BUA

Blockchain-based AI application ecosystem and token incentive model

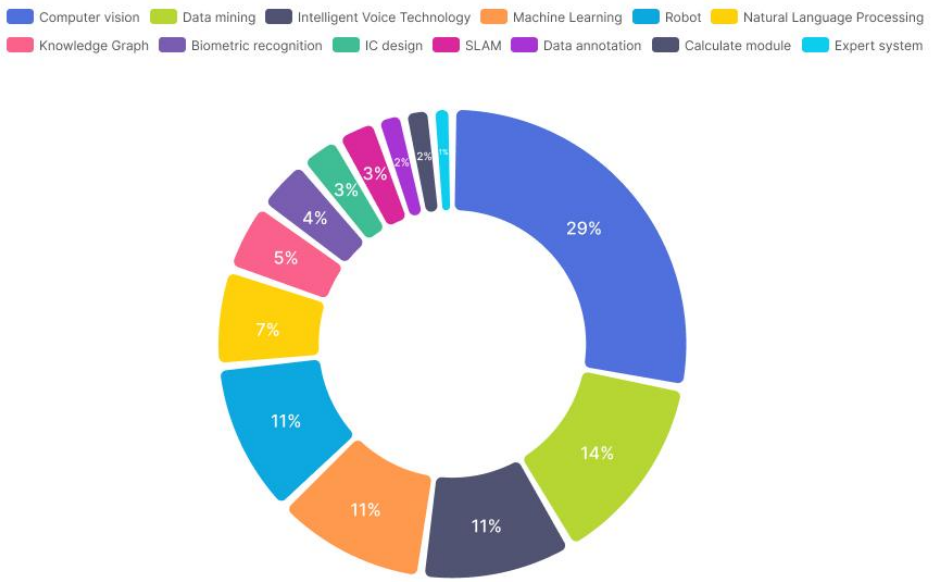
BUA Ecosystem Development Fund

Chapter I Project birth background analysis

The rapid advancement of the digital economy and intelligent society has brought humanity both tremendous opportunities and challenges. Establishing a new data infrastructure capable of adapting to these developments is not only an urgent priority but also an inevitable choice. In the evolution of digital and intelligent societies, robust infrastructure serves as the cornerstone supporting all aspects, encompassing computing, storage, transmission, security, and intelligence. Artificial intelligence, quantum computing, and blockchain are set to become the three major engines driving future societal progress.

1.1 artificial intelligence

In recent years, the field of artificial intelligence (AI) has seen remarkable progress, rapidly integrating into various sectors including the economy, society, and daily life, sparking a global wave of transformation. The International Data Corporation (IDC) recently released its "Global Artificial Intelligence Market Semi-Annual Report," predicting that the AI sector will continue its rapid expansion, maintaining double-digit growth until 2025. Moreover, breakthroughs in language processing, voice recognition, visual technologies, and multimodal solutions are set to fundamentally transform human efficiency. According to Next Move Strategy Consulting's report, the AI market holds immense potential, with projections indicating a 20-fold increase over the next decade. Currently valued at nearly $100 billion, the AI market is expected to reach approximately $2 trillion by 2030.



Artificial intelligence (AI) refers to computer systems or machines performing tasks typically requiring human intelligence, such as visual recognition, speech recognition, natural language processing, and decision support. As one of the most innovative and influential technologies in today's world, AI is transforming production methods and lifestyles across industries, bringing tremendous potential and value to economic and social development. Over the past five years, global enterprises' adoption rate of AI technology has surged dramatically, increasing from just 20% in 2017 to 50% of companies actively deploying AI solutions. This leapfrog development unequivocally demonstrates that AI is becoming the core engine driving industrial innovation and transformation. The evolution of AI in 2024 exhibits several significant trends, which not only reflect technological advancements but also foreshadow new directions for industry applications

and strategic layouts.

• The Evolution from Large AI Models to General Artificial Intelligence: OpenAI is developing next-generation AI that marks a shift from large models to general AI. This new form of intelligence can autonomously modify its code, adapt to complex learning tasks, and operate independently without relying on human-generated data. Such advancements could potentially enable artificial intelligence to surpass human capabilities across various domains.

• Synthetic Data Overcomes Training Data Bottlenecks: Synthetic data, created through machine learning models, addresses the scarcity of high-quality training datasets in AI development. This trend indicates that synthetic data will become a pivotal direction for AI advancement, enhancing system performance while reducing reliance on human-generated materials.

• Applications of Quantum Computers in Artificial Intelligence: Given the computational demands of AI technologies, quantum computers could emerge as a pivotal solution for AI development. Their parallel computing capabilities provide inherent advantages in processing intelligent algorithms. This suggests that the integration of quantum computing and AI technologies may unlock groundbreaking possibilities.

• The Comprehensive Application of Artificial Intelligence and Its Evolving Nature: AI technology is transitioning from single-purpose applications to diversified implementations, expanding from general scenarios to specialized industry-specific contexts. Breakthroughs in large-scale AI models and the rise of generative AI have significantly enhanced AI's capability to tackle complex challenges, providing advanced tools and methodologies for various industries. Experts predict that future AI development will increasingly focus on achieving greater versatility and operational efficiency.

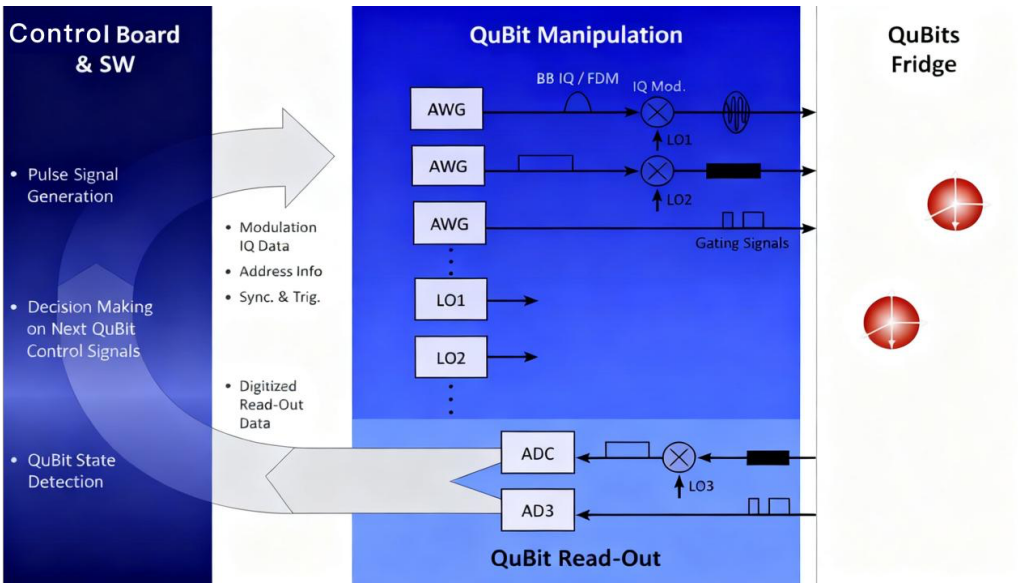
As a strategic technology leading the future, artificial intelligence is currently regarded by major global economies as a significant strategy to enhance national competitiveness and safeguard national security. Since 2013, over 20 countries and regions including the United States, China, the European Union, the United Kingdom, Japan, Germany, France, South Korea, India, Denmark, Finland, New Zealand, Russia, Canada, Singapore, the UAE, Italy, Sweden, the Netherlands, Vietnam, and Spain have released AI-related strategies, plans, or major initiatives. An increasing number of nations are joining the ranks of AI development, supporting the implementation of domestic AI through policies, capital investment, technical talent cultivation, and application infrastructure construction.

The development and application of artificial intelligence (AI) technology have become one of the defining trends in modern society. With its unique advantages and extensive application fields, it has created tremendous business opportunities for market growth. As big data technologies continue to evolve and AI algorithms mature, we can confidently predict that AI will play an increasingly central role in the market in the near future. This technological advancement will unlock greater value potential for enterprises and propel the market into a new era of intelligent transformation.

1.2 quantum computing

The rapid solution of complex problems, the efficient processing of large-scale data, the secure transmission of sensitive information, and the difficult to crack encryption algorithm provide a new computing power and security guarantee for the digital economy and intelligent society, with disruptive technological advantages and competitiveness.

With the advancement of technology, the field of computer science has achieved remarkable progress. As traditional computers increasingly struggle to meet growing computational demands, quantum computing's potential has become a focal point of research and attention. Quantum computers are poised to revolutionize computing, marking a pivotal turning point in computer science. They promise faster and more efficient processing methods capable of handling complex problems, driving technological innovation forward.



The core concept of quantum computers lies in utilizing the principles of quantum mechanics for computation, rather than the binary system used by traditional computers. By enabling simultaneous processing of multiple operations, quantum computers can solve complex problems more efficiently than conventional machines. Moreover, their unique computational approach allows them to outperform traditional systems in specific scenarios, such as large-scale data processing and intricate mathematical computations.

Beyond their speed and efficiency, quantum computers also offer unparalleled data security. Unlike traditional algorithms that can be cracked by conventional computers, quantum computing employs encryption methods that are virtually unbreakable, enabling significantly enhanced data protection and privacy safeguards. This technological edge makes quantum computers particularly promising for applications spanning finance, healthcare, telecommunications, and military defense sectors.

Quantum computing has a wide range of applications in the Internet, the following are some typical applications:

• Big data processing: Quantum computing can process large-scale data quickly, and is expected to provide more efficient solutions in the field of big data analysis, and accelerate data mining, pattern recognition and other work.

• Cryptography and security: Quantum computing has potential advantages in cracking traditional cryptography, but it can also be used to create more powerful encryption algorithms and improve information security.

• Optimization problems: Quantum computing has natural advantages in dealing with optimization problems (such as logistics, resource allocation, etc.), which can improve the

efficiency of operations research and optimization algorithms.

- Artificial intelligence: Quantum computing is expected to accelerate the training process of artificial intelligence algorithms such as machine learning and deep learning, and improve the performance of artificial intelligence models.

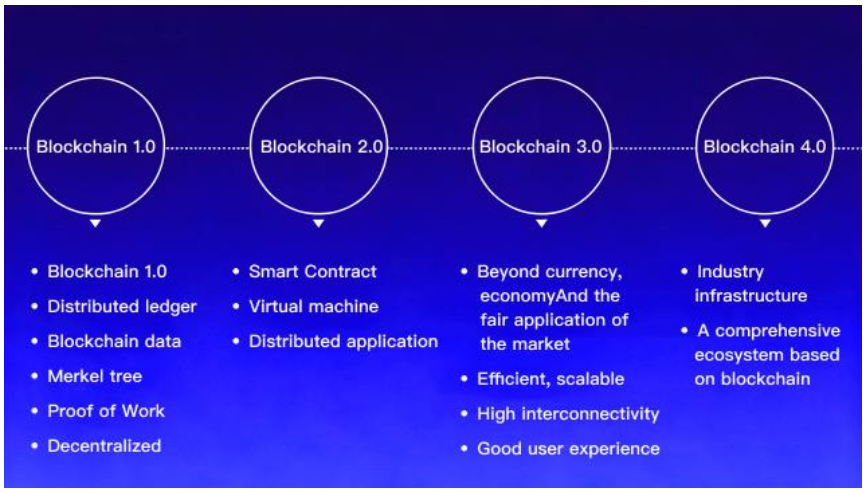
- Quantum communication: Quantum computing can be combined with quantum communication technology to achieve more secure and privacy protection of communication, bringing revolutionary changes to Internet communication.

Quantum computing is poised to revolutionize data processing, enhance information security, optimize AI algorithms, and advance scientific research, ultimately making our digital world smarter, more efficient, and safer. When combined with innovative design frameworks, quantum computing and creative architecture are ushering in a new era of technology that not only streamlines daily life but also unlocks unprecedented possibilities for groundbreaking innovations.

1.3 Blockchain technology

Blockchain technology originated from the foundational paper "Bitcoin: A Peer-to-Peer Electronic Cash System" published in 2008 by a scholar known as "Satoshi Nakamoto". In a narrow sense, blockchain is a chain-like data structure that sequentially connects data blocks in chronological order, forming an immutable and tamper-proof distributed ledger secured through cryptography. Broadly speaking, blockchain technology represents a novel distributed infrastructure and computational paradigm that utilizes chain-like data structures for data verification and storage, employs distributed node consensus algorithms for data generation and updates, ensures secure data transmission and access through cryptographic methods, and leverages smart contracts composed of automated script code for data programming and operations.

Currently, blockchain technology is hailed by numerous large institutions as a revolutionary breakthrough that fundamentally transforms business operations and organizational frameworks. The technological foundation of blockchain lies in its distributed network architecture. It is precisely the maturity of distributed network technology that enables the establishment of decentralized, weak-center, multi-center, shared, consensus-based, and collaborative organizational structures and commercial systems.



As public understanding of blockchain technology's applications and accessibility grows, there has been a surge in enthusiasm for developing core underlying technologies, on-chain applications, and real-world implementations. Currently, approximately 20% of blockchain R&D teams focus on foundational protocols, while 80% concentrate on practical applications across various industries. Unlike the application layer, underlying protocols create market value for tokens and decentralize traditional centralized data models. Within blockchain ecosystems, application-layer projects now function as full-service providers rather than controlling user traffic or data ownership. The value of personal data is instead distributed among users, making underlying protocols inherently more valuable than their application-layer counterparts.

The foundation of value exchange lies in building mutual trust. Blockchain technology revolutionizes trust mechanisms through innovative design, transforming human-to-human relationships into technical-based trust during transactions. By automating specific processes through algorithms, this technology enables businesses to operate at lower costs while maintaining essential trust frameworks.

Blockchain has shown great advantages in empowering AI:

- Blockchain facilitates AI data sharing: As the core driving force and fuel for AI development, data requires collective sharing to ensure abundant resources. Only through efficient data circulation can greater value be created. Authentic ownership protection ensures sustainable contributions while maintaining data reliability and authenticity. Enhanced data exchange capabilities ultimately boost operational efficiency. Blockchain's inherent features—certification, immutability, and economic incentives—provide optimal solutions for these challenges.

