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**ТЕОРЕТИЧНІ ЗАСАДИ ПРАВОВОГО
РЕГУЛЮВАННЯ СИСТЕМ ШТУЧНОГО ІНТЕЛЕКТУ
ЩОДО ІДЕНТИФІКАЦІЇ ОСОБИ У КОНТЕКСТІ ДІЯЛЬНОСТІ
ОРГАНІВ ВИКОНАВЧОЇ ВЛАДИ**

Анотація. Штучний інтелект як технологія є затребуваним на сучасному етапі розвитку суспільства. Виникає проблема застосування правових норм, зокрема міжнародного права, під час вирішення питань, які об'єктивують сутність і технічні характеристики використання штучного інтелекту. Вказано, що розвиток правового регулювання систем штучного інтелекту, створених для ідентифікації особи, потребує конкретизації технічного регулювання. Зміст проблеми полягає у складнощах застосування наявних норм права з питань регулювання ідентифікації особи системами штучного інтелекту. Тому важливого значення в умовах сьогодення набуває потреба вдосконалення законодавства в цій галузі. Запропоновано головні напрями формування законодавчого забезпечення використання систем штучного інтелекту для ідентифікації особи з урахуванням специфіки застосування органами виконавчої влади.

Ключові поняття: штучний інтелект, ідентифікація особистості, правове регулювання, правові відносини, Європейський Союз.

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THEORETICAL BASES OF LEGAL REGULATION OF ARTIFICIAL INTELLIGENCE SYSTEMS FOR IDENTIFICATION IN THE CONTEXT OF THE ACTIVITIES OF EXECUTIVE AUTHORITIES

Abstract. At the present stage of social development, artificial intelligence as a technology is particularly in demand. In this regard, there is the problem of application of legal norms, including international law when deciding issues that concern the nature and technical characteristics of the use of artificial intelligence.

The purpose of the article is to investigate some aspects of the existing legal regulation, theoretical and legal analysis of the development of the legal regulation of artificial intelligence systems; consideration of doctrinal approaches to understanding the place of artificial intelligence in legal relationships.

General scientific methods are used: logical, systemic, general sociological and special scientific methods: normative-dogmatic, concretization and technical and legal analysis. Certain epistemological categories are considered. An approach that assumes the presence of a particular subject of research is applied – theoretical and legal foundations of legal regulation of artificial intelligence systems regarding the identification of a person in the context of the activity of executive authorities.

The legislation in the sphere of legal regulation of artificial intelligence of the European Union is investigated. A variety of approaches to the classification properties of artificial intelligence is described. Certain synthetic knowledge, which is the result of the mediation of administrative law and theory of law, is acquired. It is proved that the development of legal regulation of systems of artificial intellect to identify the person requires the specification of technical regulation.

The substance of the problem lies in the difficulty of applying the existing rules of law to regulate the identification of a person by artificial intelligence systems. Therefore, the need to improve legislation in this field becomes essential in the context of today. The main directions of the formation of legislative provision

concerning the use of artificial intelligence systems for the identification of a person are proposed, taking into account the specificity of application by the executive authorities.

Key concepts: artificial intelligence, identity, legal regulation, legal relations, European Union.

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Introduction

Legal information research offers great opportunities to improve the quality of understanding of legal phenomena and processes related to the introduction of artificial intelligence into legal practice, the development of the «digital state», improving the efficiency of law and government. The effectiveness of public policy in the area of administrative and criminal liability and the consistent implementation of the principles of lawfulness and inevitability of punishment depend on the timely identification and identification of the person. Solving the problem of identification and identification is possible with the use of artificial intelligence technologies currently being developed in the EU Member States, USA, South Korea. The presentation of the material is generally theoretical in content, and the result is methodological for the subject area of law.

New technologies do not necessarily require special or new rules. The available legal concepts are quite flexible and general, so they can adapt to new scenarios of technology development. However, the implications of technological advances in artificial intelligence related to independently operated devices are so unpredictable that the current legal framework is far from covering them. In the conditions of complication, decentralization, autonomization of artificial intelligence technologies, it is becoming more and more difficult to establish human control over certain results, which requires mandatory legal regulation.

Significant contribution to the development of Ukrainian information law, including on the right regulation of information technology, artificial intelligence systems, the development of the theory of legal relations in the specified field of public activity, made by the following scientists: V. Averyanov, O. Andriyko, O. Baranov, V. Brizhko, N. Bortnik L. Bila, V. Garashchuk, A. Marashchuk, V. Ortinsky, O. Ostapenko, E. Kharitonov and others.

