

The Role Of Standards In The Regulation Of Artificial Intelligence In Uzbekistan

L.F. Iskhakova

Ph.D. in Law, Chief legal advisor of Digital technologies and artificial intelligence research institute, Uzbekistan

D.O. Abdalimova

Quality Management System Manager of Inkha University in Tashkent, Uzbekistan

Received: 31 July 2025; **Accepted:** 28 August 2025; **Published:** 30 September 2025

Abstract: The article addresses the issues of artificial intelligence standardization in the Republic of Uzbekistan within the framework of the national Strategy for the Development of AI Technologies until 2030. The relevance of the topic is driven by the implementation of priority AI-related projects planned for 2025–2026, which necessitates the adoption of international standards at the national level. The paper provides an overview of the key challenges associated with standardization and outlines the primary tasks that must be addressed to achieve the goals set forth in the strategic documents.

Keywords: Standardization, international AI standards, Strategy, national legislation.

1. Introduction: Standardization plays a key role in forming an orderly and sustainable foundation for the development of artificial intelligence (hereinafter – AI), facilitating effective interaction between specialists from various sectors of the economy and scientific disciplines. Its main task is the implementation of standards and technical regulations aimed at increasing trust in AI and ensuring its balanced integration into production processes and the social sphere. This is especially important in the context of ensuring the quality, safety, human rights, transparency, reliability, and traceability of AI systems. Thanks to standardization, businesses gain access to international markets through unified interfaces and universal requirements, as well as the opportunity to present their innovations on equal terms with large global corporations, while consumers are provided with the ability to protect their rights when using AI.

In Uzbek legal science, the issue of standardization has been almost ignored, being considered solely as a purely technical or technological matter. In our view, this approach must be changed, especially when it comes to AI. The regulation of AI today is becoming the convergence point of three components: legal, technical, and ethical. This article attempts to show the

importance of AI standardization and its role in the overall process of AI regulation.

The content and significance of international standards

At present, standards, as a set of rules and norms for everyday use, are gaining increasing relevance and becoming essential in the governance of AI. They represent documents developed as a result of consensus, in accordance with agreed principles, and adopted by recognized international organizations such as ISO (International Organization for Standardization), IEC (International Electrotechnical Commission), IEEE (The Institute of Electrical and Electronics Engineers), or ITU (International Telecommunication Union).

These standards may also have a regional scope, while national standardization bodies develop standards at the national level or harmonize them with international ones.

Standards in the field of AI are not only a tool of regulatory governance but also serve as an important mechanism for stimulating innovative development. The impact of standards on the AI ecosystem ensures a high level of protection of fundamental rights, safety, and transparency. At the same time, they stimulate

technological progress by establishing clear technical requirements, on the basis of which certification of products and services can be organized. For example, the ISO/IEC 42000 series ensures effective compatibility of AI management systems, while the ISO/IEC TR 22100-5 series is devoted to the implications of machine learning in AI. Alongside technological issues, such standards also include questions of AI ethics.

It should be taken into account that the strengthening of the positions of individual international organizations in the process of global AI standardization means, for Uzbekistan, the potential adoption and institutional support of exactly that model of AI development which reflects the interests and approaches of the respective international organization.

Thus, standardization ensures the effective development of AI and sets specific guidelines for the formation of its optimal model, determining further steps for the practical implementation of AI. This is the very process of developing and introducing technical standards. However, this activity is not limited solely to technical aspects; it also covers the development of human and institutional capacity, the formation of effective regulatory policy and governance mechanisms, as well as the creation of conditions for constructive interaction between all interested parties. In this process, the coordinating function of international organizations such as the UN (United Nations), ITU, ISO, WHO (World Health Organization), ILO (International Labour Organization), and UNESCO (United Nations Educational, Scientific and Cultural Organization) acquires special importance.

A wide range of actors participate in the development of international standards: representatives of the public sector, academia, civil society, business, and industry. Therefore, standards can be used for the technical description of requirements for AI and its applications, such as transparency, explainability, and quality. From a technical point of view, this means support for protection against distortions, discrimination, and manipulation, and thus the use of AI in accordance with ethical values. Ultimately, standards will become the basis for certifying AI solutions and systems.

Unlike legislation, standards are voluntary, but they play a key role in the implementation of best practices in the field of trustworthy AI, as well as effective technical solutions and methods for organizing AI deployment and information exchange among different market participants. Among other things, they create conditions for compliance with AI legislation, the

stimulation of innovation, and the provision of coordinated access to the market.

2. The Role of International Organizations in AI Standardization

At present, a central role in the development of AI standards, covering the life cycle of AI systems from design to use, is played by ISO (ISO/IEC SC42), which develops international standards, and CEN (CEN/CLC JTC21), which adapts and develops specialized standards for the European market. ISO and CEN work closely together to ensure consistency between global and European standards.

