THE PRIME MINISTER	THE SOCIALIST REPUBLIC OF VIETNAM
_____	**Independence - Freedom - Happiness**
No. 127/QD-TTg	_____
	Hanoi, January 26, 2021

DECISION
On the promulgation of the National Strategy on Research, Development and Application of Artificial Intelligence through 2030

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THE PRIME MINISTER

Pursuant to the Law on Organization of the Government dated June 19, 2015; the Law amending and supplementing a number of articles of the Law on Organization of the Government and the Law on Organization of Local Administration;

Pursuant to the Law on High Technology dated November 13, 2008;

Pursuant to the Government's Resolution No. 50/NQ-CP dated April 17, 2020 on the promulgation of the Government's Action Program to implement the Politburo's Resolution No. 52-NQ/TW dated September 27, 2019 on a number of undertakings and policies to actively participate in the Fourth Industrial Revolution;

At the proposal of the Minister of Science and Technology,

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DECIDES:

Article 1. To promulgate the National Strategy on Research, Development and Application of Artificial Intelligence through 2030 (hereinafter referred to as the Strategy) with the following contents:

I. STANDPOINTS AND DIRECTIONS

1. Artificial Intelligence (AI) is a cornerstone technological field of the Fourth Industrial Revolution which makes an important contribution to creating breakthroughs in production capacity, improving national competitiveness, and promoting sustainable economic growth.

2. To inherit and promote the latest human achievements, to research, develop and apply AI in association with the tasks and goals of socio-economic development, national defense and security protection, and science and technology development; to bring into full play the potentials of enterprises and effectively exploit all resources; to step by step receive technology transfer, to master technologies, and make attempts to create new technologies.

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3. To direct resources to creating and developing important AI products and services of which Vietnam has competitive advantages; to consider investments in AI application in a number of fields related to defense and security, natural resource management, environment and public services; to strongly develop AI-applied enterprises and AI startups.

II. OBJECTIVES

To promote research, development, and application of AI, making AI become an important technological field of Vietnam in the Fourth Industrial Revolution. By 2030, Vietnam will become an innovation hub which develops AI solutions and applications for the ASEAN region and the world.

1. Objectives to be achieved by 2025

a) To make AI an important technological field of Vietnam

- Vietnam will be among the top 5 countries in the ASEAN region and in the group of 60 leading countries in the world regarding AI research, development and application;

- To build 05 prestigious AI brands in the region;

- To develop 01 national center for large data storage and high-performance computing.

b) Vietnam will become an innovation hub which develops AI solutions and applications

- To establish 02 national innovation centers in the field of AI; to increase the number of AI creative startups and the total investment in AI in Vietnam;

- To upgrade and form 10 new key AI research and training institutions.

c) To contribute to building a creative society, effective government, protecting national security, maintaining social order and safety, and promoting sustainable economic development.

- AI is widely used in public administration and online public services to help reduce procedure-processing time, human resources, waiting time and costs of the people;

- To improve the operational efficiency of the State administrative management system in social resource distribution and use, social management, and urban management, especially in metropolises such as Hanoi, Ho Chi Minh City and Da Nang.

2. Objectives to be achieved by 2030

a) To make AI an important technological field of Vietnam

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- Vietnam will be among the top 4 countries in the ASEAN region and in the group of 50 leading countries in the world regarding AI research, development and application;

- To build 10 prestigious AI brands in the region;

- To develop 03 national centers for large data storage and high-performance computing; to connect domestic data centers and high-performance computing centers in order to create a network sharing large data and computing capacity in service of AI;

- To form 50 sets of open, linked and connected data in economic sectors, socio-economic fields serving the research, development and application of AI.

b) Vietnam will become an innovation hub which develops AI solutions and applications

- To establish 03 national innovation centers in the field of AI;

- To build a contingent of high-quality human resources working on AI, including a team of experts and engineers who implement the application of AI. To rapidly increase the number of scientific projects and AI patent applications of Vietnam;

- To have at least 01 representative among the top 20 AI research and training institutions in the ASEAN region.

c) To contribute to building a creative society, effective government, protecting national security, maintaining social order and safety and promoting sustainable economic development.

