

LEGAL LIABILITY OF ARTIFICIAL INTELLIGENCE IN THE CIVIL SERVICE OF TURKMENISTAN

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ABSTRACT

This article examines the issues of legal liability for harm caused by the use of artificial intelligence (AI) technologies in the civil service system of Turkmenistan. The relevance of the topic is due to the active digitalisation of public administration in the country, including the development of 'smart cities', illustrated by the example of the city of Arkadag. The article is based on an analysis of Turkmenistan's international obligations within the framework of cooperation with the OSCE, UNESCO, and UNDP, as well as an examination of national legislation, including the Law of Turkmenistan "On Information about Private Life and Its Protection". The authors identify legal gaps related to determining the subject of liability for actions performed by AI systems. The article considers key doctrinal approaches to the legal personality of artificial intelligence and analyses various models for the allocation of responsibility among developers, owners, and operators of AI systems. Particular attention is devoted to the risks associated with the use of AI in the civil service, including algorithmic errors, discriminatory outcomes, and violations of citizens' rights and lawful interests. Drawing on international experience, especially regulatory approaches developed within the European Union, the authors formulate proposals aimed at improving Turkmenistan's legislation. These include enshrining the principle of algorithmic transparency, introducing mandatory audits of AI systems used in public administration, and establishing clear mechanisms of civil liability for harm caused by AI-driven decisions. The scientific novelty of the article lies in the conceptualisation of a model of legal liability for artificial intelligence tailored to the legal system of Turkmenistan and aligned with the current stage of digital law development. The article concludes that there is a need to develop a comprehensive national strategy for AI regulation, and it proposes using the city of Arkadag as an experimental legal platform for testing innovative regulatory approaches.

Keywords: artificial intelligence, legal liability, civil service, digitalisation, legal regulation, algorithmic systems, data protection, Arkadag city, civil liability

INTRODUCTION

In the context of accelerated digital transformation, artificial intelligence (AI) is increasingly embedded in systems of public administration across many countries. The capacity of AI technologies to process vast volumes of data, streamline administrative procedures, and enhance the quality and consistency of managerial decisions creates significant opportunities for improving the overall efficiency of governance. However, the integration of intelligent systems into administrative decision-making also gives rise to complex legal challenges. Among these, a central and unresolved issue is the determination of legal liability for potential harm resulting from decisions generated or supported by algorithmic systems.

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RESEARCH METHODOLOGY

This study is based on a combination of logical analysis and specialised legal research tools. A central role is played by normative and doctrinal³ analysis of the current legislation of Turkmenistan, with particular emphasis on public digitalisation programmes and legal acts governing data protection, privacy, and cybersecurity. This approach made it possible to assess the readiness of the national legal system for the integration of autonomous algorithmic systems and to identify specific regulatory conflicts arising from the interaction between traditional administrative law institutions and the rapidly evolving nature of artificial intelligence technologies.

An important component of the research is the analysis of approaches to AI regulation across different jurisdictions. Special attention is given to the European Union Artificial Intelligence Act, regulatory initiatives of the Republic of Kazakhstan, as well as international standards and ethical guidelines developed by the OSCE and UNESCO. This comparative analysis not only facilitated the identification of effective models for attributing legal responsibility and conceptualising the legal status of so-called “electronic persons” but also enabled the adaptation of international best practices to the specific legal and institutional context of Turkmenistan. In this regard, the unique role of the city of Arkadag as an experimental digital environment was taken into account.

To systematise and integrate the results obtained, the study employs legal modelling aimed at constructing a hierarchical framework for the distribution of liability for harm caused by AI systems. The use of a systemic-structural approach allows the civil service to be viewed as a complex network of interactions between the state, civil servants, and developers and operators of digital technologies, with each participant bearing a clearly defined scope of responsibilities. This method provides a scientific basis for substantiating proposals on the creation of regulatory sandboxes, ensuring a balanced approach that promotes technological innovation while safeguarding the fundamental rights and legitimate interests of citizens.

CURRENT REGULATORY FREAMWORK AND INTERNATIONAL COOPERATION

For Turkmenistan, the issue of regulating artificial intelligence is of particular relevance in the context of the consistent policy of digitalising public administration implemented under the leadership of the National Leader of the Turkmen People and the President of Turkmenistan. Ongoing reforms aimed at modernising governance, including the development of the ‘smart city’ of Arkadag, the gradual introduction of e-government instruments, and the expanding use of digital technologies in the activities of state authorities, have significantly increased the demand for an adequate and forward-looking legal framework. The country’s readiness for digital transformation is reflected in international assessments, including data from the United Nations E-Government Development Index (EGDI).