- Blockchain and Identity/Security: Blockchain enhances AI security mechanisms by enabling contract management and improving system accessibility. For instance, it allows device users to register on the blockchain, where smart contracts enable multi-level access control and provide personalized features for different user tiers. The technology ensures tiered access through user registration, preventing both device misuse and user risks. Furthermore, blockchain facilitates shared ownership and collaborative usage of devices, allowing users to collectively manage device statuses and make decisions based on smart contracts.

- Blockchain and AI Value Exchange: Blockchain inherently possesses open, fair, and transparent characteristics. Transactions within the blockchain ecosystem demonstrate heightened transparency, enabling more equitable market operations. The decentralized nature of blockchain facilitates the creation of expansive platforms that support peer-to-peer value exchange. In the blockchain environment, AI integration, data interoperability, and value realization become significantly more feasible, effectively eliminating information asymmetry and transaction barriers – a model already demonstrated by Bitcoin. This advancement will undoubtedly accelerate the circulation of AI and data resources, while encouraging broader public participation in AI development and data provision.

- Shared and Collaborative Computing Power: The Bitcoin or Ethereum networks inherently form massive computing power pools. Machine learning, particularly deep learning algorithms, requires substantial computational resources. Moreover, deep learning and neural network algorithms demand multi-node collaborative computation. Blockchain's distributed architecture and decentralized nature enable more efficient management of computing resources — not just utilizing data center facilities, but also integrating idle distributed computing resources to create larger, transaction-friendly computing ecosystems. With the advancement of 5G and IoT, edge computing and fog computing — discrete

computing resources — require broader and more reliable management frameworks. Blockchain provides a shared, transparent, and tradable computing environment that organizes these resources. Therefore, building a decentralized resource pool through blockchain while achieving credible and value-based management can better leverage various computing resources, whether cloud computing or discrete computing assets.

- Blockchain provides a secure and reliable development environment for AI: The smart contracts and intelligent transaction mechanisms of blockchain can effectively protect privacy while enabling data openness and integration, ensuring that data transaction entities remain encrypted. Moreover, the immutable nature of blockchain records facilitates public access to and supervision of AI device records, thereby enhancing public trust and acceptance of artificial intelligence. In this data-driven era, people can extract valuable insights from data. Blockchain technology not only safeguards data security but also assists in extracting meaningful information. Therefore, blockchain plays a crucial role in addressing information leakage issues inherent in AI systems.

1.4 The intersection of quantum computing and artificial intelligence

The convergence of quantum computing and artificial intelligence is not only driving technological innovation but also unlocking unprecedented possibilities for humanity. As the potential of quantum machine learning continues to be explored, AI technologies are accelerating advancements in quantum computing. This integration will propel humanity toward a smarter and more efficient future.

1) The potential of quantum machine learning

The integration of quantum computing and artificial intelligence, particularly in machine learning, demonstrates tremendous potential. Quantum Machine Learning (QML) aims to leverage the powerful capabilities of quantum computing to optimize and accelerate traditional machine learning algorithms. This convergence could lead to breakthroughs across multiple domains.

- Quantum-enhanced Algorithms: Quantum computing enables tasks that traditional computers cannot accomplish or require extremely long processing times. For instance, quantum-

inspired algorithms like Quantum Perceptron (QP) and Quantum Support Vector Machine (QSVM) can significantly improve the training speed and accuracy of machine learning models. These quantum-enhanced methods not only excel at handling big data but also optimize complex high-dimensional problems such as image classification and natural language processing.

• Big Data Processing: With the explosive growth of data volumes, traditional computing resources often struggle to meet machine learning's demands for processing massive datasets. Quantum computing's parallel processing capabilities effectively address this challenge, enabling faster big data analysis and model training. The accelerated processing and filtering speed of quantum computing on datasets will significantly enhance the efficiency and performance of AI models.

• Training and Optimization of Complex Models: Quantum computing demonstrates unique advantages in solving combinatorial optimization problems and high-dimensional search tasks, which are frequently encountered in machine learning. By leveraging quantum computing, AI models can more efficiently explore vast solution spaces, thereby identifying superior model parameters and architectures that enhance generalization capabilities and prediction accuracy.

2) Quantum AI: The embryonic form of the intelligent system of the future

The convergence of quantum computing and artificial intelligence is poised to create groundbreaking intelligent systems that surpass current AI capabilities. These quantum-powered AI systems will demonstrate superior learning and reasoning abilities, enabling them to handle complex tasks that traditional AI struggles with, such as global optimization, multidimensional prediction, and high-dimensional data analysis.

• Next-Gen Intelligent Systems: Quantum AI is poised to become the cornerstone of next-generation intelligent systems, empowering solutions to global challenges including climate change modeling, precision medicine, and complex financial forecasting. Through quantum computing's capabilities, AI will be able to process more sophisticated models and data, delivering more accurate and real-time decision support.

• Cross-domain Applications: The potential of quantum AI extends far beyond the tech sector, playing a vital role in social, economic, and scientific research. In the future, quantum AI could become a key technological engine driving innovation across industries, revolutionizing how we process information, make decisions, and drive progress.

The convergence of quantum computing and artificial intelligence heralds a new phase in technological advancement, with their synergy poised to usher in an entirely new era of intelligence. In the future, quantum AI will transcend mere computational intelligence – evolving into an innovative technological paradigm that will propel humanity toward a more efficient and intelligent future.

3) The new engine of technology in the future

The combination of quantum computing and artificial intelligence is expected to become a new engine for future technological development, driving profound changes in various industries. This technological convergence will not only bring disruptive innovation, but also occupy a key position in the global technology competition and shape the future economic and social landscape.

The combination of quantum computing and artificial intelligence is expected to be the

core driving force leading the next industrial revolution. Their convergence will not only bring technological breakthroughs, but also profoundly affect the development mode and competitive landscape of various industries.

• Cross-industry Impact: Quantum AI technology will play a pivotal role across multiple sectors. In finance, it can optimize investment portfolios, predict market fluctuations, and detect fraudulent activities, thereby enhancing the stability and efficiency of financial systems. In healthcare, quantum AI enables rapid drug screening, personalized treatment customization, and accelerates new drug development. For manufacturing, it helps streamline supply chain management, boost production efficiency, and drive advancements in smart manufacturing. With its application potential spanning nearly all industries, quantum AI is poised to fundamentally transform how we work and improve the quality of life.

• Disruptive Innovation: The integration of quantum computing and artificial intelligence will catalyze groundbreaking technologies and business models. For instance, in AI-driven scientific research, quantum computing can accelerate simulations and comprehension of complex natural phenomena, driving the discovery and application of new materials and energy sources. These transformative innovations not only create immense commercial value but also propel social progress by addressing pressing challenges such as energy shortages, environmental protection, and health management.

The convergence of quantum computing and artificial intelligence will also intensify the global competition in science and technology. Countries are increasing their investment in this field to compete for the commanding heights of future scientific and technological development.

• International Competition Landscape: Countries worldwide, particularly the United States, China, and the European Union, have recognized the importance of quantum AI and have successively introduced policies to increase support for quantum computing and artificial intelligence research. For instance, the U.S. National Quantum Initiative Act and China's New Generation Artificial Intelligence Development Plan both explicitly list quantum AI as a national strategic priority. The competition among nations in the field of quantum AI is not only reflected in technological R&D but also includes the contest for talent, capital, and intellectual property rights. This competition will determine the future leadership in global technology and profoundly influence the international economic and political landscape.

• Reshaping the Technology Ecosystem: As quantum AI advances, traditional tech ecosystems are being transformed. Tech giants, startups, research institutions, and governments will collaborate more closely to form an innovation-driven ecosystem. This ecosystem will accelerate the development and application of quantum AI technologies, enabling their rapid conversion into practical productivity. Meanwhile, openness and collaboration will become the defining feature of future technological progress, with cross-border partnerships driving global advancements in technology and social welfare.

The birth of 1.5 BUA

When AI, quantum computing and blockchain converge, they will create a highly complementary and innovative technology ecosystem, opening up exciting prospects for future technological development and new fields and opportunities for the capital market

• The intelligent analysis of AI and the decentralized construction of blockchain create a secure and efficient digital infrastructure.

• Blockchain provides a large amount of authentic and reliable data, providing a highly credible data source for the training and reasoning of AI algorithms.

• Quantum computing provides unprecedented computing power, further driving the development of AI algorithms and the upgrade of blockchain systems.

At present, human beings are entering a broader era of artificial intelligence (Broad AI), which is marked by the beginning of artificial intelligence technology to solve one or more problems in a field or across fields. The interaction between AI, quantum computing and blockchain makes it possible for new technology applications, and brings new business models and investment opportunities:

• Password anchoring and blockchain work together to make counterfeiters invisible.

• New encryption technology to break down hacker attacks.

Artificial intelligence robots give new energy to finance.

• New approaches will eliminate AI bias.

• Quantum computing will become mainstream.

As 2025 dawns, the global economy confronts unprecedented challenges and opportunities. In this era of rapid transformation, the accelerated development of new technologies, significant policy shifts, and evolving market trends are collectively shaping a complex yet promising global economic landscape. The synergistic effects of AI, blockchain, and quantum computing will drive

a worldwide technological revolution and industrial transformation, unleashing boundless commercial potential and innovation momentum. This convergence is set to ignite investor enthusiasm and spark a new wave of wealth creation!

Given these developments, we affirm that humanity now inhabits an artificial intelligence-driven era. The digital economy and intelligent society innovations manifest through four pivotal dimensions: core AI technologies, AI-integrated blockchain solutions, next-generation computing capabilities (particularly quantum computing), and industry-specific AI applications. Ultimately, AI's transformative power must begin with enhancing individual lives and reshaping industries. To this end, the BUA Ecosystem Development Fund has launched the BUA Project, aiming to pioneer new wealth frontiers at the intersection of AI, quantum computing, and blockchain technologies.

Chapter II Overview of the BUA Project

2.1 BUA Project Introduction

BUA (Blockchain-Driven Artificial Intelligence), developed by the BUA Ecosystem Development Fund in collaboration with global top-tier technical teams, communities, and capital, is a blockchain-based AI application ecosystem and token incentive model. Dedicated to exploring innovative integration of artificial intelligence, big data, and quantum computing technologies, it aims to build a self-evolving AI ecosystem. This comprehensive support system drives the AI revolution, propelling the development of future intelligent societies through robust technological empowerment.

Vision: Use the powerful performance of quantum computing to push artificial intelligence into a new stage of development and build a more intelligent and efficient decentralized ecosystem.

Mission: To provide quantum computing based technical support for AI and blockchain industry, reduce the technical threshold, and empower developers and users.

primary objective ：

- Establish a platform for developing and trading AI models supported by quantum computing.
- Build a decentralized ecosystem for data sharing and privacy protection.
- Provide governance rights and economic incentives to community members.
- Improve the efficiency and security of AI models through quantum technology.
- Provide an AI algorithm library for quantum optimization, supporting machine learning, deep learning and other tasks.
- Improve the training efficiency of AI models and reduce the computing cost with the help of quantum computing.

BUA will revolutionize the integration of quantum computing and artificial intelligence (AI) to help advance the next generation of technology. BUA will be built through the following phases:

- Establishing trust —— Based on the integration of AI, quantum computing and blockchain to establish a decentralized trust base;
- Design the ecology —— based on the logic of decentralization and quantum algorithm, establish the innovation consensus mechanism, and design the ecology model;
- Develop rules —— based on blockchain smart contracts, develop rules and rewards and

punishments, and the system automatically implements the rules;

• Token incentive —— issue BUA tokens to provide a medium of value circulation and incentive model for the ecosystem.

• Launching the ecosystem —— On the basis of mature AI applications, launch the AI model development and trading platform, data sharing system, quantum machine learning model, computing power application system and other ecosystems.

The future BUA ecosystem will integrate top-tier applications including decentralized AI platforms, scientific research tools, and higher education systems, supported by foundational infrastructure such as data processing capabilities, computing power, algorithmic frameworks, public blockchain networks, and AI-powered data centers. Its innovative incentive model establishes a complete value chain that drives economic growth. By fully leveraging the transformative potential of AI, quantum computing, and blockchain technologies, BUA embodies the principles of decentralization and openness. This ecosystem pioneers the innovative convergence of quantum computing and artificial intelligence, creating groundbreaking advancements for the next-generation value internet. Ultimately, it will lead the global fifth technological revolution to achieve major breakthroughs.

2.2 BUA Ecological Development Fund

The BUA Foundation, led by HB Wealth Advisors (HWA) and co-founded by UBP Asset Management, IdeaCrypto Exchange, AlGrid Labs, Inflection Al, and other institutions, aims to provide ecosystem support for community development. To enhance governance and empower consensus holders with token rights, the BUA token has been issued as a circulating currency. Moving forward, the foundation will leverage diverse ecosystem applications and circulation scenarios to create value, delivering investment returns to its holders.

The purposes for which the BUA Foundation manages assets/funds are not limited to:

• Support for development of artificial intelligence projects

• Development and maintenance of supercomputing supply agreements

Investment in cutting-edge AI technology and thinking research

• DePIN ecological infrastructure construction

• Initial funding for AI developers

• R&D in the context of Al +DePIN

• Application support for AI models

• Development of related business and public welfare investment

• Global proliferation of decentralized concepts and philanthropic investment

• Special rewards for super nodes

As a global leader in artificial intelligence (AI) research and incubation, the BUA Ecosystem Development Fund has been dedicated to advancing General Artificial Intelligence (AGI) and AI-generated Content (AIGC). Its core mission is to "achieve secure AGI," encompassing the development of "universal" robots and natural-language chatbots that benefit humanity. The fund operates three key R&D institutions: the Intelligent Industry Research Institute, AI Strategy Center, and Quantum Computing Laboratory.

• Intelligent Industry Research Institute: Relying on artificial intelligence technology with massive data and supercomputing capabilities, we are deeply engaged in AI industry practice and frontier research, participate in multi-country report research based on case results; build an influential AI industry frontier think tank through open, cooperative, co-construction and sharing.

• AI Strategy Center: Guided by the goal of AI-driven intelligent transformation for enterprises, this initiative not only tracks advancements in the AI industry but also focuses on upgrading traditional industries through smart transformation. By leveraging the AI Strategy Center as its core platform, it is building an AI + industry ecosystem through initiatives including industrial research labs, policy reports, case studies, AI strategy bootcamps, and Chief Intelligence Officer training programs.