In addition, ITU has established a consensus based on voluntary standards in the field of AI. These include more than 200 developed and developing standards:

- on structures for the integration of AI/machine learning into networks. Such standards establish requirements for compatibility and interoperability, ensuring joint operation of products and systems, expanding their scope of application and usability, and reducing waste and duplication;
- on terms and definitions. These are fundamental standards that help build a common language, setting harmonized terms and definitions and providing the foundation on which other standards can be developed;
- for the evaluation of AI/machine learning models and their outcomes. Testing and performance standards establish repeatable methodologies and requirements for verifying the quality, safety, and performance of products and processes;
- for data processing.

It is worth noting the partnerships that lay the groundwork for new AI standards in healthcare (ITU, WHO, WIPO – World Intellectual Property Organization), disaster management (ITU, WMO – World Meteorological Organization, UNEP – United Nations Environment Programme), and digital agriculture (ITU and FAO – Food and Agriculture Organization of the United Nations), as well as human rights and the standards of the UNHRC (United Nations Human Rights Council). It should be borne in mind that although the documents of these organizations are referred to as standards, not all of them belong to technical regulation. This is another trend emerging in the documents of international organizations: the combination of technological, legal, ethical, and other rules united in one document [1].

International documents highlight the importance of using AI to achieve the Sustainable Development Goals as a foundation for building a better and more sustainable future for all. They recognize, with respect

to technical regulation, the impact of AI and other digital technologies on societies and their integration into products and services [2], and therefore emphasize the need to improve the consistency of regulation and, where possible, harmonize methods and approaches to regulation in order to ensure clarity for sustainable international trade, while avoiding unnecessary technical barriers and facilitating market access.

The content of these documents demonstrates the need to enhance the compatibility of regulations related to the technical regulation of products with embedded artificial intelligence and other digital technologies, as well as the adoption of a comprehensive unified regulatory framework to ensure compliance of products and/or services with embedded AI technologies or other digital technologies with regulatory requirements [3][4] (ECE/CTCS/WP.6/2024/11).

It is precisely international standards that make it possible to:

- determine methods for testing and evaluating AI systems,
- establish performance criteria and technical requirements,
- facilitate risk management and compliance with regulatory requirements.

For example, ISO 42001 “AI Management System” offers a set of best practices to support organizations in the responsible and controlled use of AI.

At the World Telecommunication Standardization Assembly (Delhi, India, 2024), Resolution 101 was adopted – Activities of the ITU Telecommunication Standardization Sector in Standardization of Artificial Intelligence Technologies in Support of Telecommunications/Information and Communication Technologies [5], which set objectives for the development and adoption of ITU-T Recommendations concerning the deployment of AI technologies in ICT. In addition, the resolution emphasized the growing significance of AI and the related need for reliable technical standards for ICT with AI support, in order to increase their efficiency, functionality, and reliability.

At the first Global AI Standard Hub Summit in March 2025 in London, the crucial role of standards in AI governance was discussed, along with the latest developments, key challenges, and emerging needs in fostering global inclusive and collaborative approaches to AI standardization.

Another example of addressing AI standardization issues is the approach of the European AI Regulation. Interestingly, the European Artificial Intelligence Act [6]

considers AI as a product rather than a mere technology. This approach, similar to that applied to other consumer goods (household appliances, food products), creates new challenges for the development of standards.

However, it is the law that guarantees:

- stronger consumer protection from AI-related risks,
- a clear methodology for identifying and mitigating risks to fundamental rights,
- a reliable platform for the development of AI systems.

There are 10 priority areas for AI standardization in Europe (10 areas corresponding to the core requirements of the Artificial Intelligence Act for high-risk use cases, where harmonized technical standards must be developed):

1. Risk management systems for AI systems;
2. Data governance and quality;
3. Record-keeping;
4. Transparency and user information;
5. Human oversight;
6. Accuracy requirements for AI systems;
7. Reliability requirements for AI systems;
8. Cybersecurity requirements for AI systems;
9. Quality management systems for AI system providers, including post-market monitoring processes;
10. Conformity assessment.

These standards are necessary to guarantee responsible AI and to strengthen trust in this technology.

The advantages of standards can be considered from the perspective of two general interconnected functions. Standards help organizations manage and reduce risks, as well as reveal and scale the benefits of their products and services. Thus, standards play an important role both in AI governance and in innovation.

3. Problem Statement

The documents of international organizations on standardization allow us to conclude that before creating AI systems and launching their operation, it is necessary to understand what AI is, and what properties it should possess in order to ensure a high-quality level of digitalization across all spheres of human activity. Considering AI as an object of standardization, it is necessary to define its objectives.