In January 2026, the President of Turkmenistan initiated the development of a national legal framework for artificial intelligence, including the delineation of responsibilities of state authorities when interacting with intelligent systems. This initiative marks a significant transition of the issue of legal liability for decisions taken with the involvement of AI in the civil service from the purely theoretical sphere to the realm of practical legal regulation. As a

³ Doctrinal- is a scholarly approach in law that focuses on the systematic study, interpretation, and synthesis of legal rules, principles, and academic theories. In this article, it represents the analysis of established legal “doctrines” (such as liability or legal personality) to provide a theoretical foundation for new regulations.

result, there emerges an objective need for comprehensive scientific analysis and the formulation of well-grounded legal recommendations.

Figure 1. E-Government Development Index scores for Turkmenistan (2003-2024)

E-Government Development Index of Turkmenistan												
Source: UN E-Government Knowledgebase (unpublication.un.org)												
Indicators	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020	2022	2024
Turkmenistan EGD	0,33517	0,34092	0,00000	0,32620	0,32258	0,38130	0,35109	0,33369	0,36520	0,40340	0,48080	0,47569
Asian EGD	0,37400	0,38400	0,37100	0,40800	0,43100	0,46900	0,50000	0,51100	0,55400	0,60900	0,62200	0,67300
	0,40200	0,40800	0,39900	0,42200	0,44100	0,47600	0,47000	0,49200	0,55000	0,59800	0,64800	0,68100
Indicators out of 193 countries												
Indicators	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020	2022	2024
Ranking of Turkmenistan EGD	106	108	180	128	130	126	128	140	147	158	137	145
E-Government Development Index of Turk	123	123	151	152	180	161	158	179	186	179	180	189



Currently, in Turkmenistan, as in many other countries, specialised legislation comprehensively regulating relations in the field of the creation and application of artificial intelligence technologies is at an early stage of development. A key element of the existing legal framework is the Law "On Information about Private Life and Its Protection", adopted in 2017.⁴ This regulatory act establishes general principles for the collection, processing, and storage of personal data, including biometric information, which is of direct importance for the functioning of artificial intelligence systems, as such data form the basis for the training and operation of algorithms. The law obliges data operators to obtain the consent of individuals for the processing of their personal information, while providing exceptions for healthcare, law enforcement, and other socially significant areas. These provisions create necessary guarantees for the protection of citizens' rights in the context of digitalisation. However, as rightly noted in specialised literature, this law, despite representing an important step in the development of national information legislation, does not contain provisions that take into account the specific characteristics of artificial intelligence technologies or the peculiarities of data processing in automated systems capable of self-learning. This

⁴ Law of Turkmenistan No. 519-V (20 March 2017) "On Information about Private Life and Its Protection". Bulletin of the Mejlis of Turkmenistan, No. 2, Art. 45.

circumstance necessitates further improvement of the legal framework in line with technological development. In this regard, the experience of the Republic of Kazakhstan in developing regulatory approaches to artificial intelligence is noteworthy and may serve as a reference point for adapting legislation to confront the challenges of the digital age and for forming regional approaches for the security of algorithmic systems (Kamalova and Kozhevnikova, 2025).

Turkmenistan places particular emphasis on international cooperation in the sphere of digital development and the introduction of new technologies. A central direction of this activity is participation in initiatives of authoritative international organisations focused on artificial intelligence and the protection of human rights in the digital environment. Thus, on July 17–18, 2024, a workshop on the impact of artificial intelligence on freedom of expression and the media environment was held in Ashgabat with the support of the Organisation for Security and Cooperation in Europe (OSCE).⁵ During the event, participants discussed the need to harmonize national AI development strategies with international human rights standards, ensure transparency of algorithmic systems, and strengthen accountability mechanisms in their use.