Artificial intelligence as a phenomenon of engineering thought is experiencing a period of intense development. This is achieved through the development of new types of neural networks, control through entropy technology and other information and communication technologies. However, the issue of legal regulation of this phenomenon, its foundations and conditions of existence, integration into other systems remains unresolved.

The purpose of the article is to investigate the theoretical foundations of the legal regulation of artificial intelligence systems for the identification of a person in the context of the activity of executive bodies.

1. European Union Documents as the Basis for the Regulation of Artificial Intelligence in Ukraine

The implementation of the Association Agreement concluded between Ukraine on the one hand and the European Union, the European Atomic Energy Community and their Member States, on the other hand, provides for the adaptation of the Ukrainian legislation to the requirements of the European Union, not only on the topics provided in it, but in those directions of development of socio-economic sphere which become priority in connection with the development of scientific and technological progress, especially in the sphere of information and communication technologies, biotechnics, nanotechnologies.

Since 2018, the European Union has launched a large-scale AI4EU (Artificial Intelligence for the European Union) program [1]. The resolution of the European Parliament on European industrial policy in the field of artificial intelligence established general provisions of a recommendatory nature [2].

An important document for the use of artificial intelligence technologies is the Ethics Guidelines for Artificial Intelligence adopted in the European Union [3].

The guidelines, as a normative document, set the general three principles of artificial intelligence, which can be formulated as: do good, do no harm, work transparently. These principles will allow developing technologies of artificial intelligence. The management sets general rules for the development of technologies: they must be safe, accountable, non-discriminatory and controllable.

These European Union documents are the basic legal basis for the legal regulation of artificial intelligence. The initial path to legal regulation proposed in European Union countries is natural, but it does not take into account the risks arising from the use of artificial intelligence.

2. Legal implementation of artificial intelligence in Ukraine and its practical content

Artificial intelligence can be applied in the field of identification and identification of a person,

computer monitoring, where the development of information and communication technologies can produce legally significant results. This approach is exemplified in the Smart City concept, where intelligent systems should become an integral part of everyday life, including the use of artificial intelligence systems for pattern recognition and search.

Artificial intelligence technologies are intensively developing in Ukraine. The Concept of Development of the Digital Economy and Society of Ukraine for 2018–2020 and the Action Plan for its Implementation, approved by the Decree of the Cabinet of Ministers of Ukraine of January 17, 2018 № 67-p, do not directly indicate artificial intelligence technologies, but the Program of the Cabinet of Ministers of Ukraine is approved 29 September 2019, in paragraph 14.1, provides for the development of modern electronic means of identification [4; 5].

3. Theoretical, legal and sectoral aspects of artificial intelligence

In the context of information technology theory and systems, artificial intelligence is an automated software control, in which algorithms are not set in advance, but are created directly by the system independently based on coded descriptions of various kinds of purpose based on the information base regarding the external environment.

According to A. Baranov, artificial intelligence is the development of a flexible agent capable of adapting to different situations that were previously unknown and not learned through experience and to achieve a goal that is unavailable to traditional computer systems [6].

Operators conditionally divide artificial intelligence into «weak» («narrow»), «strong» («broad»), «artificial super intelligence»: the first implemented in systems designed to solve certain types of problems; the second and third include systems that have generalized cognitive abilities, are not limited in scope, differ in the use of neural network technologies [6].

The use of artificial intelligence to identify and identify a person is of practical importance for providing various types of security – public, educational, environmental, transport, road and others.

Video surveillance systems used to detect traffic violations that enable the identification of a vehicle widely used in the Member States of the European Union to ensure road safety can be compared to the systems of identification created based on artificial intelligence.

In Ukraine, these activities are regulated only in the Code of Administrative Offenses in the context of administrative liability for violations of certain traffic rules, not covering the full variety of administrative offenses in the specified field.

At the same time, there is a lack of legal regulation of administrative procedures for the implementation of administrative responsibility, no regulation of technical aspects in the context of the Law of Ukraine of 6 June 2019 «On Amendments to certain Legislative Acts of Ukraine on the Implementation of Acts of the European Union Legislation in the Field of Technical Regulation» allows to apply modern technologies on state highways [7].

These systems cannot be categorized directly as «weak» artificial intelligence, but given to a certain extent shows the approach of the legislator to solve the problems of legal regulation of the use of information and communication technologies.