AI technologies are in high demand across a wide range of sectors in the digital economy. Among the main factors restraining their full-scale practical application

is the underdevelopment of the regulatory and technical framework. At the same time, it is precisely a well-developed regulatory and technical framework that ensures the proper quality of technology application and the corresponding economic effect.

The development of AI-based products and services requires a uniform interpretation of the terms used by all market participants. The AI terminology standard adopted by ISO makes it possible to unify the "language" used by developers, customers, and the professional community, and to classify such properties of AI-based products as "safety," "reproducibility," "reliability," and "confidentiality." Unified terminology is also an important factor for the development of AI technologies. The decisions and standards of ISO/IEC will strengthen the authority and expand the influence of international standards.

The state and problems of AI standardization in Uzbekistan

A historic stage in the development of AI regulation in Uzbekistan was the adoption of the Presidential Decree of the Republic of Uzbekistan on the approval of the Strategy for the Development of Artificial Intelligence Technologies until 2030 [7]. In the operative part of the document, as a priority goal and task of AI regulation, the improvement of standards and the strengthening of international cooperation in this field are identified. The same presidential decree approved the Strategy for the Development of Artificial Intelligence Technologies until 2030, in which (in paragraph 3 of Chapter 3), entitled "Improvement of Standards in This Field and Strengthening of International Relations", specific tasks are set for the formation of a national AI standards base. According to the Strategy, this task includes the following steps:

- conducting an inventory of existing national standards, their analysis, and harmonization with international standards;
- developing new national standards based on international standards;
- organizing trainings and seminars for those involved in the standardization process, as well as creating expert groups to develop new national standards in line with international requirements;
- holding international forums and conferences as part of strengthening international relations;
- establishing scientific and technological cooperation with foreign partners to exchange innovative technologies and adapt them to local conditions;
- developing special platforms and programs for promoting national products and services in

international markets;

- creating favorable conditions to stimulate the production of products and services that meet international requirements.

It should also be noted that these tasks are reflected in the Action Plan for the Implementation of the Strategy for the Development of Artificial Intelligence Technologies for 2024–2026 and are set out in items 7–11 of Section II "Improvement of Standards in the Field and Strengthening of International Cooperation" with specific deadlines and responsible entities. The planned measures include:

- studying international experience and developing draft standards in this area;
- coordinating and approving draft standards;
- conducting an inventory and analysis of existing national standards of Uzbekistan;
- developing new editions of national standards based on the results of the inventory, followed by their coordination and approval;
- compiling a list of leading foreign companies and experts in standardization and establishing cooperation with them;
- holding seminars on aligning local (national) standards with international standards with the involvement of leading foreign companies and experts;
- establishing processes for the localization (harmonization) of international standards, as well as the transfer of advanced foreign experience and technologies, in cooperation with foreign companies in the field of standardization;
- developing and implementing a "roadmap" to ensure Uzbekistan's active participation in international AI organizations and to shape its image in regional and international cooperation.

For the implementation of the Presidential Decree of the Republic of Uzbekistan dated October 14, 2024, No. PP-358, the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 425 of July 10, 2025 [8] was adopted, in accordance with which the Center for the Development of Artificial Intelligence and the Digital Economy was established [9]. Among the Center's tasks, along with others, is to ensure a unified technological approach to the introduction of AI technologies and the development of the digital economy, including the formation of a regulatory and legal framework, the implementation of international standards, and methodologies.

In Uzbekistan, state policy in the field of standardization, as well as monitoring the implementation of the standardization plan, state

supervision over compliance with the requirements of standards and legislation on standardization, and the creation of a unified integrated system of standardization based on modern management methods, is carried out by the Uzbek Agency for Technical Regulation.

Based on this, the implementation of the set tasks and measures will require the efforts of both the Ministry of Digital Technologies and the Uzbek Agency for Technical Regulation, which will contribute to creating favorable conditions for the introduction of AI technologies into the social sphere and sectors of the economy, and for the country's entry into the ranks of the leading states of the world. This situation, on the one hand, necessitates the organization of interagency cooperation, and on the other hand requires research and work on the introduction of international AI standards into the national standardization system. Considering that the harmonization of international standards into the national system represents research and organizational-legal activities (discussion of document content in expert councils, technical commissions, and committees of various levels), the task arises of training specialists of this level in the field of standardization.

The development and implementation of international standards at the national level require funding and support from state institutional structures. At the same time, AI standards must ensure the following tasks:

- functional interoperability;
- ensuring safety and respect for human rights;
- risk management and increasing user trust;
- harmonization of approaches and support for innovation;
- transparency, responsible development, and use.