• Quantum Computing Laboratory: Dedicated to researching quantum computing systems, algorithms and fundamental theories for quantum computing and quantum system simulation, as well as their applications in related fields and industries. The laboratory also focuses on pioneering research and innovation in cutting-edge quantum hardware technologies, including automated high-precision quantum measurement and control systems, large-scale practical quantum chip design, and related research initiatives.

BUA Ecological Development Fund has established offices in Hong Kong, London, Silicon

Valley, Riyadh, Abu Dhabi, Dubai, Kuala Lumpur, Seoul and other cities. Additionally, it operates in Germany, Thailand, the Philippines and other countries. This will provide a global business network to support the worldwide implementation of BUA projects.

2.3 Project core team

The core team of BUA is composed of experts and scholars from blockchain, artificial intelligence, quantum computing and other fields. They have rich technical experience and innovation ability, which provide a solid foundation and guarantee for BUA's technical architecture and functions.

1) Core team

Michael Lee —— a Ph.D. in quantum computing and artificial intelligence from the Massachusetts Institute of Technology (MIT), has served as senior researcher and technical director at Google, IBM, Microsoft (MSFT) and other well-known enterprises. He is a leading figure and authoritative expert in the fields of blockchain, artificial intelligence and quantum computing.

Elowen Watson — A Ph.D. in Computer Science from the Massachusetts Institute of Technology, former head of the Google Quantum AI Lab, with 15 years of experience in quantum software and hardware development, is a leading developer and leader in quantum artificial intelligence globally. He has participated in several major quantum computing projects and achievements, such as the Google Quantum Supremacy experiment, Google Quantum Neural Network framework TensorFlow Quantum, and is a member or reviewer for several international and domestic scientific journals and conferences, including *Nature Quantum Information, IEEE Transactions on Quantum Engineering#.

Ivo, a PhD in Computer Science from Lovelac —— Oxford University and former Director of IBM Blockchain Research Center, brings 20 years of research and management experience in blockchain and quantum computing. As an internationally renowned expert and entrepreneur in these fields, he has received numerous prestigious awards including the Turing Award for blockchain innovation and the Royal Computing Society's Gold Medal. He serves as an advisor or committee member for global organizations such as the EU Blockchain Observatory and Forum and the UK Quantum Technology Centre.

David Wang—— a PhD in blockchain and cryptography from Stanford University, has served as a core developer and technical consultant for well-known blockchain projects such as Ethereum (Ethereum), Polkadot (Polkadot), EOS, etc., and is an outstanding talent and innovator in the field of blockchain and cryptography.

Jessica Tanaka—— holds a master's degree in business management and marketing from the University of Tokyo. She has served as senior manager and Marketing Director at SoftBank, NTT, and other well-known companies in Japan. She is a professional and leader in the field of business management and marketing.

Rajesh Kumar —— holds a Master's degree in Financial Engineering and Risk Management from the Indian Institute of Technology. He has served as Senior Analyst and Chief Financial Officer at prominent financial institutions including State Bank of India and Industrial Credit and Investment Corporation of India, establishing himself as an expert and leader in the field of financial engineering and risk management.

2) AI algorithm model contributor

John Schul man, Barret Zoph, Christina Kim, Jacob Hilton, Jacob Menick, Jiayi Weng, Juan Felipe Ceron Uribe, Liam Fed us, Luke Metz, Michael Pokorny, Rapha Gontijo Lopes, Shengjia Zhao, Arun Vijayvergiya, Eric Sigler, Adam Perel man, Chelsea Voss, Mike Heaton, Joel Parish, Dave Cummings, Rajeev Nayak, Valerie Balcom, David Sch nurr, Tomer Kaftan, Chris Hallacy, Nicholas Turley, Noah Deutsch, Vik Goel, Jonathan Ward, Wojciech Zaremba, Long Ouyang, Leonard Bogdonoff, Joshua Gross, David Medina, Sarah Yoo, Teddy Lee, Ryan Lowe, Dan Mossing, Joost Huiz inga, Roger Jiang, Carroll Wainwright, Diogo Almeida, Steph Lin, Marvin Zhang, Jakub Pachocki, Phil Tillet, Greg Brockman, Nick Ryder, Alex Paino, Qiming Yuan, Clemens Winter, Ben Wang, Mo Bavarian, Igor Babuschkin, Nik Tezak, Heewoo Jun, William Zh uk, V itchyr Pong, Lukasz Kaiser, Jerry Tworek, Andrew Carr, Lilian Weng, Sandhini Agarwal, Karl Cobbe, Vineet Kosaraju, Alethea Power, Stanislas Polu, Jesse Han, Raul Puri, Shawn Jain, Benjamin Chess,Christian Gibson, Oleg Boiko, Emy Parparita, Amin Tootoonchian, Kyle Kosic, Christopher Hesse。

2.4 System Design Principles

The foundation of value exchange lies in building mutual trust. Blockchain technology revolutionizes trust mechanisms, while artificial intelligence transforms human-machine value interactions. Through innovative technical designs, BUA enables the transition from human-to-human trust to technology-driven trust during value exchanges. By automating specific

processes through programming, this approach allows businesses to operate at lower costs while maintaining essential operational efficiency.

1) Design principles at the economic level

Cost reduction stands as a fundamental design principle of blockchain technology. This enables participants in BUA (Blockchain-based Interaction) to interact without requiring basic information about each other, achieving "trust without trust" – a paradigm shift from the traditional third-party-centric trust model. The innovative design features several noteworthy aspects, with two particularly worthy of attention:

First, trust in interactions is established through machine and algorithmic mechanisms. Leveraging the BUA quantum computing protocol, BUA has developed a trust-based interaction framework that resolves mutual confidence challenges in anonymous exchanges. All participants establish identities through cryptographic principles in a trustless environment, with mutual trust ensured via consensus mechanisms. Second, interactions are fully automated. BUA employs programmable smart contracts to execute mutually agreed terms automatically, eliminating human interference and institutionally preventing any party from denying obligations.

Based on the decentralized characteristics of BUA, the existing economic system can realize value delivery directly between the two parties without the current institutional constraints or endorsement by third-party institutions. This decentralized characteristic can effectively reduce communication costs and improve interaction efficiency.

2) Design principles at the technical level

In popular terms, BUA's blockchain technology, smart contracts, quantum computing and machine learning technology models can be viewed as a set of multi-party participation, reliable distributed data storage and computing power service system. The unique features are:

- Multi-party participation in recording behavior, that is, all parties can participate in recording;

- Multi-party participation and joint maintenance of data storage, that is, all parties participate in the storage and maintenance of data;

- Stores data and contracts in a chain, which can only be read and written, not tampered with.

3) Application solutions

Under the integration of AI, quantum computing and blockchain, BUA will be committed to providing perfect solutions for the market in the following aspects:

- Building a Global Quantum Computing Network: BUA is integrating global computing resources through the establishment of a worldwide quantum computing network.

The source allows anyone to contribute their computing resources to the network, and also to obtain computing resources from the network.

- Improve resource utilization: The quantum computing network of BUA can effectively utilize idle computing resources and greatly improve the utilization rate of resources. Meanwhile, through intelligent scheduling, computing resources can be dynamically allocated according to the requirements of computing tasks, further improving the utilization

efficiency of resources.

- Decentralized Service Provision: BUA utilizes blockchain technology to deliver decentralized services. This approach not only reduces costs but also addresses data security and privacy protection concerns. Furthermore, since quantum computing resources in the network are distributed across nodes, even if a single node fails, it won't disrupt the entire network's operation.

In future applications, the BUA system will enable all participants to share information, reach consensus, and collectively manage resources. It supports developers and third-party projects in establishing AI-powered computing infrastructure. Through BUA's decentralized quantum computing network, computational resources can be distributed and utilized more efficiently, driving global digital transformation. This infrastructure empowers massive data processing and intelligent application development while providing robust support for AI advancement, accelerating human society's intelligent evolution. Ultimately, it will create a smarter, more trustworthy, and sustainable new world.

2.5 BUA Quantum Computing Protocol

The BUA Quantum Computing Protocol is an innovative distributed computing solution that integrates quantum technology, machine learning, and blockchain. By harnessing global idle computing resources, it delivers efficient, scalable, privacy-protected, and censorship-resistant distributed computing. Designed to provide humanity with enhanced intelligent services and innovative applications, BUA aims to create a more promising and sustainable future. Its core components include: AI governance, AI computing market, AI data security, AI modeling, AI task execution, AI learning, AI transformation, and AI detection systems.

- AI Governance: A network governance technology that leverages blockchain to achieve decentralization, autonomy, and consensus. It utilizes the Governance Description Language (GDL) to define network rules, roles, rewards, and penalties, while employing consensus mechanisms and smart contracts to ensure security and reliability. This approach ensures fair transparency within the network while incentivizing active contributions from participants.

- AI Computing Power Market: A market technology utilizing blockchain and quantum economics to enable dynamic pricing and free trading of computing resources and tasks within networks. The system employs Market Description Language (MDL) to define market rules, mechanisms, and efficiency metrics, while leveraging smart contracts and quantum game theory to execute market logic and operations. This framework achieves rational pricing and free trading of computing resources and tasks across networks, while simultaneously balancing supply and demand dynamics.

- AI Data Security: A data processing technology that utilizes Differential Privacy (DP) and Homomorphic Encryption (HE) to ensure privacy protection and secure data transmission. It employs Data Description Language (DDL) to define data attributes, formats, and sensitivity levels, while applying randomization and encryption algorithms to anonymize and encrypt information. This approach enables efficient data sharing and collaboration while safeguarding the interests of both data owners and users.

- AI Model: A processing technology that leverages Model Compression (MC) and Model Encryption (ME) to achieve lightweight and secure model transmission. It utilizes Model Description Language (MDL) to describe the model's structure, parameters, and performance metrics, while employing pruning, quantization, and encryption algorithms for

compression and protection. This approach enables efficient storage and transmission of models while safeguarding intellectual property rights for both creators and users.

• AI Task: A task processing technology that utilizes Task Partitioning (TP) and Task Allocation (TA) techniques to achieve efficient execution and optimized distribution of tasks. It employs Task Description Language (TDL) to describe task types, requirements, objectives, and other information, then uses partitioning and matching algorithms to allocate tasks. This approach ensures efficient task completion while balancing computational resource load and efficiency.

• AI Learning: A learning and processing technology that utilizes federated learning (FL) and meta-learning (ML) techniques to achieve joint training and adaptive updates of models. It describes learning strategies, parameters, and evaluation metrics using the Learning Description Language (LDL), while employing joint optimization and meta-optimization algorithms to train and update models. This approach enables continuous model improvement while adapting to diverse data and task variations.

• AI Transformation: A conversion technology that leverages blockchain and quantum computing to standardize data and tasks within networks. Using the Transformation Description Language (TDL), it defines conversion rules, processes, and effects while executing transformation logic through smart contracts and quantum algorithms. This enables efficient data and task conversion optimization across networks, adapting to diverse data types and scales.

• AI Detection: A detection technology utilizing blockchain and quantum sensing to monitor the quality of computational resources and computing tasks within networks while ensuring security. It employs Detection Description Language (DDL) to define standards, methods, and results for detection, while leveraging smart contracts and quantum error-correcting codes to execute detection logic and operations. This system enables effective monitoring and timely repair of computational resources and tasks in networks, while preventing malicious nodes from cheating or launching attacks.

Supported by the BUA quantum computing protocol, the cross-chain, cross-platform and cross-device computing power sharing and collaboration of BUA becomes more convenient, and the massive data processing and intelligent application development of AI will also have a one-stop attribute.

2.6 Ecological partners

BUA's ecosystem partners consist of leading enterprises and institutions from global sectors including artificial intelligence, quantum computing, and blockchain. These collaborators provide BUA with technical expertise, financial support, resource allocation, and strategic wisdom, serving as a powerful driving force for the organization's growth and success. Moving forward, BUA will deepen partnerships with more organizations to jointly advance quantum AI development.

1) Google (GOOG)

Founded on September 4, 1998 by Larry Page and Sergey Brin, Google Inc. is globally recognized as the leading search engine provider. The company operates in internet search, cloud computing, advertising technology, and develops numerous internet-based products and services. As a tech giant, Google has demonstrated strong capabilities in natural language processing (NLP) and augmented intelligence generation (AIGC). BUA will establish comprehensive cooperation with Google, gaining access to its core technologies in NLP and AIGC development.

2）IBM（International Business Machines Corporation）

International Business Machines Corporation (IBM), headquartered in Ammon, New York State, was founded in 1911 by Thomas John Watson in the United States. As the world's largest information technology and business solutions company, IBM employs over 310,000 people globally and operates in more than 160 countries and regions. BUA will collaborate with IBM to deepen cooperation in cloud computing, data analytics, and artificial intelligence.

3) Microsoft (MSFT)

Microsoft (NASDAQ: MSFT) is an American multinational technology company founded on April 4, 1975. Headquartered in Redmond, Washington State, the company specializes in developing, manufacturing, licensing, and providing comprehensive computer software services. In November 2023, Microsoft announced the appointment of OpenAI founders Sam Altman and Greg Blockman to lead its new artificial intelligence team. BUA will collaborate with Microsoft on cloud computing, quantum computing, and machine learning initiatives.

4）OpenAI

OpenAI, an AI research company headquartered in San Francisco, USA, is a dual entity comprising the for-profit OpenAI LP and its non-profit parent organization OpenAI Inc. Its core mission is to develop Safe General Artificial Intelligence (AGI) that benefits all humanity. By pioneering large-scale model development, OpenAI has revolutionized the AI industry through innovative paradigms, establishing itself as a trailblazer in general AI. The company will provide algorithmic models and intelligent interaction support for BUA.

5) Ethereum (Ethereum)

Ethereum (ETH) is an open source public blockchain platform with smart contract capabilities, through its dedicated add

The decentralized cryptocurrency Ether (ETH) provides the Ethereum Virtual Machine (EVM) to process peer-to-peer contracts. While Ethereum enables digital asset transfers, its capabilities extend far beyond this ————allowing users to configure custom code and interact with other applications. The platform's flexibility further supports the creation of complex programs. Building on Ethereum's L2 blockchain infrastructure, BUA will develop AI-powered computing services and ecosystem extensions, while integrating more crypto-related applications to empower market development.