Active cooperation is also carried out with the UN Educational, Scientific and Cultural Organisation (UNESCO). In December 2024, the Ministry of Education of Turkmenistan, together with the UNESCO Institute for Information Technologies in Education, organised a scientific and practical conference entitled “Artificial Intelligence in the Education System of Turkmenistan”. The conference focused on the development of education management information systems, the enhancement of digital competencies among teaching staff, and the adaptation of artificial intelligence technologies to the national context. A draft strategy for the development of AI in the education sector was presented at the event, reflecting consistent efforts to elaborate national approaches to the implementation of intelligent technologies.

In addition, the United Nations Development Programme (UNDP) is implementing projects in Turkmenistan aimed at improving digital skills and training specialists for the digital economy. These initiatives contribute to the development of human capital, which is a necessary condition for the effective application of artificial intelligence technologies in various sectors, including public administration.

The development of supranational regulation, such as the AI Act, establishes a safety vector but does not resolve all liability issues. In this context, Maizi (2026) highlights a fundamental gap between the rapid technological advancement of AI and the static nature of legal regulations governing compensation for damage. This underscores the need to develop national models adapted to the specific circumstances of Turkmenistan.

Turkmenistan’s active participation in international consultative processes reflects the global shift from declarative ethical principles toward the creation of binding legal mechanisms for the oversight of algorithmic systems (Bartoletti, 2025). Against this backdrop, the January 2026 initiative of the President of Turkmenistan to develop a national legal framework for AI represents a timely step aligned with the global digital governance agenda. A key milestone in this process was the decision to formulate a set of documents, including national standards, technical regulations, and rules governing the use of artificial intelligence. Of particular

⁵ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (EU Artificial Intelligence Act). Official Journal of the European Union, 2024.

importance is the fact that the emerging legal framework will define the responsibilities of government agencies when interacting with intelligent systems, as well as delineate powers among actors in the relevant legal relationships.

Thus, the foundations for a transition to systemic legal regulation of artificial intelligence have been established in Turkmenistan. The existing data protection framework, active international cooperation with relevant organisations (OSCE, UNESCO, UNDP), and the high-level policy decision to develop specialised legislation together create the necessary preconditions for shaping a comprehensive and balanced model of AI legal regulation, aimed both at fostering innovation and ensuring reliable protection of the rights and legitimate interests of citizens.

THEORETICAL APPROACHES TO THE LEGAL PERSONALITY AND RESPONSIBILITY OF AI

The question of whether artificial intelligence may be regarded as an object of legal relations is among the most controversial issues in contemporary legal scholarship. Researchers emphasise that the challenges posed by AI to traditional legal institutions necessitate the search for new regulatory paradigms capable of accommodating the specific nature of digital technologies (Gadzhev and Voynikanis, 2021). As technological development continues and AI systems achieve an increasing degree of autonomy, legal scholars are increasingly confronted with the question of whether artificial intelligence can independently bear legal liability for harm caused, or whether such liability must invariably remain with the human actors involved in its creation, deployment, or use.

International legal doctrine has articulated several key approaches to addressing this issue. The most radical among them is the concept of “electronic person” proposed in several European Parliament documents. Proponents of this approach argue that highly autonomous AI systems could be endowed with a special legal status similar to that of legal persons, enabling them to act as liable entities and to own property subject to enforcement. This concept is grounded in the view that, as algorithms become increasingly complex and capable of self-learning, traditional human-centred models of liability become progressively less effective.

The opposing position, which prevails in many foreign legal systems, rejects the recognition of artificial intelligence as a bearer of legal personality. Proponents of this view emphasise that AI remains a tool or object of legal relations rather than an independent legal subject (Yastrebov, 2020). As noted in the scholarly literature, artificial intelligence lacks consciousness, free will, and the capacity to comprehend the legal and social implications, qualities that are generally considered essential for recognising an entity as a subject of legal liability.

Morhat (2023) highlights that the distinctive nature of administrative liability in the digital era lies in the need to reconsider the traditional category of ‘guilt’ when applied to software systems capable of autonomous self-learning. This observation supports the conclusion that the legal system should not seek to identify ‘guilt’ of an algorithm itself but rather should focus on clearly allocating control and responsibility between human actors and technical systems. Accordingly, liability should always be borne by the individual or entity behind the AI, namely, the developer, owner, or user, who exercises control over its design, training, learning operation.