The recommendations of the parliamentary Assembly of the Council of Europe, «Technological convergence, artificial intelligence, and human rights» (Technological convergence, artificial intelligence and human rights) dated April 28, 2017, indicated that the responsibility for the acts of artificial intelligence lies with the person regardless of the circumstances of the incident, and even links to independence taken by artificial intelligence solutions can't fire the creators, owners and operators from liability [8].

Artificial intelligence as the combination of mathematical software and dynamic logic is objectively, there is a technique that has the ability of a certain kind of influence on material objects, which form the basis of a legal fact. Artificial intelligence really have the ability to analyse and draw up a behavioural algorithm independent of software algorithms, so it requires legal regulation.

In the context of researches by O. Baranov «the Internet of things (IoT): regulation of the provision of services by robots with artificial intelligence»: the subjects of legal relations are individuals; the object of legal relations is a complex object that defines and identifieret a natural person; the contents of the main legal relationship is legal norms of national legislation, in the General mode of regulation are related to such activities; the content of information legal relations is the rights, duties and responsibility of subjects in the process of informational interaction [9, p. 51].

Information in the use of artificial intelligence technologies are adapted. At the initial stage of the contract, they remain unchanged, that is, information relations are made directly between the subjects of legal relations. Nevertheless, in terms of identification, that is, in terms of performing local tasks, information exchange is done between the elements of artificial intelligence through the generation and forwarding data messages via the data network without direct participation of legal entities [9, p. 51].

The theory allows for cases where relationships are not directly the subject of these relations, and its representative, who shall have the appropriate powers. But, in these cases, a representative of an entity, can only act strictly within the powers granted to him or the law, or subject to, and exclusively in the interests of the subject which it represents. In the Ukrainian legislation such a provision is enshrined in article 237 of «the Notion and grounds for representation» of the Civil code of Ukraine [10]. Enough detailed understanding of the Institute mission, as a legal phenomenon, the E. Kharitonov [9, p. 53].

Sharing E. Kharitonov's views on the content of the institution of representation, for the purpose of the following studies, we will make regular definitions: direct legal relations are legal relations that are realized directly by the subjects in the presence of information interaction between them; mediated legal relations are legal relationships that are realized indirectly by representatives on the basis of delegation to the subjects of these legal relations of a certain part of the rights and obligations in the presence of informational interaction both between representatives and between subjects. Indirect legal relationships are legal relationships in which one of the entities participates through a representative; Hybrid relationships are complex, complex legal relationships in which the subjects are directly involved in one part of the public relations and the other part of the public relations between the subjects is carried out without their participation through intermediaries. Hybrid legal relationships according to legal nature are always a set of direct and indirect legal relationships [9, p. 53].

The regulation of artificial intelligence systems for hybrid legal relationships can be constructed by analogy with the law of Ukraine "On Technical Regulations and Conformity Assessment", which includes regulating the use of subjects and technologies and the activities of entities. For this purpose it is expedient to study the technical and technological principles of the investigated technology with the use of artificial intelligence systems, that is, an approximate description of the phenomena of the outside world expressed in mathematical symbols and methods of implementation of information technology and communication components. Possible models of the psychological reaction of society to artificial intelligence technology should be explored.

4. The interaction of artificial intelligence and human beings is a requirement of time that necessitates perfect legal regulation

On the basis of the main European Union document in the field under study – Ethics Guidelines

for Artificial Intelligence, it is advisable to formulate legal rules governing the basic aspects of human-artificial intelligence systems' interaction with respect to the identification of individuals and certain aspects of legal importance in the various areas of application of the method of identification of the person (education, law enforcement, health care, etc.).

As an example of legal regulation on the identification and identification of a person, it is advisable to cite the Law of Ukraine «On the Unified State Demographic Register and documents confirming the citizenship of Ukraine, certifying the person or his special status», which allows in a number of cases to establish an individual [11]. For the Unified State Demographic Register and the document confirming the citizenship of Ukraine, a certificate or a special status is developed software that allows to identify a person without the possibility of leaking personal data or other data, the free distribution of which is prohibited. Access of the human operator to the personal database is difficult or excluded.

However, this regulation cannot be attributed to the regulation of artificial intelligence technologies as it does not reveal the basic features of artificial intelligence as a complex cybernetic software-hardware system with functional architecture and own computing power of the necessary capacities and speed, possessing properties to perceive, to perceive, to analyse, evaluate and model surrounding images and symbols.