6) Polkadot

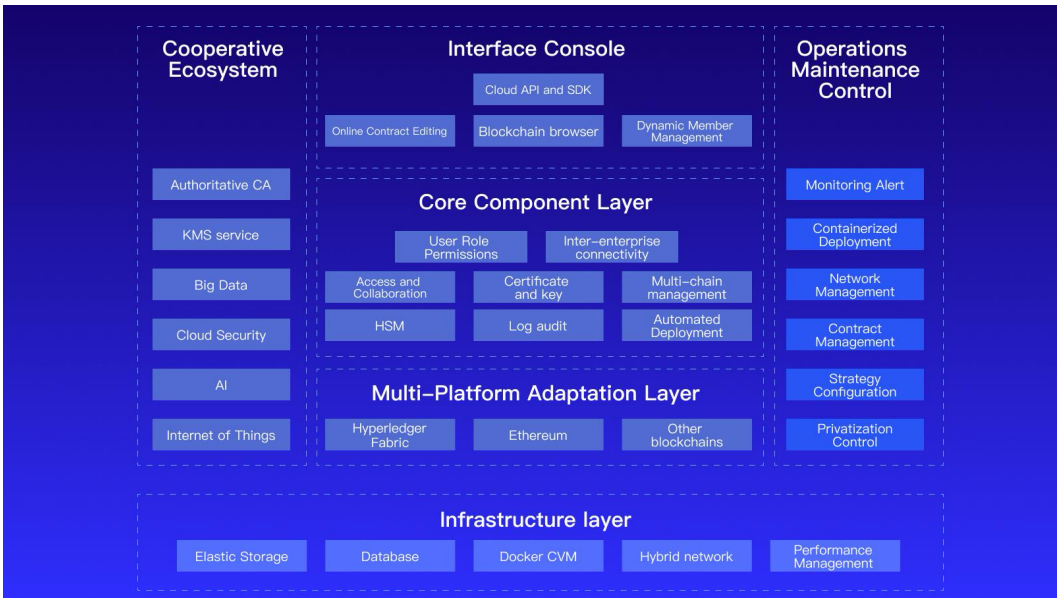
Polkadot is a next-generation blockchain protocol that connects multiple specialized blockchains into a unified network. As part of the broader vision to "return control of internet monopolies to individuals," Polkadot builds upon the revolutionary promise of previous blockchain networks while offering several fundamental advantages. It will provide comprehensive support for cross-chain collaboration, customization, and upgrade iterations within the BUA ecosystem.

Chapter III Core Technology Module

The core of BUA is the BUA Quantum Computing Protocol, which integrates blockchain technology, smart contracts, quantum mechanics, and machine learning. This protocol enables cross-chain, cross-platform, and cross-device computing power sharing and collaboration. Consequently, BUA's technical framework encompasses fundamental attributes including blockchain technology, smart contracts, cross-chain integration, quantum mechanics, and machine learning.

3.1 Blockchain technology: underlying architecture foundation

The blockchain system architecture of BUA includes infrastructure layer, multi-platform adaptation layer, core component layer and interface control layer.



Based on the integration of blockchain and artificial intelligence technology, BUA blockchain technology features include:

- Support for authoritative CA to issue digital certificates;
- Hardware acceleration encryption/decryption;
- Support for national secret SM1, SM2, SM3 and SM4 algorithms;
- Containerized resource management, support for multiple chains;
- Devops operation and monitoring;
- Data redundancy backup of storage system, safe and reliable;

• Data migration standardization;

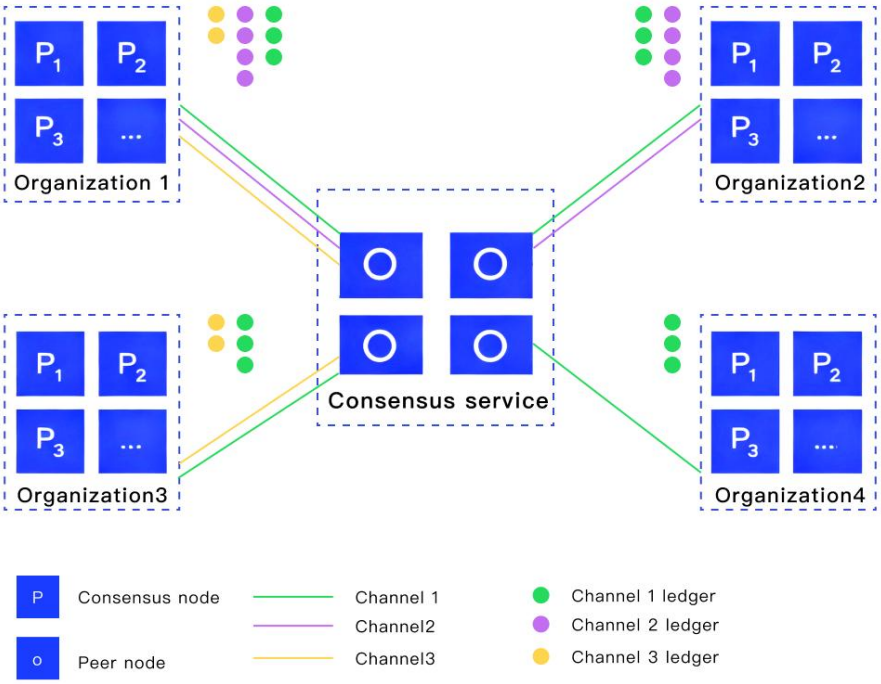
• Incremental recovery technology to speed up user data recovery;

• Redundant physical link design, multi-link high reliability path, no single point of failure.

1) Multiple chain support

A logical blockchain is a private blockchain system that aggregates specific organizations and nodes. Different organizations can establish different logical blockchains, and data isolation can be realized between the chains. Smart contracts can be deployed on different logical blockchains.

The BUA blockchain system enables users to establish multiple distinct logical blockchains within the same framework, known as multi-chain architecture. Each chain contains a logical structure comprising ledger nodes, consensus nodes, smart contracts, and a transaction ledger. This design isolates participants from data (including smart contracts), thereby implementing differentiated access permissions for different user roles and establishing fundamental requirements for secure data control.

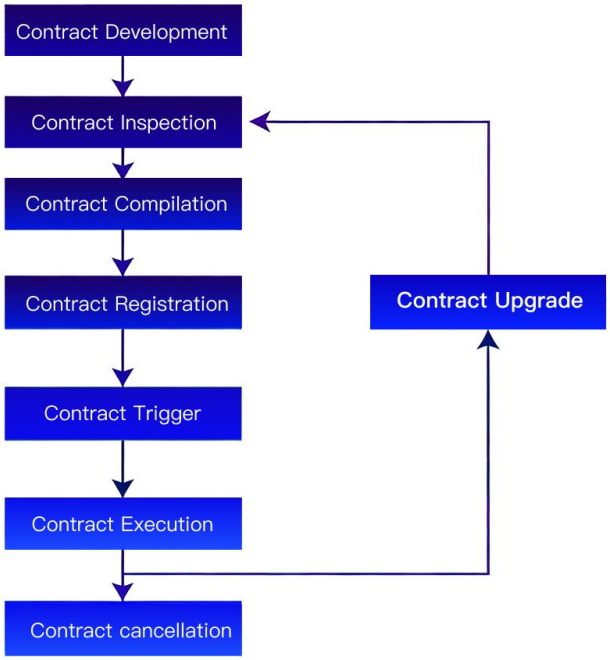


The multi-chain architecture enables the splitting of hotspot chains into parallel chains without requiring additional hardware investment, thereby enhancing parallel processing capabilities. This distributed information isolation approach fully meets users' practical needs for establishing customized blockchain systems tailored to specific business scenarios and participant requirements. It effectively prevents traffic congestion by allowing nodes to communicate exclusively within their own logical blockchains, significantly improving operational efficiency.

2) Contract management

Given that smart contract development constitutes the core functionality of blockchain applications, all blockchain business capabilities revolve around smart contracts to achieve functionalities such as smart contracts, automatic triggering, security isolation, business

definition, and digital protocols. Therefore, smart contracts are the most critical component in blockchain application development, requiring clients to invest significant effort in writing and debugging them. To address this challenge, BUA provides a comprehensive smart contract integrated development and debugging environment, significantly shortening development cycles while reducing development burdens through more efficient software development support. Unlike other platforms, BUA not only performs lexical analysis and syntax checking on smart contracts but also offers specialized security verification services to validate compliance and security, preventing recurrence of incidents like the Ethereum DAO security breach. The following diagram illustrates the lifecycle of a smart contract on BUA's blockchain-as-a-service cloud platform:



3) Zero-knowledge proofs

Zero-knowledge proofs, first proposed by S.Goldwasser, S.Micali and C.Rackoff in the early 1980s [10], enable verifiers to validate assertions without disclosing any useful information. As a robust mechanism for privacy-preserving protocols, zero-knowledge proofs systems are particularly valuable. Let us begin by defining interactive proof systems:

Interactive proof system: A pair of interactive machines <P, V> (where P and V are the prover and verifier respectively) is an interactive proof system for the language L if it satisfies:

• Machine V is polynomial time;

• Completeness (Completeness): For every x in L, there exists an honest prover P such that after interacting with V, P outputs "x in L";

• Soundness: For all x∈L, the probability of outputting "x∈L" after interaction between V and P is minimal. A zero-knowledge proof system can be considered as an interactive proof system that meets the zero-knowledge requirement, which must satisfy the following four attributes:

• The verifier cannot obtain any information from the protocol;

• Provers cannot cheat verifiers;

• The verifier cannot cheat the prover;

• The verifier cannot simultaneously pose as a prover in another zero-knowledge proof system.

Zero-knowledge proofs are particularly well-suited for privacy-preserving business scenarios, with Zerocash being a prime example. As the first blockchain system to implement zero-knowledge proof mechanisms, Zerocash provides full transaction anonymity on top of Bitcoin. It automatically conceals all transaction details — including senders, recipients, and amounts — on the blockchain while enabling selective disclosure of private keys to authorized parties for transaction verification.

Through a highly abstract zero-knowledge proof protocol, BUA provides a zero-knowledge proof security service layer on the underlying of smart contracts and decentralized applications to support the privacy protection needs of BUA data computing, such as zero-knowledge identity authentication and transaction data confidentiality.

4) Homomorphic encryption

The concept of homomorphic encryption was first introduced by Ron Rivest, Leonard Adleman, and Michael L. Dertouzos in 1978, with the first fully homomorphic algorithm not being proven until 2009 by Graeg Gentry. Homomorphic encryption refers to a public-key cryptographic system that maintains its homomorphic properties, allowing computations on ciphertexts to yield identical results. This means that performing computations directly on ciphertexts is equivalent to encrypting plaintext before computation, yielding identical outcomes.

Assuming E(m) represents the encrypted ciphertext of m, if E(a) and E(b) are known, anyone can compute the ciphertext E(a $\oplus$ b) by performing a specific operation. This process can be expressed as E(a) $\otimes$ E(b) (where $\oplus$ and $\otimes$ represent binary operators in the plaintext space and ciphertext space respectively). Thus, the homomorphic property can be generally expressed as: E(a $\oplus$ b) = E(a) $\otimes$ E(b)

Homomorphic encryption encompasses operations such as addition, subtraction, multiplication, and division. When a system fulfills both addition and multiplication homomorphism requirements, it achieves full algebraic homomorphism. This cryptographic approach holds immense significance for the blockchain era. Currently, from a security perspective, users hesitate to directly store sensitive data on blockchain systems for computation. However, with sufficiently practical homomorphic encryption technologies emerging, people can confidently utilize blockchain services without worrying about information leakage.

While current homomorphic encryption technologies — particularly fully homomorphic encryption — still require substantial computational resources and remain far from large-scale deployment, their implementation at the smart contract level holds significant practical value for scenarios with limited data scales and urgent demands. BUA's native support for

homomorphic encryption operators within the OVM infrastructure enables efficient execution of algorithms like Paillier and Benaloh for additive homomorphism, along with RSA and ElGamal for multiplicative homomorphism. This capability facilitates rapid development of privacy-preserving decentralized applications.

In hardware encryption, BUA offers mature solutions with seamless integration of AI systems. These technologies empower financial institutions, insurance companies, and securities firms to securely protect data storage and transmission, enhance encryption/decryption efficiency, and implement robust signature verification mechanisms. The system also ensures secure key management, helping organizations comply with regulatory requirements and graded protection standards. Currently, BUA's hardware encryption supports most mainstream Chinese cryptographic algorithms and international standards including SM1, SM2, SM3, SM4, DES, AES, and RSA.

5) Secure multi-party computing

In traditional computing systems, to complete computational tasks, all participants 'inputs are typically centralized at a single node for processing. While this approach addresses certain challenges, it creates critical security concerns: if no participant can reliably verify the integrity of all inputs, protecting each individual's private data becomes paramount. Such scenarios frequently occur in real-world implementations, such as:

• Alice suspects she might have a genetic disorder. Knowing that Bob maintains a database of DNA profiles containing various diseases, she could naturally submit her DNA samples for diagnosis. However, if Alice prioritizes privacy and refuses to disclose her genetic information or test results, this approach becomes ineffective;

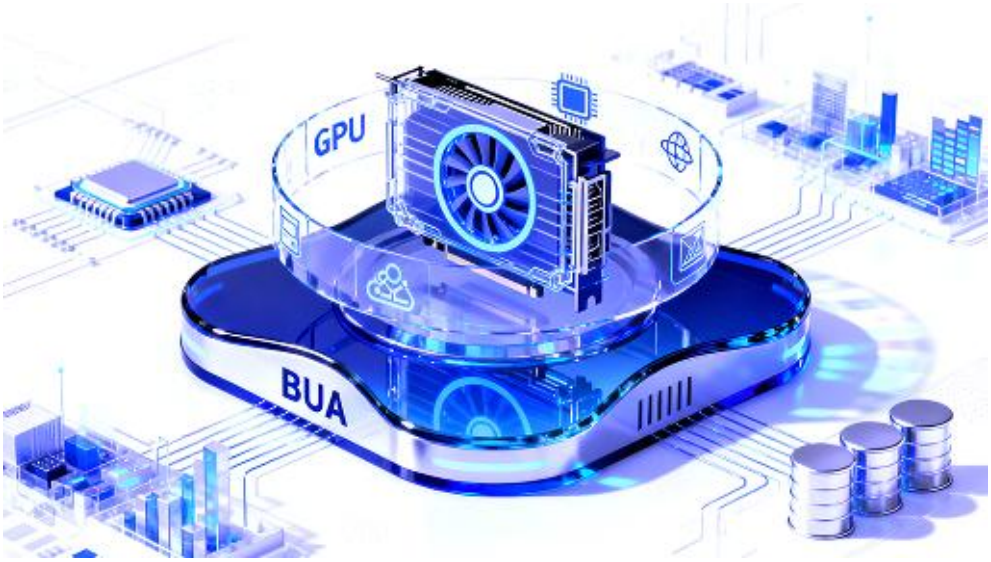
• After conducting market research, Company A decided to expand its market share in certain regions to boost profits. However, they discovered that competitor Company B was also planning similar expansions in those areas. To avoid direct competition, both companies sought to identify overlapping expansion zones while maintaining strict confidentiality about their specific geographic targets. Such leaks could lead to significant losses: Company C might preempt them by securing the same territory first, or real estate developers could raise prices after learning about their interest in specific properties. Therefore, they needed a solution to address this issue while protecting their operational privacy.