A compromise approach proposed in legal doctrine is to treat artificial intelligence as a source

of increased danger. Under this model, liability for damage caused by an AI system could be constructed by analogy with foreign legislative solutions, in particular Article 1079 of the Civil Code of the Russian Federation, which establishes liability for harm resulting from activities that pose an increased danger to others. Such liability is imposed irrespective of guilt, while allowing for exemption in certain circumstances. At the same time, this approach requires adaptation to the specific features of AI, since the traditional concept of a source of increased danger is associated with tangible objects, such as vehicles, machinery, or hazardous substances, whereas AI is predominantly a software-based product (Ponkin and Redkina, 2020).

As researchers observe, in the context of digital transformation and the integration of AI into law enforcement and other spheres of human activity, identifying the party responsible for causing harm often proves difficult, since the immediate perpetrator may be a technical system lacking legal personality. This circumstance necessitates the development of alternative, more flexible models for attributing and distributing liability among the actual actors in legal relations (Talapina, 2022).

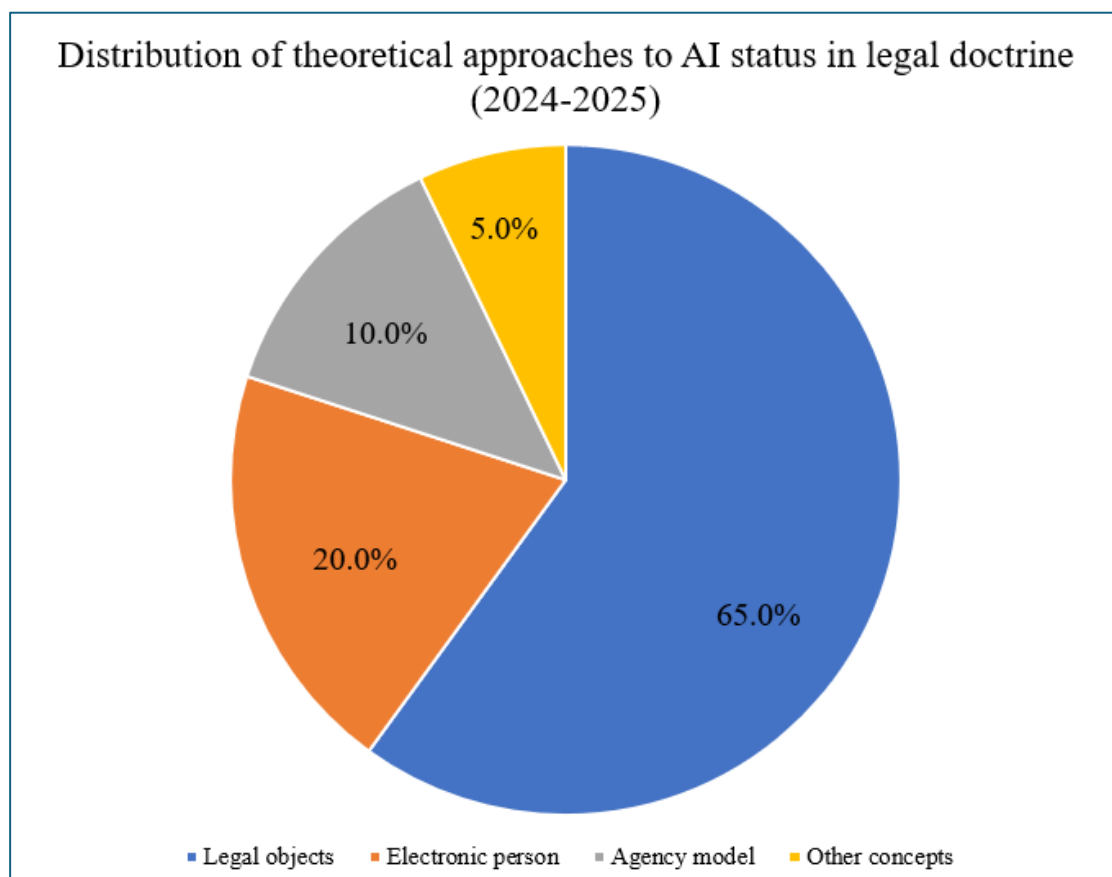
An analysis of the positions reflected in the scholarly literature leads to the conclusion that none of the existing “pure” liability models fully accommodates the needs and interests of the civil service system of Turkmenistan. In this regard, a three-tiered mixed liability model is proposed, designed to ensure an equitable distribution of risks among the relevant actors:

- At the first tier, the State bears primary liability toward the citizen on a strict (no fault) basis. This approach guarantees the prompt restoration of violated individual rights regardless of the nature or severity of the technical malfunction involved.
- At the second tier, the civil servant fulfils the role of ‘human oversight’ and is held accountable for negligence or failure to properly verify and assess data generated or processed by artificial intelligence systems. Such an arrangement precludes the possibility of shifting responsibility to the algorithmic ‘black box’ and preserves the principle of personal accountability in public administration.
- At the third tier, the developer bears liability toward the State by way of recourse. This mechanism creates a sustained economic incentive for technology providers to deploy AI systems that are reliable and robust.