- To universalize basic skills in AI applications for direct employees in order to promote innovation, reduce costs, improve labor productivity and people's living conditions;

- To apply AI in defense and security tasks, rescue and salvage operations as well as in preventing natural disasters and responding to incidents and epidemics;

- Along with digital transformation, the application of AI will contribute to the growth of several economic sectors.

III. STRATEGIC ORIENTATIONS

1. To build a system of legal documents and legal corridors related to AI

- To develop and complete policies and laws to create an open legal corridor meeting the requirements of promoting research, development, and application of AI to life.

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- To develop and apply AI with people and enterprises as the center, avoiding technology abuse and infringing upon legitimate rights and interests of organizations and individuals.

2. To build data and computing infrastructure for AI research, development, and application

- To promote data sharing for AI research, development, and application, to form shared and open databases for research and development of AI applications. To develop a data sharing mechanism on the principle of mutual benefit, create motivation for sharing, as well as ensure decentralized rights to access data, avoid disclosing and leaking private data of individuals or organizations.

- To strengthen national capacities for high-performance computing, cloud computing, and fog computing.

3. To develop AI ecosystem

- To develop human resources: To universalize basic skills in AI application and data science to promote innovation for teenagers. To promote the implementation of short- and medium-term AI certification training for students in different careers, and workers wishing to change careers.

- To build organizations: To attract domestic and foreign resources to build training centers, develop and apply AI and data science. The State shall invest in building a number of key centers for research and training of talents and high-quality human resources for AI and data science at a number of leading universities and research institutes.

- To deploy research and development: To attach importance to research and development of a number of essential and important AI platforms and products serving the domestic market as well as targeting regional and global markets. To apply AI to improve the output efficiency of research and development activities in other fields.

- To promote the construction of incubation centers and attract investment for the development of AI enterprises: To implement solutions to mobilize investment capital for the development of AI enterprises and brands in Vietnam.

4. To promote AI application

- To develop AI-applied enterprises: To increase the number of enterprises deploying, developing, and applying AI to meet domestic demand in the fields that ready data, technology, and investment funding. To accelerate deployment of existing AI open applications and software platforms.

- To apply AI in national defense and security and socio-economic fields: To develop a number of specific AI products in Vietnam and step by step form the AI industry in Vietnam. To urge ministries, agencies, and local authorities to

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use AI applications and services to improve the operational efficiency in distribution and use of social resources, the quality of state management, social management, and urban management.

- To raise awareness about AI: To raise the capacity, qualifications and awareness of officials, civil servants, enterprises and people about data and AI application.

5. To promote international cooperation in the field of AI

- To participate in the organization and implementation of bilateral and multilateral scientific research programs and projects on AI. To promote the development of AI research facilities and cooperation centers; projects for cooperation in technology transfer, exploitation of inventions and industrial property rights between Vietnamese enterprises and foreign enterprises regarding in AI; high-quality AI-engaged human resource training centers and programs serving the domestic and global markets.

- To exchange experts, researchers, and students of Vietnamese organizations and enterprises with foreign AI research and training organizations and enterprises. To join international associations, federations. and other organizations in the field of AI. To mobilize foreign AI experts and overseas Vietnamese nationals to come to Vietnam in order to participate in AI consultancy, research and training.

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- To complete the institutions and policies to attract foreign direct investment (FDI) as well as multinational h-tech corporations to build AI research, development, and application centers in Vietnam.

IV. TASKS AND SOLUTIONS

1. The Ministry of Science and Technology shall:

- Develop, complete and supplement legal documents on AI-related intellectual property rights.

- Expand community data development projects in the form of the Digital Vietnamese Knowledge System program; connect AI communities and open science communities in Vietnam; support the tasks of research, mastery, building of domestic platforms for high-performance computing, cloud computing, and fog computing; regularly organize activities to connect academic and research communities; professional communities developing and applying AI and data science at home and abroad.