The common challenge in these two scenarios is that multiple parties wish to collaboratively compute on their private inputs, yet none are willing to disclose their data. The core challenge lies in executing computations while safeguarding participants' private information. This fundamental problem is known as Secure Multi-party Computation (SMC), a critical challenge in distributed computing.

Proposed by a Turing Award laureate in the 1980s, secure multi-party computation (SMP) primarily aims to enable two or more participants in a distrustful distributed network to collaboratively compute predefined functions without disclosing their private data while obtaining verified results. This technology finds extensive applications across multiple domains including collaborative scientific computing with privacy safeguards, secure database queries, protected data mining, computational geometry solutions, and privacy-preserving data analysis.

Although O. Goldreich, S. Micali, and A. Wigderson proposed secure multi-party computation protocols for cryptographic-secure arbitrary function computation, their applicability is significantly limited due to the extensive use of zero-knowledge proofs and the need for participants to transmit large volumes of data. Therefore, the key to enhancing secure multi-party computation protocols lies in designing customized solutions for specific scenarios. BUA categorizes secure data computation scenarios, abstracts multiple secure multi-party computation protocols into a unified framework, and provides underlying solutions under blockchain computing models, thereby meeting the diverse industry demands for privacy-preserving collaborative data computation.

3.2 Quantum computing: improving computing power



The BUA quantum computing protocol introduces the core application technology of quantum mechanics: quantum computing, to the processing and data of information and data, so as to help the BUA system to process massive information and data efficiently and intelligently.

1) Basic principles

The superposition principle in quantum mechanics allows quantum information to exist as a combination of multiple states, giving quantum information processing a significant edge

over classical methods in terms of efficiency. While conventional computers 'two-bit registers can only hold one of four binary states (00,01,10,11), quantum computers' two-qubit registers can simultaneously store superpositions of these four states. As the number of qubits increases, quantum information can exist as superpositions of 2^n possible states. Combined with the parallel processing capabilities of quantum mechanics, this allows quantum computers to achieve processing speeds far surpassing those of classical systems.

◎ Quantum bits

Qubits form the theoretical foundation of quantum computing. Unlike conventional computers that use binary digits (either 0 or 1) to represent information, quantum computers employ qubits that exist in superposition states. These states are linear combinations of 0 and 1, where both states coexist with equal probability. Through measurements or interactions with external systems, qubits can be measured as either 0 or 1. Any two-particle quantum system qualifies for qubits, including: the ground state and first excited state of a hydrogen atom's electron; the ±1/2 spin components of a proton; and left-and right-hand circularly polarized light.

A quantum system consists of particles that follow the laws of quantum mechanics, existing in specific quantum states within its state space. The state space refers to a vector space composed of eigenstates (fundamental quantum states), also called basis vectors. This space can be mathematically described as a Hilbert space—a linear complex-vecor space that encompasses all possible quantum states. To simplify representation and operations, Dirac introduced the symbolic notation |x〉 for quantum states: the column vector x is denoted as |x〉, while its conjugate t ranspose <x| is represented as the row vector <x|, known as the bra. A superposition state of a qubit can be described using unit vectors in a two-dimensional Hilbert space (i.e., a two-dimensional complex-vecor space).

◎ principle of superposition

Consider quantum particles as electrons in a magnetic field. Electrons may spin with the magnetic field, known as an up spin state, or against it, called a down spin state. If we can flip a down-spin state to an up-spin state using a single energy pulse while eliminating external influences, then applying half that energy pulse would create a superposition of both spins (each occupying a 50-50 probability).

A quantum computer with n qubits can exist in a superposition of 2^n states. The operation process of a quantum computer is called an "unitary evolution," which ensures that every possible state evolves in parallel. This means that if a quantum computer has 500 qubits, each step of quantum computing simultaneously acts on 2^500 possible states. The number 2^500 is staggering—it exceeds the total number of atoms known on Earth.

2) A leap in computing power

In classical physics, physical quantities at a specific moment have definite values, so information units are either 0 or 1 – known as bits. These serve as the fundamental units for computer processing. Transistors in electronic chips represent 1 when conducting current and 0 when not. Quantum physics, however, features uncertainty: physical quantities at any given moment can not be precisely determined. Unlike classical information units that exist as 0 or 1, quantum information units exist as superpositions of states representing 0 and 1 simultaneously – called qubits. Each qubit can represent two classical data points.

Quantum bits are not physically embodied in transistors, but rather exist as physical entities capable of dual states—such as electron spins, photon polarization, or two-level atoms. A quantum bit represents the superposition state of these two states. Different quantum bit states correspond to distinct information representations. Consider an electronic chip with n qubits: each qubit stores classical data as a definite value. In contrast, a quantum chip containing N qubits, where each qubit represents two classical data states, can store 2^n classical data points. This demonstrates that quantum uncertainty inherently enables quantum chips to store 2^n times more data than conventional electronic chips.

Computer operations fundamentally involve modifying data stored on chips, with electronic computers and quantum computers operating in starkly different ways. While traditional computers process data sequentially by altering one piece at a time (known as serial computing), quantum computers can simultaneously transform 2^n classical data points stored on a quantum chip into 2^n new data points per operation. This quantum advantage forms the physical basis for parallel computing capabilities in quantum computers.

The computational efficiency of quantum computers in processing functions depends on their quantum algorithms. By leveraging quantum entanglement, we can develop powerful quantum algorithms that harness the parallel computing power of quantum computers in practical information processing, enabling exponential growth in computational capabilities compared to classical electronic computers. Fundamental properties of the quantum world, such as superposition and quantum entanglement, constitute the core advantages of quantum computing.

The physical roots of energy. Quantum computing not only accelerates computation, but also transforms certain problems that are difficult to solve on electronic computers (such as factoring large numbers) into solvable ones.

3) Upgrade of BUA magnitude calculation

BUA has implemented three strategic upgrades: First, it revolutionized computing architecture by integrating quantum and supercomputing technologies, delivering cloud-edge synergy that seamlessly integrates cloud capabilities at the edge. Second, BUA drives the convergence of computing networks through cloud-network-edge-end collaboration, making computing power readily accessible. Finally, BUA is poised to become a pivotal catalyst for industrial digital transformation.

The BUA will be a bridge between the physical and digital worlds, with the following basic features and attributes:

• Connectivity: As the foundation of BUA, connectivity supports diverse physical devices and application scenarios through comprehensive integration capabilities, including network interfaces, protocols, topologies, deployment configurations, and management maintenance. Leveraging cutting-edge network technologies like Time-Sensitive Networking (TSN), Software-Defined Networking (SDN), Network Functions Virtualization (NFV), Network as a Service (NaaS), Wireless Local Area Networks (WLAN), Narrowband Internet of Things (NB-IoT), and 5G, BUA also ensures seamless interoperability with existing application buses.

• The first entrance of data: As a bridge from the physical world to the digital world, BUA is the first entrance of data. It has a large amount of real-time and complete data, and can manage and create value based on the full life cycle of data, which will better support innovative applications such as predictive maintenance, asset management and efficiency improvement.

• Distributed: BUA supports distributed computing and storage, realizes dynamic scheduling and unified management of distributed resources, supports distributed intelligence, and has distributed security capabilities.

• Integration: The integration of OT and ICT is a crucial foundation for industry digital transformation. As the key carrier of "OICT" integration and collaboration, BUA will support coordination in connectivity, data, management, control, application, and security.

The greatest value of BUA lies in its potential to transition from the Internet of Everything to a Trust of Everything, transforming human-to-human trust into data-to-data trust. By adopting peer-to-peer communication for data transmission instead of relying on central processing units (CPUs), quantum computing can significantly reduce operational and maintenance costs. Furthermore, BUA's transparency enables full utilization of the computing power, storage capacity, and bandwidth from billions of idle devices distributed across different locations for transaction processing, thereby substantially lowering computational and storage expenses.

3.3 Machine learning: algorithm training and model

Machine learning empowers computers to learn from research data and statistical information. Artificial intelligence, however, represents a grand vision aiming to make machines think and act like humans. This encompasses both cognitive enhancement and physical empowerment for humanity. While learning serves as one approach to achieving AI, it remains just one method to boost human intelligence. Therefore, artificial intelligence inherently includes machine learning, which in turn encompasses deep learning.

Specifically, machine learning and its branches—deep learning and neural networks—are subsets of artificial intelligence. Artificial intelligence makes decisions and predictions through data processing. With machine learning algorithms, AI not only processes data but also learns from it without requiring additional programming, thereby becoming smarter. Artificial intelligence serves as the parent category that encompasses all subsets of machine learning. The first subset under artificial intelligence is machine learning, which includes deep learning as a branch. Neural networks form the foundational architecture of deep learning.

1) How machine learning works

Machine learning encompasses various models employing different algorithms. Based on data characteristics and desired outcomes, these models fall into four categories: supervised learning, unsupervised learning, semi-supervised learning, and reinforcement learning. Depending on the dataset and target results, each model may utilize one or multiple algorithms. These algorithms primarily classify objects, identify patterns, predict outcomes, and enable informed decision-making. While typically using a single algorithm at a time, complex or unpredictable data may require combining multiple algorithms to maximize accuracy.

Machine learning works in the following steps:

• Data collection: Machine learning requires a large amount of data to analyze and learn. This data can come from various sources, such as sensors, logs, databases, text, and images.

• Data preprocessing: Data often needs to be processed and cleaned, such as removing noise, filling in missing values, normalizing or standardizing. These preprocessing steps can help the algorithm better understand the data.

• Feature extraction: Features are useful information extracted from raw data that can be used for prediction or classification. For example, in image classification problems, features can be the color or shape of pixels.

• Model training: Machine learning algorithms are trained based on the features provided in the data set to build models. Models can be classifiers, regressors, clusterers, etc. The goal of the model is to be able to accurately predict unknown data.

Model evaluation: The performance of a model is usually measured by indicators such as accuracy, precision, recall and F1 value. These indicators can help evaluate the quality and effectiveness of a model.

• Model deployment: Once a model has been trained and evaluated to achieve the desired performance level, it can be applied to new data sets for predictions. Models can be deployed in various forms, such as APIs, applications, real-time streams, etc.

2) BUA machine learning model

The BUA Machine Learning Model Suite integrates AI algorithms, models, training, and inference capabilities. By accessing sample data required for model construction and training, it establishes data preprocessing, large-scale distributed training, automated model generation, and on -demand deployment of edge-cloud models. This supports rapid development, training, deployment, and application of AI models, achieving full-cycle management of the AI model workflow.

The core functions of the BUA machine learning model include:

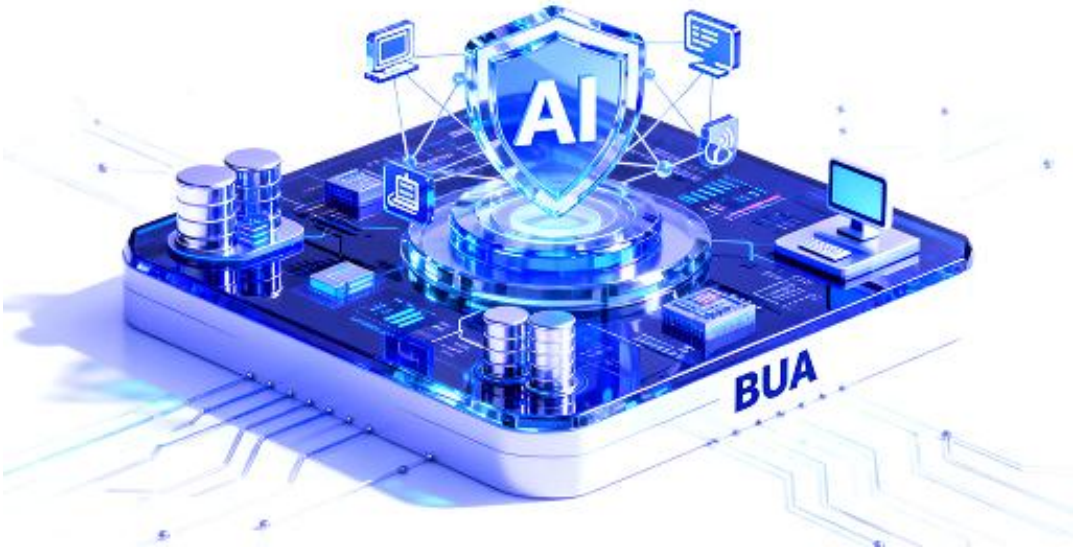
• Full life cycle management: For the models already built by BUA, it provides full life cycle management for model versions, which can be released and deployed to application systems with one click, realizing rapid release, upgrade and iteration of models.

• Support for multiple training modes: BUA supports both online and offline training modes, which can meet the needs of enterprise AI model construction under different data conditions. Through external data import or online access to real-time data such as production process and enterprise operation, the model can be automatically trained and built.

• Built-in multi-class learning frameworks: BUA is built with a variety of high-performance machine learning frameworks, with full-stack capabilities for building AI models such as supervised learning, unsupervised learning, reinforcement learning, and transfer learning.

BUA supports various machine learning approaches including supervised learning, unsupervised learning, online incremental learning, and deep learning. Its highly flexible architecture enables both built-in algorithms and third-party model integration. By leveraging third-party models, it maximizes the aggregation of expert knowledge, liberating human resources through BUA's computing power to comprehensively enhance production efficiency. The platform features a one-stop management system for over 3,300 data inference AI models, 150+ graphics and image AI models, and AI models, driving sustainable growth in the computing industry.