We contend that this synthesis of public and private liability mechanisms is capable of achieving a balanced reconciliation between the objectives of innovative development and the effective legal protection of citizens’ rights. The proposed model may be piloted within a regulatory sandbox legal regime in the city of Arkadag, thereby establishing a controlled and secure environment for the large-scale testing and subsequent deployment of innovative technologies.

Figure 2 represents the visual distribution of key theoretical approaches to AI's legal status based on contemporary scholarship (2024–2025). It illustrates that while the “Legal object” view remains dominant, other theories like the ‘Electronic person’ concept are also part of the doctrinal debate. This visual depiction it essentially provides some empirical context for the proposed mixed liability model; it helps in enhancing analytical depth in contextualising the legal-historical evolution and the current status of artificial intelligence within contemporary jurisprudence.

Figure 2. Distribution of Theoretical Approaches to AI status in Legal Doctrine



PROMISING DIRECTIONS AND PRACTICAL APPLICATION OF AI IN PUBLIC SERVICE

The digital transformation of public administration in Turkmenistan is being implemented in a structured and systematic manner, in line with the strategic objectives outlined in the national programme "Revival of a New Era of a Powerful State". A key milestone in this process was the establishment of Arkadag, the country's first "smart city". This project represents not only an outstanding architectural achievement, but also an integrated technological platform designed to support the adoption and implementation of advanced public administration solutions.⁶ Its successful realisation has created a robust institutional and technological foundation for the broader integration of artificial intelligence technologies into the civil service system.

As highlighted in contemporary administrative and legal scholarship, the digitalisation of the civil service in Turkmenistan requires more than the mere introduction of modern technical infrastructure. It entails a deep transformation of legal frameworks and governance institutions aimed at ensuring greater transparency of public officials' activities (Atayev, 2024).

One of the most promising areas for the application of artificial intelligence technologies is the enhancement of public service delivery. Intelligent systems are capable of processing citizens' requests in real time, conducting preliminary verification of submitted documents for compliance with established requirements, and generating draft responses for typical situations. This significantly reduces waiting times and improves the overall quality of services

⁶ The Programme of the President of Turkmenistan "Revival of a New Era of a Powerful State: National Programme for the Socio-Economic Development of Turkmenistan in 2022-2052". Ashgabat, 2022.

provided to the population. It is important to note that the implementation of such technologies is carried out in strict compliance with the Law of Turkmenistan “On Information about Private Life and Its Protection,” which ensures an adequate level of personal data protection.

The development of the Electronic Government portal creates the necessary infrastructure for the integration of intelligent components. In the future, the use of machine learning algorithms will enable a transition to proactive service delivery, whereby the state, on the basis of data analysis, independently informs citizens about the availability of various support measures through a one-stop service delivery mechanism.

The effectiveness of the civil service is directly contingent upon the quality and professionalism of its personnel. In this context, artificial intelligence technologies can serve as a reliable and valuable tool for the recruitment, assessment, and development of human resources. Automated systems are capable of analysing candidates’ resumes and digital profiles, correlating their qualifications, competencies, and experience with the requirements of specific positions. This enables a wider talent search and promotes a more objective, merit-based selection process.

A particularly significant area is the creation and maintenance of digital profiles for civil servants, which consolidate comprehensive information on education, professional experience, certification outcomes, and ongoing professional development. In scientific and legal doctrine, the digital profile is regarded as a foundational component of the e-government system, facilitating legally significant interactions between the state and individuals within the digital environment (Cherbotareva, 2023). The use of such profiles allows human resource departments to more effectively plan career trajectories, identify skills gaps and training needs, and form a sustainable talent pool. As demonstrated by the implementation of digital technologies in the city of Arkadag, the establishment of a unified information environment enhances transparency in personnel management processes and contributes to strengthening public trust in the civil service system overall.