- Strongly implement public-private partnerships and co-finance training centers, research and development centers and AI application centers; invest in forming a number of key AI and data science research teams in a number of universities and public research institutes; invest in facilities for a number of key AI and data science laboratories in universities and public research institutes;

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promote the construction of a number of AI innovation centers, and form a number of Vietnamese AI brands in the world.

- Organize the implementation of basic AI research, decode and master technologies, catch up with advances in the field of AI and initially contribute to developing new AI approaches at a number of mathematics and information technology research organizations; attach importance to investment in research and development of a number of AI products based on specific data sources and knowledge of Vietnam; implement the national key research program on AI associated with training graduate students; deploy research and development of some important AI products and service delivery platforms such as natural language processing, computer vision, automated processes, data-based AI technologies, robotics and autonomous vehicles, in a number of fields that are data-ready, technology-ready and have domestic application needs, targeting regional and global markets.

- Promote the formation of open professional groups in fields, allow the time for completion of research results to be shortened; promote multidisciplinary, interdisciplinary, and transdisciplinary use, sharing, opening of AI data technologies, and applications to accelerate results generation and improve the output efficiency of research and development activities in other fields; organize extensive training courses about open platforms for data and AI application; promote open source communities and forums on AI; encourage enterprises to order research institutes and universities to research and develop Vietnam's specific AI products.

- Organize chain of events about AI; support domestic individuals and organizations to participate in international AI seminars, exhibitions and exams; participate in organizing and implementing bilateral and multilateral scientific research cooperation programs and projects on AI; promote the development of AI research facilities and cooperation centers; projects for cooperation in technology transfer and exploitation of AI inventions and industrial property rights between Vietnamese enterprises and foreign enterprises; high-quality AI human resource training centers and programs serving the domestic and global markets; exchange experts, researchers, students of Vietnamese organizations and enterprises with foreign AI research and training organizations and enterprises. Join international AI-engaged associations, federations, and other organizations.

2. The Ministry of Information and Communication shall

- Develop and complete additional legal documents on electronic transactions, data set-up and sharing, and sandboxes, create a favorable testing space with the separate legal policy framework to conduct AI testing in potential areas; develop standards, technical regulations and formats for AI technologies and products.

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- Form the data and calculation foundation: Develop regulations and lists of professional databases that ministries, agencies and local authorities must share and open; promote a culture of building, sharing and opening data in the scientific community, enterprises and people; promote implementation of the National Data Strategy; attach importance to public investment in forming shared and open administrative databases in the process of implementing e-Government; build a reliable data-sharing framework to promote data sharing among enterprises and individuals in the private sector; integrate shared and open data of ministries, agencies and local authorities onto the National Data Portal; implement public-private partnerships and co-finance the construction of platforms and systems for high-performance computing, cloud computing, fog computing; develop mechanisms to support, encourage, and promote the use of domestic platforms as well as mechanisms to connect and share high-performance computing, cloud computing, and fog computing systems.

- Encourage the formation of organizations that open short-term training courses for researchers, technical and managerial staff to meet the requirements of AI product research and development in corporations, companies, and other research institutions; encourage and promote the development of a number of short- and medium-term AI and data science certification training programs; deploy short-term training programs on integrating AI and data science technologies into third-party devices.

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- Form enterprises that provide integrated solutions based on AI and data science technologies combined with blockchain technology, cloud computing and Internet of things; develop incentive mechanisms and deploy AI and data science technologies to promote digital transformation; build and provide technical infrastructure, AI and data science services, promote digital transformation, AI services and applications to support domestic enterprises deeply participating in the supply chains of the global market, meeting the demands of logistics, e-commerce and digital economy markets.

- Promote the development and deployment of AI applications in the field of data safety, network safety and security; urban management, social management and public administration; telecommunication; develop policies and programs to encourage IT corporations and enterprises to develop open data and software platforms for developing AI applications; encourage Vietnamese technology corporations and enterprises to focus on researching and mastering technologies and developing Vietnam’s specific AI products.