3.4 AI computing power network



Supported by blockchain technology, smart contracts, cross-chain, quantum mechanics and machine learning, BUA has built a decentralized AI computing power network.

The BUA decentralized AI computing power network has the following core features:

• Decentralization: BUA adopts a decentralized architecture that operates independently of any single entity or institution. Both computing power providers and consumers can directly transact on the platform, eliminating intermediaries and unnecessary brokers to achieve more efficient and secure trading of computing resources.

• Transparency and Traceability: All computing power transactions and settlements are recorded on the distributed ledger, automatically executed through smart contracts to ensure transparency and traceability. Users can accurately understand the details of each transaction and monitor and audit the transaction process.

• Fair Competition: BUA encourages computing power providers to supply high-quality resources while ensuring a fair competitive environment. Through smart contract mechanisms and algorithmic design, it enables demand-side users to select the most suitable providers,

thereby promoting equitable resource allocation.

• Flexibility and Scalability: BUA offers exceptional flexibility and scalability, adapting to varying scales and complexity of computing needs. Whether for small-scale personal projects or large enterprise computing tasks, BUA provides the required computing resources to achieve fast and efficient processing.

• Incentive and Reward Mechanism: BUA encourages community members to participate in the development and governance of the computing power network. Both computing power providers and consumers can receive corresponding rewards and incentives by participating in computing power transactions and contributing to community development, thereby promoting the stability and growth of the computing power network.

1) Computing power supply and contributors

In the decentralized AI computing power network of BUA, computing power providers play a key role. They are participants who provide computing power resources and contribute to the normal operation and development of the network. The following is a detailed description of computing power supply and contributors:

• Computing power resource provision: Computing power providers can rent or sell their idle computing power or dedicated hardware to computing power demanders. They can connect their servers, GPUs, ASIC servers and other heterogeneous computing power devices to BUA, and provide reliable computing power resources for other users to use.

• Computing Power Contribution: Computing power providers not only supply resources but also actively participate in the development and construction of computing networks. They engage in node operations, validation processes, and security maintenance to ensure network stability and safety. Additionally, they contribute technical support and community development efforts to drive innovation and growth within the computing network ecosystem.

• Incentive Mechanism: To motivate the participation and contribution of computing power providers, BUA has established an incentive mechanism. Computing power providers can receive computing power tokens (BUA) as rewards based on the quality and usage of their provided computing resources, which can be freely used, transferred or cashed out by the providers.

• Competition in the computing power market: Within the BUA ecosystem, providers compete for demand through their computing capabilities, pricing strategies, and service quality. By delivering premium resources and exceptional support, these providers can secure more orders and generate greater revenue.

• Computing Power Stock Ownership and Governance: Computing power providers may choose to hold computing power tokens (BUA) and convert them into BUA-issued computing power shares, thereby becoming shareholders of BUA. As shareholders, they gain voting rights and proposal rights to participate in BUA's governance decisions. They can contribute to formulating BUA's rules and policies, driving the development and improvement of BUA.

Through the active participation of contributors and robust computing power supply, BUA's decentralized AI computing network will establish a comprehensive and reliable ecosystem for computational resources. The contributions from computing power providers will drive BUA's stability and growth, enabling users to access enhanced computing solutions while fostering innovation and development in the digital economy.

2) Management and scheduling of computing power network

The management and scheduling of BUA decentralized AI computing power network is realized through smart contracts and distributed algorithms, which are characterized by automation and decentralization:

• Node Registration and Verification: Before joining the BUA, computing nodes must complete identity verification and registration procedures. This process is implemented through smart contracts to ensure node legitimacy and security. Upon successful registration, nodes' identities and computational capabilities are recorded on the blockchain.

• Task Distribution and Scheduling: When computational tasks are submitted to BUA, the smart contract dynamically allocates and schedules them based on factors such as task type, requirements, and node computing capacity. Tasks are dispatched to the most suitable computing nodes for execution, ensuring efficient processing and optimal resource utilization.

• Node Status Monitoring and Management: The BUA system continuously monitors and manages the status of computing nodes. Through smart contracts and node health detection algorithms, it provides real-time monitoring of node health, computational capacity, and resource utilization. If a node experiences failure or reduced computational capacity, the network automatically redistributes tasks to other available nodes.

• Dynamic Resource Adjustment: BUA dynamically adjusts resources based on real-time computational demands and resource availability. Through smart contracts and distributed algorithms, the network intelligently allocates computing resources according to node capabilities, workload, and task priorities, ensuring efficient task execution.

• Fault Recovery and Failover Mechanism: When a node fails or a computational task fails, BUA features a robust failover mechanism. Other operational nodes can automatically take over tasks from the failed node while performing data backup and disaster recovery procedures, ensuring the reliability and stability of the computing power network.

Through this management and scheduling mechanism, BUA's decentralized AI computing network enables efficient task distribution and scheduling, optimizes the utilization of computing resources, and enhances overall computational efficiency. Meanwhile, the decentralized management approach ensures fairness, transparency, and security within the computing network.

3) Security and privacy protection of computing network

BUA decentralized AI computing network focuses on security and privacy protection, and adopts multiple technical means to ensure the security of user data and computing tasks:

• Data Encryption and Privacy Protection: At BUA, all communications and data transfers are encrypted using advanced encryption algorithms to prevent data theft or tampering. User data is protected during transmission, with only authorized nodes permitted to access and process it. Furthermore, users' private information is rigorously safeguarded against sharing or leakage.

• Access Control and Authentication: In BUA, all nodes must undergo authentication

before participating in computational tasks and data processing. Through smart contracts and authentication mechanisms, only authorized nodes can join the network and access their designated data and resources. This access control system ensures network security by preventing malicious node infiltration and unauthorized data access.

• Audit and Monitoring: BUA conducts regular security audits and monitoring to identify potential security risks and vulnerabilities. By utilizing advanced security monitoring tools and technologies, the network can detect and respond to potential threats in real time, ensuring its security and stability.

• Smart Contract Security: In BUA, smart contracts serve as the core security component. Through prudent contract development and rigorous security audits, we ensure their safety and reliability. During execution, the network performs verification and authorization to prevent malicious code injection and execution.

• Quantum Encryption Technology: BUA employs quantum encryption technology to enhance security. By leveraging principles of quantum physics, this advanced method provides superior data protection. Through the use of quantum encryption algorithms and key exchange protocols, it effectively prevents quantum computing attacks and decryption attempts.

Through these security and privacy protections, BUA's decentralized AI computing network ensures the safety of user data and computational tasks while safeguarding privacy. Users can confidently utilize the computing network for tasks without worrying about data breaches or security risks.

4) Scalability and interoperability of computing networks

The BUA decentralized AI computing network has a high degree of scalability and interoperability, enabling it to adapt to changing computing needs and seamless integration with other systems:

• Scalability: BUA is based on a distributed computing architecture, allowing the easy addition of new computing nodes when needed. This scalability allows the computing network to flexibly adjust the scale of computing resources according to actual needs to meet growing computing demands.

• Elastic Computing: BUA employs an elastic computing model that automatically allocates and adjusts computing resources based on task scale and complexity. By dynamically distributing computing nodes and resources, the computing network achieves efficient task processing and resource utilization, thereby enhancing overall computational efficiency and performance.

• Interoperability: BUA supports seamless integration with other systems and platforms. Through open APIs and standardized data formats, the computing network can seamlessly connect with various computing environments and applications. This enables users to integrate the computing network with existing systems and tools, achieving more flexible and efficient computational workflows.

• Cross-platform Compatibility: BUA delivers seamless cross-platform support, operating across various operating systems and hardware environments. Whether in the cloud, edge devices, or private data centers, the computing network consistently provides consistent services and functionalities. This cross-platform compatibility allows users to choose the optimal computing environment tailored to their specific needs.

• Standardization and Openness: BUA adheres to open standards and protocols for interoperability with other systems and services. By utilizing standardized data formats and communication protocols, the computing power network can integrate with various third-party tools and services, enabling broader application scenarios and collaboration opportunities.

Through these features of scalability and interoperability, BUA decentralized AI computing power network can meet the needs of different users and applications, while achieving seamless integration with existing computing environments and systems, providing users with efficient, flexible and scalable computing power services.

5) Computing power demanders and application scenarios

The decentralized AI computing network (BUA) is widely applied in artificial intelligence, scientific computing, blockchain, and big data analytics. In AI applications, it facilitates the training and inference of deep learning models, accelerating their development and deployment. For scientific computing, it delivers robust computational power to expedite solutions for complex problems. In blockchain and big data analysis, the network handles large-scale data processing and mining operations, delivering more accurate and efficient analytical outcomes.

Through these technical solutions, BUA's computing power network can provide high performance, secure and reliable, flexible and scalable computing power to meet the needs of different fields and promote the development of artificial intelligence and scientific computing.

◎ Artificial intelligence application scenarios

• Training deep learning models: The training process of deep learning models requires a large amount of computing resources and time. Those who need computing power can use the high-performance computing resources of BUA to accelerate the training process of deep neural networks, shorten the training time of the model, and improve the accuracy and performance of the model.

• Image Recognition and Processing: As a pivotal application in artificial intelligence, image recognition requires processing massive image data and performing complex computations. Organizations seeking computing power can access high-performance resources

from BUA for tasks including image recognition, image segmentation, and object detection, enabling more accurate and efficient image processing.

• Natural Language Processing (NLP): As a pivotal application in artificial intelligence, NLP encompasses tasks such as text analysis, semantic understanding, and machine translation. These operations require processing massive text datasets and performing complex computations. Organizations with computational demands can leverage BUA's high-performance computing resources to accelerate NLP processes, thereby enhancing both the accuracy and efficiency of text analysis and comprehension.

• Reinforcement Learning: As a machine learning approach that optimizes decision-making through environmental interaction, reinforcement learning typically requires extensive simulation and experimentation to train intelligent agents. Organizations with computational demands can leverage BUA's robust computing resources to accelerate the training and optimization of reinforcement learning models, enabling faster intelligent decision-making.

• Generative Models: Generative models such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) require substantial computational resources for training and generating new data samples. Those seeking computing power can access high-performance resources through BUA, enabling the training and generation of these models to drive innovation and development in fields like image-to-text translation and generative modeling.

By leveraging BUA, users in the AI field can fully utilize high-performance computing resources to accelerate model training, inference, and optimization processes, thereby enhancing the efficiency and performance of AI applications. Users can select appropriate computing resources based on their specific needs and leverage the elasticity and flexibility of the computing network to meet diverse task requirements.

◎ Other application scenarios

• Scientific Computing and Research: Scientific research often involves complex numerical calculations, simulations, and data analysis. Those seeking computing power can leverage BUA's high-performance computing resources to accelerate the execution of scientific computing tasks and advance research in fields such as astronomy, climate modeling, genomics, and beyond.

• Financial and Risk Modeling: The financial industry requires processing massive data volumes while conducting complex risk modeling and predictive analysis. Through BUA, users can access high-performance computing resources for financial data analytics, portfolio optimization, risk assessment, and other critical tasks, thereby enhancing the accuracy and efficiency of financial decision-making.

• Blockchain and Cryptocurrency: Blockchain technology requires substantial computing resources to support tasks such as maintaining distributed ledgers, cryptocurrency mining, and transaction verification. Those seeking computational power can utilize BUA's high-performance computing resources to participate in the consensus mechanism of blockchain networks, thereby enhancing the security and stability of the blockchain ecosystem.

• Big Data Analytics and Processing: With the continuous growth of data volumes, big data analytics and processing have become increasingly vital. By leveraging BUA's high-performance computing capabilities, users can accelerate large-scale data processing, analysis, and mining to uncover hidden patterns and insights, thereby providing robust support for

business decision-making.

• Virtual Reality and Game Development: Virtual reality and game development require robust computing power to achieve realistic graphics rendering, physics simulations, and interactive experiences. Organizations with computational demands can leverage BUA's high-performance computing resources to accelerate the development process, delivering more immersive virtual worlds and gaming experiences.

By delivering high-performance computing resources and flexible computing capabilities, BUA provides a reliable platform for users across various industries seeking computational power. This initiative fosters innovation, enhances operational efficiency, and drives technological advancement. Users can select appropriate computing resources based on their specific needs, fully leveraging the advantages of the computing network to achieve success in diverse application scenarios.

Chapter IV Design of Token Economic Model

4.1 Token economics

The BUA economic model is built on the Computing Power Token (BUA), which facilitates collaboration and competition among multiple stakeholders including computing power providers, demanders, algorithm developers, and SAFTEU investors within the network. This creates an open, adaptive, intelligent, and sustainable global AI model development and trading ecosystem for computing power sharing and collaboration. The Computing Power Token BUA serves the following functions:

• Media exchange: used to pay for computing power services and data services, as well as to purchase or redeem AI applications and rewards.

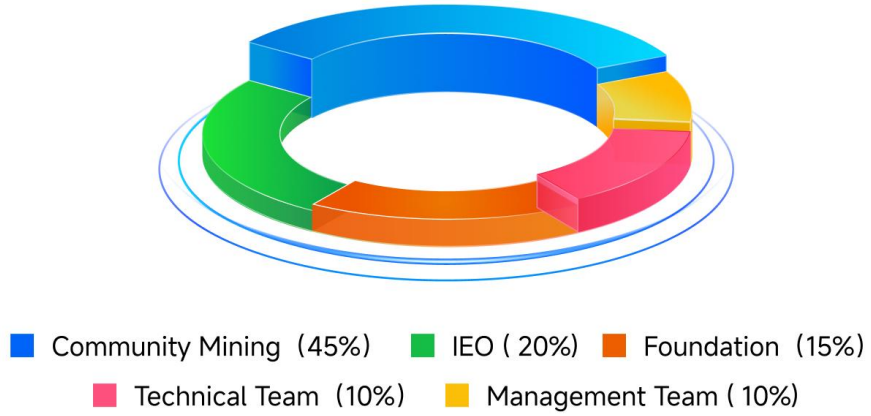
• Incentive mechanism: used to reward the contributions of participants such as computing power providers, AI developers, data providers, etc., and to punish dishonest or malicious behaviors.