Public procurement has traditionally been regarded as one of the most complex areas of public administration due to the volume of information processed and the necessity of complying with numerous procedural requirements. The use of artificial intelligence algorithms enables automated verification of procurement documentation for regulatory compliance, monitoring of price proposals, and identification of potentially inefficient expenditures. Intelligent systems can also analyse supplier information, including reliability and contract performance, thereby supporting better informed decisions in contractor selection. It is important to emphasise that the automation of oversight procedures does not replace the work of authorised officials, but rather provides them with additional analytical tools, allowing a focus on complex and non-standard cases.

The city of Arkadag illustrates the significant potential of digital technologies in urban development and infrastructure management. Intelligent systems integrated into the city’s infrastructure make it possible to optimise traffic flows, manage power consumption, monitor utility networks, and ensure rapid responses to emergency situations. Prospective applications of artificial intelligence technologies in urban development include modelling alternative territorial development scenarios, analysing transport accessibility, and assessing the environmental impact of new construction projects. This creates the conditions for more informed and scientifically grounded decisions in territorial planning, thereby directly contributing to an improved quality of life.

At the same time, consideration of promising areas for the integration of artificial intelligence into government agencies necessitates close attention to system reliability and compliance with legal requirements throughout their operation. Law enforcement practice has developed specific approaches aimed at minimising the potential negative consequences associated with the use of algorithmic systems. Artificial intelligence technologies, like other complex technical systems, require comprehensive verification and testing at the implementation stage. A key prerequisite for their reliable functioning is the use of high-quality source data for algorithm training, as well as regular software updates to reflect identified shortcomings and changes in regulatory frameworks. Government agencies intending to implement AI systems must possess the necessary competencies to evaluate their effectiveness and ensure proper oversight of their operation.

The processing of personal data in the use of AI technologies is regulated also by the Law of Turkmenistan “On Information about Private Life and Its Protection”, which establishes requirements for obtaining the consent of personal data subjects (except in cases established by law), as well as imposes obligations on operators to ensure the security of the information being processed.

The introduction of AI-based monitoring of civil servants’ discipline and professional ethics is of particular relevance to the digital transformation of the city of Arkadag. In this context, algorithms assess the quality, completeness, and tone of officials’ responses to citizens’ inquiries within the e-Government system. The primary legal risk in this area lies within labour and administrative relations, specifically the risk of unjustified disciplinary measures based exclusively on automated system outputs that may fail to account for the complexity or exceptional circumstances of individual cases. The proposed model underscores that AI should serve solely as a supporting analytical tool, while legal responsibility for personnel decisions must remain exclusively with the head of the relevant agency. This approach safeguards civil servants against ‘algorithmic arbitrariness’ and upholds the principle of fairness in public administration.

Table 1. Key areas of application and expected outcomes of digital transformation

Area of application	Key functions of AI	Expected effect
<i>Public services</i>	Real-time processing of requests, document verification, and automated drafting of responses.	Reduced waiting times and a shift toward proactive provision of information to citizens.
<i>HR management policy</i>	Resume screening, maintenance of digital profiles of civil servants, and candidate selection.	Greater objectivity in recruitment, more effective career planning, and increased transparency.
<i>Public procurement</i>	Automated document verification, price monitoring, and supplier due diligence.	Identification of inefficient expenditures and substantiated selection of contractors.
<i>Smart City (Arkadag)</i>	Optimisation of traffic flows, energy management, and network performance monitoring.	Timely response to incidents and improved quality of life for the population.

The deployment of intelligent systems in public administration is carried out in strict compliance with these requirements, thereby ensuring the protection of citizens’ rights. A key

principle governing the use of artificial intelligence in public administration is the preservation of mechanisms for reviewing and appealing decisions that affect the rights and legitimate interests of citizens. To this end, the implementation of AI systems includes mechanisms for recording decision-making processes and enabling their subsequent analysis by authorised officials. The final decision on matters of legal significance is always taken by the responsible official in accordance with established procedures.