- Implement information dissemination programs to raise awareness of officials, civil servants, enterprises, citizens, teenagers and students about AI data and applications; solutions for raising awareness about AI for industries, authorities at all level, organizations, unions and individuals to understand the role and benefits of AI, the necessary basic skills needed in order to receive and

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develop AI applications, in which attention should be paid to solutions for raising awareness of change management.

3. The Ministry of Defense shall:

- Deploy the construction of a national-level center for large data storage and high-performance computing, cloud computing, and fog computing.

- Promote the development and deployment of AI applications in the fields of military, defense, in the intelligentization and modernization of equipment and weapons, in the construction of combat plans, in national defense systems, systems of prevention, response and quick response to cyber, biological, and chemical warfare, as well as in rescue and salvage operations, in prevention of natural disasters and response to incidents and epidemics.

4. The Ministry of Public Security shall:

- Develop and complete additional legal documents on privacy protection and human rights, on security and social order issues related to AI development and application activities, and on network safety and security protection for AI-related activities.

- Deploy the construction of a national-level center for large data storage and high-performance computing, cloud computing, and fog computing.

- Deploy AI applications in national security systems, immigration management systems, hi-tech crime control systems, develop technical solutions to proactively prevent crimes using AI scientific achievements.

5. The Ministry of Education and Training shall

- Deploy STEAM training programs for young people; massively implement programs to popularize AI data and application developing skills and for young people; promote full-time training programs in AI and data science; promote the inclusion of subjects in data analysis and AI application in the curriculum of different disciplines in universities and colleges.

- Encourage and promote domestic technology corporations to invest in building high-quality research institutes and training institutions on AI and data science; invest in a number of universities to open training courses on a number of undergraduate and graduate training disciplines in AI and data science.

- Promote the development and deployment of AI applications in the education sector: predict the employment demands of the market; identify student assessment criteria, support students to identify their job strengths upon graduation; automate the professional processes of teachers; identify the criteria for achieving learning goals; personalize learning, improve learning efficiency with the help of virtual teachers and tutors; support students to raise their awareness.

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6. The Ministry of Planning and Investment shall:

- Develop specific mechanisms for innovation centers to attract venture capital funds to AI creative startups in Vietnam.

- Complete institutions and policies to attract foreign direct investment (FDI) and multinational hi-tech corporations to build AI research, development, and application centers in Vietnam in line with the Resolution No. 50-NQ/TW dated August 20, 2019 of the Politburo on the orientations to perfect institutions and policies and improve the quality and efficiency of foreign investment cooperation until 2030.

7. The Ministry of Finance shall:

Promote the development and application of AI in the financial sector. Balance and allocate funds to implement the Strategy in accordance with the law provisions.

8. The Ministry of Industry and Trade shall:

- Gather, standardize, and share domestic open data sets in the industrial sector as input to available applications, serving the demands of AI applications in these fields.

- Promote the development and deployment of AI applications in the industrial sector in order to improve intelligentization and automation of the production process, thus improving productivity and quality of industrial products.

- Promote the development and deployment of AI applications in the e-commerce sector: predict demand trends, maximize and automate the negotiation and negotiation with suppliers; automate and executive management of factories; optimize sales and classification of products; optimize prices, personalize product promotion, and fulfill the demand for real-time website rendering; personalize recommendations, provide online support with virtual assistants and chatbots; automate in-store payments and delivery completion.

9. The Ministry of Agriculture and Rural Development shall

- Gather, standardize, and share domestic open data sets in the agricultural sector as input to available applications, serving the demands of AI applications in these fields.

- Promote and develop AI applications in the field of hi-tech agricultural production in order to improve intelligentization and automation of the production process, thus improving productivity and quality of agricultural products, ensuring transparent production processes, clear origins, and supply of clean foods for consumers.

10. The Ministry of Transport shall:

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Promote the development and deployment of AI applications in the traffic, transportation and logistics sectors: automatically detect the identity of vehicles, determine speed and automate processes at road traffic monitoring centers; improve the road traffic monitoring and toll collection processes associated with vehicle detection and identification; provide data for optimization of logistics systems; provide automatic route-finding and customer consulting services in technological transport models; research and deploy solutions to warn dangerous situations for vehicle drivers; support the collection of statistics, evaluation, analysis and planning for the maintenance and reparation of transport infrastructure, elaboration of transportation master plans, and intelligent traffic management and regulation.