• Governance rights and interests: used to participate in the construction and governance of the network community, such as voting, proposal, entrustment, etc.

The BUA offering is as follows:

Total issued: 500 million

allocation plan ：



The BUA token offers enhanced liquidity and value growth potential. As the universal credential of the BUA network, the BUA token provides diverse application scenarios and monetization opportunities while also delivering significant investment value.

4.2 Token Governance Model

Deeds of Right bring decentralization and community participation. The core logic can be summarized as follows. You may see similar ideas in other networks, especially Cosmos and EOS.

• Token holders, including validators, can stake their tokens as "bonded" (guaranteed). They may delegate their tokens to any validator or validator candidate, anticipating it might become a legitimate validator. Subsequently, they can choose different validators or candidates to re-delegate their tokens.

• All candidate validators will be ranked according to the number of tokens they bind to, and the top ones will become real validators.

• The verifier may share (partially) their blocking rewards with their client.

• Verifiers may suffer from "Slashing", which is a punishment for their bad behavior, such as double signing and/or instability.

• The verifier and the client have a "release period" so that the system ensures that the token remains bound in case of bad behavior, during which time the person in charge will be forfeited.

1) reward

Both validator updates and reward distributions occur daily around UTC 00:00 to minimize the costs of frequent stake updates and block rewards. These costs can be substantial, as blocking rewards are collected on-chain and distributed to BUA validators and delegates. To ensure fair distribution, deliberate delays are intentionally introduced here:

• Block rewards are not sent to validators immediately, but are allocated and accumulated in

the contract;

• When the BUA receives an update to the validator set, it will trigger several cross-chain transfers that transfer rewards to the custodial addresses of the corresponding validators. The custodial addresses belong to the system and therefore cannot be used for rewards until they are committed to the delegatee.

• In order to simplify synchronization and allocate time for slashing, the N-day reward will be allocated only on N+2 days. After the trustee receives the reward, the remaining will be transferred to the validator's own reward address.

2) Slaughter

Reductions are part of on-chain governance to ensure penalties for malicious or negative actions. Anyone can submit a BUA slash. While transaction submissions require slashing evidence and incur costs, successful ones also bring greater rewards. To date, there have been two cases of reductions implemented.

3) Double standards

When validators sign multiple blocks with identical heights and parent blocks, this constitutes a critical security breach that is likely intentional misconduct. The reference protocol implementation should inherently contain safeguards against such scenarios, meaning only malicious actors could trigger this condition. Upon detecting double signatures, the validator must be immediately removed from the validator set. Any valid request containing BUA signature evidence – which must include two parent blocks with identical heights and be authenticated by the offending validator – should be processed. When validating the evidence, if it proves valid:

• The instance BUA validator set updates cross-chain updates, removing validators from the validator set;

• A predefined number of BUA will be deducted from the verifier's self-delegation; neither the verifier nor its delegate will receive a pledge reward.

• A portion of the slashed BUA is allocated to the submitter's address, which is a reward greater than the cost of submitting a slash request transaction

• The forfeited BUA will be distributed to the custodial addresses of other validators and to all delegates in the same manner as the blocking reward.

4) Not available

The BUA's operational efficiency depends on proof-of-stake validators ensuring timely block production when their turn arrives. However, validators may experience delays due to hardware failures, software malfunctions, configuration errors, or network disruptions. Such operational instability can compromise performance and introduce additional uncertainty into the system.

An internal smart contract can be deployed to track each validator's missed block validation milestones. When a milestone exceeds predefined thresholds, validators' block validation rewards will not be forwarded for distribution but instead shared with more efficient validators. This mechanism gradually removes underperforming validators from the validator pool through reduced or zero rewards for their delegates. If a milestone still surpasses higher-level thresholds, the validator will exit the rotation process. The system then propagates this decision back to BUA (Block Validation Authority), which subsequently reduces the predefined number of validators in self-delegated BUA. Both validators and delegates will receive no staking rewards.

5) Control parameters

There are many system parameters that can control BUA's behavior, such as Slash amounts and cross-chain transfer fees. All of these parameters will be collectively determined by the BUA validator set through a proposal voting process based on their staking.

4.3 Value and realisation

1) Investment value

The investment value of BUA tokens is mainly reflected in the following aspects

- Huge Market Potential: With the accelerating pace of technological innovation, computing power has become both a new engine for the digital economy and a strategic focal point in competition. As a global AI computing network enabling shared collaboration, BUA Network has seized the opportunities of our era. Leveraging its technological leadership and market advantages, it continues to unlock and enhance value potential.

- Strong Supply-Demand Dynamics: BUA represents scarce and valuable computing resources whose value fluctuates with market supply-demand. When demand outstrips supply, BUA's value rises; when supply exceeds demand, it falls. Market trends indicate that computing power will remain in short supply for the foreseeable future, driving sustained growth in BUA's value.

• Multi-Party Benefit Sharing: By holding BUA tokens, investors not only gain access to computing power services and data services that deliver convenience and benefits, but also participate in the governance and development of the BUA network. Through voting, proposal submissions, and feedback mechanisms, they can influence the network's direction and rule-making processes, thereby benefiting from value growth. Additionally, BUA tokens can be converted into computing power shares, enabling capital market appreciation through value multiplication.

2) Cash realization channels

There are three main ways to monetize a BUA token:

• Project-Backed Recycling: To maintain the scarcity and stability of BUA tokens, BUA will periodically withdraw and burn a specific number of BUA tokens from the market. These recovered tokens will be exchanged at market value for holders 'cash income. This mechanism ensures a gradual reduction in the token's circulation while steadily increasing its value.

• AI Computing Power Market Trading: BUA facilitates massive computing power transactions across multiple domains including artificial intelligence, big data, quantum computing, and blockchain. Users holding BUA tokens can buy or sell various computing services and data services in the market, enabling liquidity and value conversion of their BUA holdings.

• Conversion to Computing Power Stocks: In the future, BUA will be listed on the exchange and issue the world's first computing power-based stock——. Users holding BUA tokens can convert them into computing power stocks at a certain ratio, enjoying value multiplication in the capital market.

4.4 Site incentives

In the early stages, we will distribute BUA tokens through airdrops and rewards to boost fan engagement. Within the BUA ecosystem, token holders gain access to multiple benefits including asset appreciation, fee deductions, value growth, profit rebates, governance oversight, and voting rights. The BUA token rewards system incentivizes users who contribute to network liquidity. This reward mechanism not only rewards community members but also enables them to enjoy various community privileges by holding BUA tokens.

At the launch of BUA token on exchanges, we conducted multi-channel promotions through Kol, media coverage, and influencer partnerships to encourage registration and earn tokens. Partner recruitment campaigns and transaction fee reductions were implemented alongside community-building initiatives. Through expert-led community management, comprehensive outreach programs, lottery draws, and Q&A giveaways, we demonstrated BUA's commitment to global evangelists and newcomers with our relentless drive for innovation.

Furthermore, following the launch of BUA tokens, their acquisition and incentive mechanisms in circulation scenarios will continue to evolve. BUA tokens can be obtained through official task rewards, data resource incentives, or by purchasing/interacting with secondary assets. Moving forward, BUA tokens will serve as digital equivalents for usage across BUA's global business ecosystem, granting holders exclusive benefits in specific projects. Specifically, accumulating a certain number of BUA tokens entitles users to

dividend distributions, though it should be clarified that BUA tokens are not considered a specific investment product.

4.5 Token circulation example

1) AI app circulation

In the process of ai application development and service, BUA tokens will be used in the following three situations:

• Developer testing: Developers will consume some tokens for model training during the test. Depending on how many tokens are paid, the training time required to train the model will be reduced by 50% or 90%.

• Use of Dapp: Dapp can be set up by developers as a paid app, where users must pay tokens to use these AI services, such as an app that predicts the trend of digital currency.

• Purchase of AI training services: When third-party organizations use AI training services to obtain more refined models, they may be required to pay training fees to retrain the models. BUA tokens are the payment currency.

3) User scenario circulation

• Trading: Quantitative trading has long utilized machine assistance. Analysts employ various quantitative models, design metrics, analyze data distributions, and treat machines as computational tools. With the recent rise of machine learning, data can now be rapidly analyzed, fitted, and predicted in massive volumes, enabling more accurate predictions of financial product trends. However, these models require substantial artificial intelligence computing power. Under traditional approaches, each trading department would need to establish its own data center. Shared computing capabilities eliminate costly maintenance expenses, allowing financial trading firms to focus more on predictive analysis itself. BUA tokens could serve as a payment medium for quantitative trading.

• Artificial Intelligence Learner Program: Colleges and universities are starting to offer artificial intelligence courses, a trend that will continue in the coming years

As blockchain technology becomes increasingly prevalent, students now predominantly handle small-scale tasks locally while executing time-intensive operations in school computer labs. These fragmented computational demands can be effectively addressed through blockchain-powered cloud computing solutions. Cost-effective AI computing services prove particularly suitable for students to complete various mathematical exercises and rapidly refine their models. The BUA token serves as a payment intermediary for AI learning initiatives.

• Entity circulation: BUA tokens will also be circulated in a wider range of applications, such as smart cars, AI robots, intelligent manufacturing, smart energy, unlimited home entertainment, connected drones, social networks, AI assistance, etc. In the application ecosystem, BUA tokens will be circulated as the only value token.

4) Cross-chain ecological circulation

Through cross-chain interoperability with mainstream public chains like Ethereum, BSC, and EOS, BUA enables higher-value applications of its token across major platforms

and multi-chain scenarios, facilitating exchange and circulation between BUA tokens and fiat currencies. Furthermore, BUA serves as a bridge to fully integrate with mainstream exchange ecosystems, supporting various transactional functions including payments, transfers, fiat currency trading, deposits, withdrawals, voting on token listings, STO gateways, token distribution, lending services, charitable initiatives, gaming, and e-commerce within exchange environments.

In the future, in the landing model of BUA, BUA tokens can be used for:

- Encourage users to participate in the BUA network for asset transactions, obtain transaction fees and notarization fees, jointly maintain the security of BUA network, and reward transaction nodes and notarization nodes to support mining;

- As a measure of equity, support various consensus in the early stage to achieve the consensus system of BUA tokens;

- Support the BUA ecosystem to implement advanced smart contracts, avoid the breakdown of network performance caused by the execution of "logic bomb" contracts, and provide anti-fraud mechanisms;

- Give full play to the basic currency function of BUA ecosystem, and provide the corresponding Token characteristics and asset liquidity foundation for DApp sub-currency;

- As a hosted target, realize product management of BUA DApp and improve the visibility and exposure of DApp products.

The BUA protocol is designed to meet diverse business needs, enabling seamless data sharing across enterprise ecosystems. Its standardized data recording mechanism supports both structured and unstructured information formats, while accommodating cross-chain requirements as business operations expand globally. This universal architecture forms the foundation for the BUA token's value proposition, allowing it to circulate effortlessly through industries and scenarios worldwide.

Chapter V Supporting ecological construction

To meet the market demand, BUA's supporting ecological applications will cover digital identity (DID), digital wallet, trading platform, digital rights confirmation, etc., aiming to provide comprehensive support for the extensive application of AI.

5.1 Digital Identity (DID)

Digital Identity (DID) provides secure, decentralized authentication for AI applications. Through DID technology, users gain high-security identity verification and access to BUA, obtaining a unique digital human identity.

The value of DID to BUA:

• DID helps to build BUA digital person: Join BUA to create an identity through DID technology to achieve a unique identity. From the identity tag to another you with thousands of expressions (exclusive digital person) all rely on DID technology.

• DID is applied in a variety of scenarios of BUA: In the digital identity authentication, digital wallet, digital asset trading and other scenarios of BUA, DID technology is needed to verify identity and improve scenarios without disclosing sensitive personal information.

• DID is the digital economy portal of BUA: In the digital economy form of BUA, DID also has broad space to play and can provide more services and scenarios.

5.2 Digital Wallet

We will launch the digital wallet —— BUA wallet

The BUA digital wallet enables secure storage, exchange, management, and payment of cryptocurrency. Designed for user-friendly operation, it utilizes Secure Private Wallet (SPV) technology accessible via web interfaces. The wallet employs SSL protocol and supports Symantec Certificate Authority (CA) certification. It also offers dual compatibility with both cold and hot wallets.

• Cold wallet: A wallet suitable for large amounts of digital currency. The public and private key pairs are generated offline. Users can generate any key pair they like. After the key is selected, they can provide the public key starting with G to accept large amounts of digital currency, and keep the private key information starting with S in their own custody.

• Hot Wallet: Designed for small-scale digital currency transactions, hot wallets use custodial keys. When users register an account, their payment password encrypts the generated private key locally on their computer using 3DES encryption, then securely stores the encrypted result in the wallet's cloud via SSL protocol. This ensures that all transmitted and stored hot wallet key information is encrypted data, making the original private key inaccessible to anyone except the user. To sign transactions, users retrieve the custodial private key from the wallet's cloud server. After entering their payment password, they decrypt the content locally. The local wallet program then digitally signs the transaction using the private key and submits it to the BUA Digital Wallet Network for processing.

1) Multiple security verifications

In addition to allowing users to hold their own wallet keys and private keys, BUA digital wallet also provides multiple signature technology guarantee and two-step authorization verification for digital currency management of different sizes. In addition, users can carry out mobile phone verification code, fingerprint, face recognition and other verification methods during transfer transactions to ensure the security of digital currency in an all-round way.

2) Dual wallet app

In order to facilitate user use, BUA digital wallet has two forms of cloud wallet and local wallet, and users can freely choose the wallet they need.

• Cloud Wallet: Transfers between cloud users are credited within seconds with no fees. The private key is stored by the cloud to store user addresses and transaction records, ensuring the wallet does not touch user assets. Users can recover their cloud accounts through username,

password, and facial recognition verification methods.

• Local wallet: Users hold their private keys, making digital currency more secure. Users can derive any number of sub-accounts (i.e., sub-public keys) from the master public key to add multiple wallet addresses for each digital currency in the local wallet, facilitating asset separation.

5.3 Trading platform

BUA will develop an AI model development and trading platform powered by quantum computing technology. The platform aims to provide comprehensive services for AI model development, deployment, trading, and management while streamlining the entire lifecycle of AI models — from creation and testing to commercialization. This initiative empowers developers, businesses, and researchers to harness AI technologies more effectively.