PUBLIC INITIATIVES AND DEVELOPMENT VECTORS

In January 2026, at a meeting of the Cabinet of Ministers, the President of Turkmenistan, Serdar Berdimuhamedov, outlined new priorities for the country's technological development, including the adoption of a systematic approach to the implementation of artificial intelligence technologies. During the meeting, a number of promising proposals aimed at advancing the digital economy were presented, including initiatives to establish a legal framework governing the use of AI.⁷ Taking global trends into account, Turkmenistan plans to implement a comprehensive set of measures, including the development of rules for the use of artificial intelligence technologies and the delineation of responsibilities among relevant parties; the definition of the powers and functions of government bodies in matters related to interaction with AI systems; and the development of national standards and technical regulations for innovative products.

In approving these proposals, the Head of State instructed that the necessary work be undertaken, emphasising the importance of advancing artificial intelligence and expanding international cooperation in this field. In pursuance of these instructions, a number of conceptual proposals can be developed for establishing a national legal framework governing liability for damage caused by the use of AI systems in public service.

The city of Arkadag, Turkmenistan's first 'smart city', is of particular significance for testing new approaches to the legal regulation of artificial intelligence. It represents not only a major architectural achievement, but also a technological model for future systems of public governance. The successful integration of digital technologies into urban infrastructure and administrative processes creates unique conditions for piloting legal innovations in the field of AI.

In this context, it appears appropriate to consider granting Arkadag the status of an experimental legal platform (regulatory sandbox) for testing rules on liability for harm caused by AI systems. This approach is widely used internationally to develop legal mechanisms in controlled environments, enabling the identification of regulatory gaps and shortcomings before such frameworks are extended nationwide.

For the practical implementation of the proposed three-tier model in the city of Arkadag, it is necessary to institutionalise the following mechanisms:

1. Administrative regulations should include provisions establishing the personal liability of officials for final decisions made with the use of artificial intelligence. This measure would eliminate the legal vacuum in which errors or adverse outcomes are attributed to a presumed 'programme malfunction'.
2. Civil legislation should enshrine the principle of strict (no fault) liability of government bodies toward citizens. Under this approach, affected individuals

⁷ Decree of the President of Turkmenistan on the development of the digital economy and the implementation of artificial intelligence technologies. Neutral Turkmenistan, 23 January 2026.

would receive compensation from the state through a ‘one stop shop’ mechanism, thereby ensuring effective protection of human rights.

3. Standard government contracts should incorporate a mandatory clause providing for the state’s right of recourse against the developer (vendor). To establish a reliable evidentiary basis for exercising this right, contracts should require an independent technical audit of the AI system’s source code at the acceptance stage. Absent proper documentation of technical parameters and confirmation of the absence of critical vulnerabilities at the time of project delivery, it would be extremely difficult for the state to prove developer fault in the event of an algorithmic failure and subsequent legal dispute.

This approach transforms legal liability from an abstract legal concept into a practical instrument for managing the risks associated with digitalisation.

Table 2. Dynamics of digital lawmaking in Turkmenistan

Period	Key developments	AI-related focus
2017	Adoption of the Law “On Information about Private Life and Its Protection”	Data protection for AI training
2022–2024	Active cooperation with OSCE and UNESCO	Development of ethical standards for AI algorithms
January 2026	Presidential initiative on artificial intelligence	Defining the responsibilities of government authorities in relation to AI

The experience gained through the implementation of an experimental legal regime in the city of Arkadag can be systematised and subsequently applied in the preparation of finalised legislative acts for nationwide use in Turkmenistan. This will help minimise the risk of enforcement errors and support the development of a balanced and effective legal framework for the use of artificial intelligence in public administration.

ANALYSIS OF LEGAL PREREQUISITES AND JUSTIFICATION FOR SPECIAL AI LEGISLATION

An analysis of Turkmenistan’s existing legal framework in the field of artificial intelligence indicates that the necessary prerequisites have been established for a transition to systematic regulation in this area. The current Law “On Information about Private Life and Its Protection” provides a foundational basis for regulating data processing, which is a core element underpinning the functioning of AI systems. Moreover, active international cooperation with organisations such as the OSCE, UNESCO, and UNDP in the areas of digital development and human rights facilitates the incorporation of advanced international approaches into national legal practice.

At the same time, comprehensive legislation specifically dedicated to artificial intelligence, and addressing its distinctive characteristics as an object of legal regulation, remains at an early stage of development. This situation necessitates the formulation and adoption of a coherent system of regulatory legal acts aimed at ensuring uniform and consistent regulation of relations arising from the creation, deployment, and operation of AI technologies in public administration.