11. The Ministry of Culture, Sports and Tourism shall:

Promote the development and deployment of AI applications in the culture and tourism sectors: develop the digital culture industry; automate the process of building a digital database about Vietnamese cultural heritages and destinations, combined with intelligent user-oriented travel consulting services; predict trends and personalize tourism types based on analyzing information on social networks, contributing to improving the quality of planning and quality of smart travel services.

12. The Ministry of Labor, War Invalids and Social Affairs shall:

Deploy training consultancy on AI and data science for employees with the needs to change their careers.

13. The State Bank of Vietnam shall:

Promote the development and deployment of AI applications in the banking sector: analyze and predict loan needs and borrowers, support credit granting activities; detect fraudulent practices; personalize banking services to customers; provide instant support services to customers through virtual assistants and chatbots.

14. The Ministry of Natural Resources and Environment shall:

Promote the development and deployment of AI applications in the field of natural resources and environment: predict data of the natural resources and environment sector, apply AI in monitoring, acquiring, measuring, investigating, and surveying land and environmental resources to provide and share real-time baseline survey and data on land and environmental resources; ensure effective treatment of environmental pollution and response to climate change.

15. The Ministry of Health shall:

- Gather, standardize, and share domestic open data sets in the health sector as input to available applications, serving the demands of AI applications in these fields.

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- Promote and develop AI applications in the health sector and the field of healthcare for the people: assist doctors in detecting, diagnosing, and making medical decisions, monitoring, and taking care of patients' health remotely, personalize treatment, research, production and preparation off medicines.

16. The Ministry of Justice shall:

Develop, complete and supplement legal documents on the legal responsibilities of AI-related subjects.

17. The Vietnam Academy of Science and Technology shall:

Deploy the construction of a national center for large data storage and high-performance computing, cloud computing, and fog computing.

Article 2. Organization of implementation

1. The Ministry of Science and Technology shall act as the focal point to summarize the situation of implementing the Strategy; assume the prime responsibility for organizing the implementation of the Strategy; annually report the results to the Prime Minister; organize a preliminary review of the implementation of the Strategy in 2025 and identify tasks and priority projects for the next period until 2030.

2. Relevant ministries, sectors and agencies shall organize the implementation of the Strategy within their assigned functions and tasks and in accordance with current law provisions.

3. The People's Committees of the provinces and municipalities shall be responsible for implementing the Strategy, ensuring consistency and synchronization with the implementation of local socio-economic development plans. They shall accelerate the application of AI solutions in urban management, social management, and public administration.

4. Research institutes and universities shall base themselves on the Strategy's contents and solutions to develop implementation contents and propose solutions to ministries, sectors, and local authorities.

5. Ministries, sectors and local authorities shall annually send reports to the Ministry of Science and Technology on the implementation of the Strategy before December 15 for it to summarize and report to the Prime Minister.

6. Funding sources for implementation

- Funding sources for the implementation of the Strategy include capital from the State budget, corporate capital, international funding and other legally-mobilized capital sources as prescribed by law provisions.

- Funding sources from the State budget shall comply with the current State decentralization. Ministries, ministerial-level agencies, People's Committees of provinces and municipalities, based on the objectives and tasks stated in the

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Strategy, to formulate specific cost estimates for implementation in accordance with regulations.

- The mobilization of financial resources from domestic and foreign organizations, individuals, and enterprises participating in the implementation of the Strategy in accordance with the law shall be promoted; the tasks assigned to ministries, sectors and local authorities shall be incorporated in other relevant national target programs.

Article 3. Effect and responsibility for implementation

This Decision takes effect from the date of its signing.

Ministers, Heads of ministerial-level agencies, Heads of Governmental agencies, Chairpersons of the People's Committees of provinces and municipalities shall be responsible for the implementation of this Decision.

P.P. THE PRIME MINISTER
DEPUTY PRIME MINISTER

(signed)

Vu Duc Dam

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