In the context of the discussion on AI regulation, it should be emphasized that the process of legal regulation and the development and implementation of international standards must develop synchronously. These directions are not mutually exclusive or hierarchically subordinate, since their mutual integration ensures a comprehensive and effective system of AI governance. This approach is emphasized in many international documents.

From the perspective of overcoming the standardization gap, the issue of implementing international AI standards in Uzbekistan acquires special significance and serves as an indicator of problems in the standardization system that require timely solutions to ensure the quality, safety, and competitiveness of products and services. Therefore, it

is critically important for Uzbekistan to engage in the implementation of international AI standards in order to avoid widening the standardization gap, discrepancies between existing standards and actual market needs and the technological level of development, as well as inefficient application of standards in production or the service sector.

An analysis of the Strategy shows that the development of all AI projects is impossible without the implementation and use of international standards. Uzbekistan needs to establish closer cooperation with international standardization organizations such as ITU, ISO, and IEC in order to meet modern market conditions, overcome the standardization gap with their help, maintain the dynamics of AI development, and implement ethical requirements.

It is important to conduct a comprehensive analysis of the projects planned under the Action Plan in order to identify priority international standards necessary for their successful implementation. The implementation and use of international standards, on the one hand, will allow for the development of high-quality products, and on the other hand, will create conditions for the development of safe AI. Of course, this serious analytical work will require a scientific approach and the involvement of specialists both in the field of AI and in standardization. These tasks must be taken into account in the development of training programs for this field in Uzbekistan, and the analyzed Resolution imposes new tasks on the Basic Standardization Organization of the Ministry of Digital Technologies, which will also require deep scientific and technical research in this area.

4. CONCLUSION

1. The regulation of AI includes three aspects: legal and regulatory support, the implementation of international standards, and the development of ethical norms and rules. These components must operate in interconnection and ensure a comprehensive, complementary approach to AI technology governance. In this regard, the issues of AI standardization acquire special significance, as they may encompass both elements of legal regulation and substantive elements of ethical requirements.

2. The implementation of the tasks and measures outlined in Uzbekistan's program documents will require the active participation of the Ministry of Digital Technologies and the Uzbek Agency for Technical Regulation, which, in turn, will contribute to creating a favorable environment for the integration of AI technologies into the social sphere and key sectors of the economy, as well as advancing Uzbekistan into the ranks of the world's leading states in this field.

3. In Uzbekistan, strategic-level documents have been adopted that assign specific organizations the responsibility for adopting and implementing international AI standards.

4. The implementation of international AI standards will lead to an improvement in Uzbekistan's position in international AI rankings and indices (Top-50 Government AI Readiness Index).

5. Establishing scientific and technological cooperation with international standardization organizations will contribute to the exchange of innovative technologies and their adaptation to national conditions.

6. Under the conditions of implementing into the national standardization system the requirements of international AI documents, improving the knowledge and skills of specialists in the field of AI plays a key role.

It is important to understand that the further development of AI offers a path to reforming the process of developing harmonized technical standards and the working methods of standardization bodies so that they can more effectively address emerging challenges. It is necessary to draw a boundary between what must be carried out within the framework of legislation and what can be delegated to standardization bodies. Finally, standardization must more actively involve representatives of the scientific, academic, and professional community, and not be driven exclusively by private commercial interests.

REFERENCES

1. ISO/IEC 42006: Requirements for certification bodies for competent audits of ethics, data, and risks; and the intergovernmental standard in the field of AI The OECD AI Principles (adopted in 2019 and updated in 2024). <https://www.oecd.org/en/>
2. ECE/CTCS/WP.6/2023/9 Ensuring compliance with regulatory requirements of products with embedded artificial intelligence technologies or other digital technologies.
3. https://unece.org/sites/default/files/2024-06/ECE_CTCS_WP6_2024_11E.pdf
4. Compliance of products with embedded artificial intelligence. Proposed general principles and declaration to promote the harmonization of regulatory requirements for products. UN. Geneva, 2024. <http://creativecommons.org/licenses/by/3.0/igo/>
5. https://www.itu.int/dms_pub/itu-t/opb/res/T-RES-T.101-2024-PDF-R.pdf
6. <https://artificialintelligenceact.eu/>
7. Decree of the President of the Republic of Uzbekistan On the Approval of the Strategy for the Development of Artificial Intelligence Technologies until 2030, dated 14.10.2024, No. PP-358.
8. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan On Measures for the Implementation of Priority Projects in the Field of Artificial Intelligence Technologies in 2025–2026, dated 10.07.2025, No. 425.
9. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan On Measures for the Organization of the Activities of Certain Organizations of the System of the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan, dated 25.06.2020, No. 409.