Establishing an effective legal liability framework for harm caused by artificial intelligence has

significance that extends beyond narrowly defined legal concerns and carries important socioeconomic implications. Scholars note that legal uncertainty regarding liability for the use of AI systems in the public sector may hinder innovation and undermine public trust in government institutions (Vasiliev, 2024).

In this context, firstly, the existence of clear and comprehensible rules for allocating responsibility plays a crucial role in strengthening citizens' trust in the digital state. When individuals understand who bears responsibility for decisions made with the use of AI, as well as the mechanisms and grounds for protecting their rights, they are more confident in interacting with automated systems. This trust, in turn, is a key precondition for the successful introduction of digital technologies in public administration, as the absence of public acceptance can render even the most advanced technological solutions ineffective.

Secondly, the development of a modern and balanced legal framework for artificial intelligence enhances Turkmenistan's investment appeal. Both domestic and foreign investors tend to favour jurisdictions with predictable and stable legal environments, in which the risks associated with the deployment of innovative technologies are clearly defined and effectively managed. The creation of favourable legal conditions for the development and application of AI technologies promotes investment in the digital economy, supports the growth of domestic IT companies, and contributes to the creation of new high technology jobs.

Thirdly, the development of national legislation on liability related to artificial intelligence, aligned with international standards and informed by best international practices, strengthens Turkmenistan's international standing as a state that consistently pursues digital transformation while ensuring the responsible use of innovative technologies. This, in turn, lays the groundwork for expanding international cooperation, facilitating the exchange of experience, and participating in global initiatives aimed at regulating artificial intelligence.

To ensure effective regulation, it is proposed to adopt a risk-based approach that classifies AI systems according to the degree of their impact on the rights of citizens. Of particular relevance for the city of Arkadag is the use of AI systems for monitoring civil servants' performance discipline and professional ethics. As such systems have a direct effect on HR management, they should be classified as high risk and subject to mandatory managerial oversight in order to prevent "algorithmic arbitrariness".

Table 3. Matrix of responsibility distribution by areas of AI application

Sphere	Risk	Who is responsible?	Type of liability
HR management	Algorithmic discrimination in recruitment and selection	State	Public law liability
Social Security	Technical errors in profile data	Developer and Operator	Civil liability (right of recourse) and disciplinary liability
Monitoring of civil servants	Ethical violations, and unjustified disciplinary penalties	Head of the relevant authority	Disciplinary liability (personal)
Urban infrastructure (city of Arkadag)	Technogenic failure of control systems	System developer	Civil contractual liability

The practical implementation of the previously substantiated mixed liability model in the city of Arkadag requires targeted legislative amendments. In particular, it is proposed to

supplement the Law of Turkmenistan “On Civil Service” with provisions establishing the personal liability of civil servants for verifying and approving decisions made with the involvement of artificial intelligence. In addition, standard government contracts should be amended to include provisions imposing full financial liability on developers for software defects.

CONCLUSIONS

The study substantiates the author’s three tier liability model, specifically adapted to the legal system of Turkmenistan. The principal advantage of the proposed approach lies in the clear allocation of risks among the state, civil servants, and technology developers, which eliminates legal deadlocks while preserving the human centred character of national legislation. Turkmenistan’s experience in this field may serve as a valuable reference for other developing states seeking to balance rapid digital transformation with the preservation of sovereign legal traditions. The proposed mechanisms are universal in nature and may be scaled within regional integration frameworks to support the formation of a harmonised digital legal space.

The model is grounded in the principle of no-fault liability of government bodies toward citizens. A “single window” compensation mechanism ensures effective protection of individual rights and sustains public trust in digital public institutions by relieving affected persons from the need to engage in technical disputes with software providers. To enable the practical implementation of this model, the introduction of mandatory independent technical audits of source code within the public procurement system is required. Such audits would provide the state with a robust evidentiary basis for exercising its right of recourse against developers in cases where software defects are identified.

The distinctive legal and administrative status of the city of Arkadag makes it an ideal candidate for functioning as a regulatory sandbox for pilot testing these standards. The experimental implementation of the proposed mechanisms will enable Turkmenistan to mitigate the risks associated with digitalisation and to develop one of the most secure systems of public administration in the region. Ultimately, this approach transforms legal liability from a constraining factor into an effective driver of smart state development, offering the international community a ready to use model of legal resilience in the era of artificial intelligence.

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