technology. We shall also emphasize corresponding legal responsibilities and require all parties to strictly abide by the behavior bottom line and effectively prevent risks.