At the same time, the interests of the development of information and communication technologies regarding the identification of individuals and protection of privacy may be at odds, since measures of integration, multi functionality, autonomy of artificial intelligence technologies and their purpose may differ. Another aspect related to legal regulation is the complexity of verifying the grounds for artificial intelligence decisions. In the structure of the artificial neural network with the complexity of artificial intelligence systems, the number of questions about the possibilities of perception and conscious activity increases.

5. Disadvantages of administrative and legal regulation of artificial intelligence and taking into account prognostic risks in the formation of the main directions of the legal activity of the state

Traditional administrative systems tend to be overly rigid, bureaucratic, and slow to adapt to new realities. This is a particular problem when managing new technologies to which artificial intelligence belongs. The implementation of effective state policy in the field of artificial intelligence application and the creation of appropriate legal

regulation are necessary to ensure privacy, protection of intellectual rights, and ensure cyber security.

D. V. Bakhtyev notes that artificial intelligence is an extremely powerful technology that directly or indirectly affects most areas of human life, so it is extremely important to develop and study the ethical foundations of the functioning of such systems. Understanding the possible risks will help to ensure the readiness of society and the state for the development and dissemination of artificial intelligence technologies. Legal regulation should be preceded by serious scientific work on the study of cultural, ethical, psychological and other social foundations for the rational, prudent application of the technologies outlined in the article, including risk prediction, preparedness for negative consequences and possible reactions of society. In order for artificial intelligence technologies to be fully recognized, a number of conditions are required. They can be classified as certain important areas of regulatory and other activities of the state. The most important of these are ensuring transparency, the content of which is to explain the need to obtain and use volumetric data; implementation and application of the relevant code of ethics; doing public outreach, etc. [12, p. 11].

The concept of development of the digital economy and society of Ukraine for 2018–2020 and approval of the Action Plan for its implementation provide for the use of the state regulatory framework for regulating the use of information and communication technologies [4]. In this context, the role of European Union law is to coordinate the development of legal regulation; in the development of European-level guidelines for the integration of fundamental values in the development of autonomous systems using artificial intelligence, including the identification and identification of persons; adaptation of existing norms; in filling the gaps in legal regulation; in developing and adopting regulatory and legal regulation of responsibility in the use of artificial intelligence technologies for the identification of a person.

I. Pongkin, A. Redkina note that artificial intelligence is intensively generating new significant challenges related to risks and extremely difficult to calculate, creating an unprecedented amount of uncertainty. Legal regulation in this area is not just in time, but today it is hopelessly behind technological development. The legal position of artificial intelligence depends on the degree and nature of autonomy of artificial intelligence (artificial intelligence system) from a person [13, p. 105].

Artificial intelligence technologies cover not only the field of mathematical programming, but also require an appropriate information infrastructure. In the context of normative consolidation of the term information system – technology

of artificial intelligence – is an organizational and technical system of information processing with the help of technical and software tools representing a certain information infrastructure [14].

The use of artificial intelligence technologies to identify people requires the development of information infrastructure. The G20 Summit of Heads of State on 08 July 2017 adopted the G20 Leader Declaration – a programmatic document for building a modern society based on the introduction of digital technologies. The Declaration proposed the development of a digital ID system by 2030 [15]. Technology is ahead of this deadline.

Legislative consolidation of the legal regime of functioning and use of infrastructure (systems) of artificial intelligence should include civil and public law rules; should ensure that artificial intelligence provisions are developed in accordance with existing public and private law sectors. This view is very important and should be taken into account by technical experts in creating large network systems that create products with special physical properties and are designed to take care not only of their functionality, but also human security and inviolability of its fundamental rights and freedoms [16, p. 61].

Conclusions

Artificial intelligence is a central part of the digital transformation of the everyday industrial revolution and it can potentially have a significant impact on many spheres of life, including enlightenment, education. Taking into account the current tendencies of socio-economic development and the need to include artificial intelligence technologies in the management process of state regulation, it is necessary to develop a system of legal regulation that provides for the implementation of regulatory and security functions of the state, including control and supervisory activities in such fields as the identification of a person in application of artificial intelligence technologies.

The European practice of civil society for effective state regulation, while protecting human values, is guided by the concept of ensuring the fulfillments of mandatory requirements and the prevention of threats and risks of harming the socially significant interests of the individual and the state, as a special organization for the protection of its rights, society as a whole. Integration of artificial intelligence technologies into the activities of government bodies that perform managerial functions in the field of educational, social, law enforcement and other relations, including identification of a person, is an inevitable phenomenon, which at present does not have sufficient understanding in the rulemaking and scientific literature. The issue needs new scientific exploration.

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