Traditional digital computers often face limitations in processing complex problems and large-scale datasets due to their computational capacity and speed. Quantum computers, however, leverage their unique parallelism and superposition properties to accomplish tasks that traditional systems struggle with in short timeframes. This enables BUA's AI large model to be trained and learned on larger, more complex datasets, thereby enhancing its accuracy and generalization capabilities. For instance, quantum computing demonstrates distinct advantages in solving combinatorial optimization and high-dimensional search problems — common challenges in machine learning. Through quantum computing, the BUA model can efficiently explore vast solution spaces, identifying better model parameters and architectures while improving both generalization ability and prediction accuracy.

Furthermore, BUA will establish a capital market for AI applications, providing funding and credibility support to outstanding AI projects to enhance their market influence. The BUA trading platform is an AI project investment system designed for global investors, enabling individual users, institutional clients, traditional funds, companies, and other entities with aspirations in the AI market to participate conveniently. Built on a DAO governance model, this platform serves as a global AI asset management and trading system. Through decentralized operations, tamper-proof mechanisms, and smart contracts, BUA's investment management framework fundamentally resolves issues such as project registration, transfer, investment, and fund flow tracking. This approach reduces investment costs while improving efficiency.

1) System composition

The BUA Trading Platform comprises two core components: an AI project investment marketplace and an AI project equity trading platform. By leveraging EIS's original data verification system and DAO node voting tools, it integrates third-party institutions specializing in AI project valuation, credit rating, risk pricing, information disclosure, transactions, and investment management. This creates a collaborative ecosystem that combines global AI project curation, equity trading, node voting mechanisms, and investment fund operations.

The AI Project Investment Marketplace is staffed with professional institutions including auditors, legal experts, asset appraisers, and industry-specific due diligence specialists. These entities are responsible for screening and evaluating community projects, providing registration and management services for newly listed projects, issuing professional project reviews and valuation reports, and establishing a professional, visual, user-friendly, and secure AI project investment registration and management system. Additionally, the marketplace features an EIS (Electronic Information System) for project information certification. Through multi-layer encrypted data storage across the underlying blockchain layer and business application layer, it

ensures that certified data remains inaccessible to unauthorized users, as no one can decrypt and access the original data.

The BUA trading platform employs CA certificates to authenticate business data sources, ensuring verification of original data authenticity. For real-time transmitted data, we generate synchronized evidence documents and store digital fingerprints on the blockchain. BUA implements asymmetric encryption for data transmission across the platform, guaranteeing secure network communication. In the AI project equity trading platform, both equity transferors and investors can freely register and transfer ownership rights.

2) Transfer process

• Project due diligence: The equity transferor of the AI project investment purchases the platform coin (BUA token) on the exchange, conducts the transfer registration in the AI project investment market, sets the transfer conditions, and pays the audit, legal and industry professional due diligence institutions with the platform coin at the market price;

• Investment project evaluation: The investment share equity held by the AI project transferor shall be evaluated by professional institutions in the AI project investment market in terms of audit, legal affairs and valuation to confirm the valuation of the project equity held by the AI project transferor.

• Project release: After passing the evaluation, the AI project equity trading platform will upload the investment share of the AI project to be transferred to the transfer platform, and at the same time, the platform will publish the transfer information to investors, and the transferee situation will be publicized on the platform.

• Audit report: According to their investment preferences, investors search for investment targets released by the trading platform, and freely view the audit and valuation reports of AI projects they are interested in in the AI project investment market.

• Transfer of project equity: After the investor confirms the investment target, he/she will purchase platform coin (BUA token) on the exchange for registration.

• Project delivery: After the expiration of the transfer period, the investment share will be automatically delivered. The smart contract will be automatically generated. After the electronic signature of both parties, the AI project will be registered under the investor's name and the equity delivery will be completed.

• Project realization: After the project party completes the transfer of AI project, the platform coin (BUA token) raised will be realized in the exchange and invested into the project.

• Revenue disclosure: After the completion of the project, pay platform coins (BUA tokens) to the AI Project Investment Market, form a project revenue evaluation report, and publicize the yield per share in the AI project equity trading platform.

3) Transaction payment method

As mandated by the BUA platform, all transactions between parties must be conducted exclusively through its designated settlement tool—the BUA token. This digital currency is exclusively used for exchanging investment equity transfers and can be freely recharged.

Transactions involving BUA tokens are executed at the exchange's current market rate.

5.4 Digital rights

BUA digital rights will protect the intellectual property of AI algorithms, models and data, encouraging more AI innovation and contributions.

By leveraging blockchain's distributed ledger and timestamping capabilities, the BUA enables rapid consensus on AI intellectual property ownership across the network, ensuring timely rights confirmation. Asymmetric encryption technology guarantees the uniqueness of AI intellectual property, while timestamping ensures clear attribution to the rightful owners.

In the copyright transaction process, BUA blockchain technology enables two key functionalities. First, it provides end-to-end traceability for AI intellectual property through its blockchain infrastructure, allowing creators to track their works from source to destination. Second, BUA's public platform stores transaction records while enabling encrypted storage of AI intellectual property content. Through smart contract execution of copyright transactions, the entire process automatically completes when conditions are triggered, eliminating the need for intermediaries. This approach resolves challenges in accessing, distributing, and monetizing AI intellectual property, ensuring transparent transactions while helping creators maximize their earnings.

In the rights protection phase, challenges such as high litigation costs and difficulties in tracing infringers persist. BUA leverages asymmetric encryption and timestamping technologies from blockchain to ensure clear traceability of AI intellectual property ownership and transaction processes. This enables IP holders to promptly confirm rights or identify infringers for evidence collection during legal proceedings. Traditionally, AI IP owners faced significant obstacles including exorbitant litigation expenses and challenges in tracking infringers, which not only trapped them in legal limbo but also allowed wrongdoers to evade consequences. However, with the implementation of BUA's blockchain technology, these systemic issues are gradually being resolved.

BUA employs asymmetric encryption and timestamping technologies to ensure clear traceability of AI intellectual property ownership and transaction processes. This enables rights holders to promptly verify ownership or identify infringers, providing critical evidence during legal proceedings. Specifically, when releasing AI intellectual property works, digital signatures can be generated using BUA's blockchain technology, with both the signature and content stored on the blockchain. Should any unauthorized use or infringement occur, rights holders can swiftly verify the infringer by cross-referencing the BUA blockchain's digital signatures, thereby enabling swift action to protect their interests.

Moreover, BUA can significantly reduce the cost of rights protection. Traditional approaches to safeguarding intellectual property often require substantial human, material, and financial resources. In contrast, BUA technology enables automated rights protection processes through smart contracts and similar mechanisms. This allows AI-powered IP rights holders to operate more efficiently, thereby reducing the overall costs associated with rights protection.

In summary, BUA has revolutionized AI intellectual property protection. By streamlining processes like rights confirmation, transactions, and rights enforcement, it provides AI IP holders with safer and more reliable safeguards. Looking ahead, as BUA technology continues to evolve and improve, we can confidently anticipate a brighter future for AI intellectual property protection.

5.5 Technology incubation

BUA will work with leading innovators and institutions to create a technology incubator that will provide technical guidance, resource sharing and close collaboration opportunities with BUA's technology team for ai startups and developers, enabling more innovative projects to emerge.

The BUA Technology Incubation Center will focus on developing core autonomous AI technologies, exploring industry applications and governance models. By leveraging foundational technological expertise and real-world needs, it empowers physical industries with AI and blockchain innovations. Additionally, the center provides technical guidance, resource sharing, and tool support for AI professionals and developers. Through identifying and investing in high-quality ecosystem partners, it accelerates technology commercialization and fosters rapid growth of promising AI projects.

5.6 BUA community

The BUA community will build a global AI community, promote the wider integration of AI into social life, and provide strong support for the healthy development of the industry.

- Huge community membership: Hundreds of thousands of members provide an ideal platform for developers and businesses to share projects and increase the impact of their applications.

- Broad coverage of professional groups: AI practitioners, technical experts, entrepreneurs and enthusiasts to ensure that applications can receive accurate attention and support.

- Diversified coverage of the world: covering various regions and industries, ensuring extensive dissemination and diversified communication of information, and providing diversified promotion channels.

• Precise market feedback: Collect feedback and demand worldwide to help entrepreneurs understand market trends, optimize products, and innovate and develop.

• Spirit of joint efforts: work together, encourage each other, and make unremitting efforts to promote the development of AI technology, creating a good
Good community development atmosphere.

• Professional promotion team: Help AI applications stand out in the market by integrating community resources, organizing online and offline activities, and developing effective promotion strategies to increase their user base and business influence.

1) Community operation mechanism

The BUA community is a decentralized AI community organization with long-term impact, operating at the core of the DAO.

Within the operational framework, all BUA token holders are entitled to participate in the BUA community. Guided by the "one token, one vote" principle, community members collaborate to establish a scientific governance system that ensures goal-oriented, process-driven, and outcome-focused DAO governance. Different users may hold varying voting weights, while exchange addresses are excluded from voting rights. BUA token holders can engage in discussions on topics that contribute to the community's development:

Community development matters

• Proposal on BUA token economics

• Important model parameters of BUA public chain

• Cooperation and development of the BUA community

• Marketing activities, cooperation and exchanges

• Other matters related to marketing strategy

In the future, BUA token holders will have full control over the BUA community, the BUA public chain, and determine the direction of development, market expansion plans, technology roadmaps, asset security, and ecological incentives.

2) Community layout

As a community-driven initiative, BUA is inherently rooted in decentralized values. Currently, our global network of partners, particularly in the community sector, holds significant influence. We will leverage community channels for promotion and outreach. The BUA program will be implemented simultaneously across 120 communities in multiple countries including the United States, Australia, Singapore, Japan, France, and South Korea.

The BUA Community embraces the decentralized philosophy of blockchain technology, building on community strength and prioritizing user interests to evolve into a fully autonomous

decentralized AI community organization. Through global distributed collaborative workspaces, the BUA Community brings together like-minded partners with distinct strengths, implementing decentralized values while achieving shared governance, co-ownership, and co-management with its members. Looking ahead, the BUA Community aims to become an integrated AI autonomous alliance combining capital markets, startup tech teams, investors, and users.

5.7 Quantum computing power

In recent years, with the continuous implementation of scientific research achievements, quantum computing has gradually expanded its practical applications to fields such as cryptographic analysis, material design, drug development, artificial intelligence, weather forecasting, battlefield analysis, command decision-making, big data, and banking finance. According to a Reportlinker report, the quantum computing market size reached $800 million in 2021. As countries worldwide continue to invest in both theoretical and experimental research in quantum computing, the field is expected to maintain robust growth through coordinated advancements in hardware and software. Boston Consulting Group predicts that by 2035, the global quantum computing application market will reach $2 billion, and this figure is projected to skyrocket to over $260 billion by 2050.

The emergence of ChatGPT has propelled big data and large model applications into a new era of leapfrog advancement, driving growing demands for computing power in cutting-edge technologies. As the traditional computing paradigm centered on physical chips now faces performance bottlenecks, physicists have proposed that Moore's Law will eventually cease to hold. Meeting humanity's evolving needs with sufficient computational resources has thus become the defining direction and ultimate goal of future technological development.

As an important field of cutting-edge technology, quantum computing is called the "main engine" of the next round of scientific and technological revolution. For this reason, more and more countries are investing in the research and development of quantum computing to compete for the strategic "high ground" of future science and technology.

BUA is committed to building a robust AI computing ecosystem in the future. By establishing close partnerships with leading quantum computing laboratories and research institutions, we aim to jointly explore and lead the evolution of computing power in AI applications. This will enable faster processing speeds, higher efficiency, and reduced reliance on traditional hardware. Such advancements will provide developers and enterprises greater flexibility, lower costs for hardware upgrades and maintenance, and drive broader adoption of AI technologies.

Chapter VI Disclaimer

This document is provided solely for informational purposes and does not constitute any investment advice, solicitation or offer to sell shares or securities in the BUA Project or its affiliates. Any such offer must be made through a confidential memorandum and shall comply with applicable securities laws and other applicable laws.

The contents of this document shall not be construed as an invitation to participate in the Token public offering. Nothing relating to this White Paper shall be deemed an invitation to participate in the Token public offering, including requests for copies of this White Paper or sharing of this White Paper with others.

Participation in the Token public offering means that participants have reached the age standard, have full civil capacity, and the contract signed with BUA project is authentic and valid. All participants sign the contract voluntarily and have a clear and necessary understanding of BUA project before signing the contract.

The BUA team will continuously make reasonable efforts to ensure the accuracy and authenticity of information in this white paper. During development, the platform may undergo updates, including but not limited to its mechanisms, token systems, and distribution processes. Certain sections of the document may be revised in subsequent white papers as project progress evolves. The team will communicate these updates through official website announcements or new white papers. Participants are advised to promptly access the latest white paper and adjust their decisions accordingly. The BUA Project expressly disclaims any liability for participants who:

(a) reliance on the contents of this document;

(b) Inaccuracies in this article and losses caused by any act resulting from this article.

The team will spare no effort to achieve the goals mentioned in the document, but due to the existence of force majeure, the team cannot fully fulfill the commitment.

As the official token, BUA serves as a critical tool for platform functionality rather than an

investment product. Owning BUA does not grant its holder ownership, control, or decision-making rights over the platform. The BUA tokens used within the BUA project ecosystem do not belong to any of the following categories:

(a) bond ;

(b) Equity in the legal entity;

(c) Stocks, bonds, notes, warrants, certificates or other instruments granting any right.

The value-added of BUA depends on the market law and the demand after the application is implemented. It may not have any value, and the team does not promise to add value to it, and will not be responsible for the consequences caused by the increase or decrease of value.

To the maximum extent permitted by applicable law, the Team shall not be liable for damages and risks arising from participation in the Token public offering, including, but not limited to, direct or indirect personal damage, loss of business profits, loss of business information, or any other economic losses.

The BUA project complies with all regulatory regulations and industry self-regulatory statements that promote the healthy development of the sector. By participating, participants expressly agree to fully accept and comply with such inspections. Furthermore, all information disclosed by participants for completing these inspections must be complete and accurate. The platform has clearly communicated potential risks to participants. By participating in the Token public offering, participants confirm their understanding and acceptance of all terms and conditions outlined in the guidelines, acknowledge the platform's potential risks, and assume full responsibility for any consequences.