THE LAW OF THE ALGORITHMIC STATE IN BULGARIA

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Abstract

The article examines the legal framework and practical use of algorithms and artificial intelligence by organs of the public administration in Bulgaria. It reveals the existing lacunae in the law and reluctance on the part of the public bodies, which makes them ineffective and poses risks to the fundamental rights of individuals and democratic society. The paper provides a true and up-to-date snapshot of the issue explored, supported by a survey conducted directly with Bulgarian public institutions mapping the use of digital technology by the public authorities. In Bulgaria, the algorithmic state is perceived narrowly as E-government, and algorithmic technology is reduced to information and communication systems, thereby placing the focus predominantly on data security, data quality, and the interoperability of the systems at the expense of broader considerations. The study demonstrates that Bulgarian law and legal scholarship lag behind in dealing with the issue of automated decision-making in the public sector and in developing safeguards against potential infringements of human rights. Thus, it highlights the gaps to be filled by future legislation and scholarly debate on artificial intelligence (AI) implementation in the public sector.

TABLE OF CONTENTS

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1. Introduction

Bulgaria does not have a single comprehensive legal act dedicated solely to algorithmic automation and/or AI. While there is no specific act focused solely on those issues, there is a broader legal framework that sets out the foundation for the use of automated systems by the public authorities, which aims mainly to ensure the quality of the datasets, their security, stability and interoperability. Further, in June 2024, the European Union adopted Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on AI Act), which applies to both private and public bodies and which will be fully applicable in most parts from 2 August 2026[1]. Public authorities will mostly qualify as AI deployers and must become compliant with the applicable requirements introduced by the act. With the support of EU codes of practice, rules on generative-purpose AI and AI high-risk standardisation papers, etc. to be prepared in the future, Bulgarian the public authorities will have to classify different AI risk levels and meet the respective

[1] Certain provisions of the AI Act will take effect earlier; for example, Chapters I and II will apply from February 2, 2025. Other provisions, such as Article 6(1) and its related obligations, will come into effect on August 2, 2027.

obligations imposed for unacceptable, high, and limited AI risk categories.

Leaving aside the newly adopted AI Act in the EU, it is important to note at the outset that there is no clear understanding of the terms "automated algorithms" and "artificial intelligence" neither in Bulgarian legislation nor in legal scholarship. These terms are not present in the terminology and vocabulary of Bulgarian laws and therefore no legal definition for them is available.

2. Algorithmic Terminology in Bulgarian Law and Strategic Documents

2.1. Algorithms in Bulgarian Law

Bulgarian legislation tends to be quite resilient to incorporating any kind of algorithmic and technological aspects into governance and administration.

The analysis of the legal framework in Bulgaria reveals a very rare use of the term "algorithm" or its derivatives. Algorithms are acknowledged in a few legal acts regulating spheres that use them as expert tools, such as:

- "algorithm for the interaction between the institutions in the system of pre-school and school education and the directorates of 'social assistance', regarding the provision of support for the personal development of children and students"[2];
- "drug treatment algorithms" (Medicinal Products in Human Medicine Act[3]);
- "algorithms for the calculation of the mode factors and the quantity of combined electricity produced by combined heat and power installations" (Regulation No. RD-16-267 of 19 March 2008 on the Determination of the Amount of Electricity Produced from Combined Heat and Power Generation[4]).

These acts use the term "algorithm" in its most common meaning of a predetermined step-by-step set of rules or instructions

[2] Issued by the Ministry of Education and Science on 9 May 2019. The algorithm was agreed upon between the Minister of Education and Science and the Minister of Employment and Social Policy.
[3] Prom. SG. 30/13 April 2007.
[4] Issued by the Minister for Economic Affairs and Energy, Prom. SG 37/8 April 2008.

to be followed. They do not imply any reference to computer algorithms, algorithmic software, or similar. It should be noted, however, that such terminology has already started to become part of Bulgarian legislation, although not in the field of public law. In 2024 for the first time the concept of "algorithmic management" in the context of telework was introduced by the Labour Code[5].

Another legally defined algorithmic-related term is "algorithmic trade", which was introduced by the Markets of Financial Instruments Act[6] with the meaning of trade with financial instruments, in which the individual parameters of the order are defined automatically by a computer algorithm (§ 1, point 30 of the Additional provisions). The Lawyers Act[7] employs the phrase "algorithms of transferring information", which pertains to the submission of applications and the decisions of the Supreme Council of Advocates, respectively of the Councils of Advocates. These algorithms dictate how information is fed into the relevant fields of the information system, as determined by the Supreme Council of Advocates.

Insofar as the concept of the algorithmic state in Bulgarian law is largely embraced by the idea of the E-government, the regulation of algorithms in public law is essentially concealed in the terminology of "automated information systems", "automated processing", and "information and communication systems".

2.2. The Bulgarian National AI Strategy

The obscurity and confusion about the terms "algorithmic automation" and "AI" in Bulgaria is apparent in the existing national plans and strategies for digitisation and AI. The term "algorithm" is part of the definition of artificial intelligence in the Bulgarian AI Strategy, which itself forms part of the broad Bulgarian Digitalisation Strategy. In fact, in Bulgaria, AI and related issues are perceived from the perspective, and are considered part, of the digital transformation process.

In December 2020, the Bulgarian government published its National AI strategy: "Concept for the Development of Artificial Intelligence in Bulgaria until 2030" (the Concept)[8]. It builds upon

[5] Art. 107h, paragraphs 11 and 12, of the Labour Code, Prom. SG. 26/1 April 1986.
[6] Prom. SG 15/16 February 2018.
[7] Prom. SG 55/25 June 2004.
[8] At https://www.mtc.government.bg/en/category/157/concept-development-artificial-intelligence-bulgaria-until-2030, accessed 30 July 2024.

and enhances prior national strategy reports, including the Digital Transformation of Bulgaria 2020-2030[9] and the National Digital Bulgaria 2025 Programme with its roadmap[10]. Algorithms, algorithmic autonomous technologies, and related terms are not mentioned in those two strategic and action plan documents. The first document, on the Digital Transformation of Bulgaria 2020-2030, placed AI alongside technologies such as 5G networks, the Internet of Things, Big Data, robotics, blockchain, and 3D printing. The second document, on the National Digital Bulgaria Programme 2025, placed AI in the list of key technologies together with the "Internet of things", simulations, augmented/virtual reality (VR/AR), autonomous robots, cloud technologies (Cloud computing), three-dimensional/additive printing (3D printing), horizontal and vertical system integration, large data (Big Data), machine learning, intelligent mobile applications, blockchain technologies, digital platforms, etc. Artificial intelligence and machine learning are defined together as systems that exhibit intelligent behaviour by analysing their environment and, with some degree of autonomy, taking action to achieve specific goals. It is further pointed out that AI-based systems can exist on their own as software (e.g. voice assistants, image analysis software, search engines, voice and face recognition systems), or they can be implemented in hardware devices (e.g. advanced robots, autonomous cars, drones or "Internet of Things" applications).

Against this setting, the National AI strategy was based on a framework established by scientists working at the Bulgarian Academy of Sciences[11] and further developed by the experts at the

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[9] At https://www.mtitc.government.bg/sites/default/files/cifrovatransformaciyanabulgariyazaperioda2020-2030.pdf, accessed 30 July 2024.
This Strategy defines the vision and policy objectives for digital transformation of the Republic of Bulgaria up to 2030. It takes into account the goals of the UN 2030 Agenda for Sustainable Development and the use of new technologies to achieve them, as well as strategic documents of the European Commission: "Europe fit for the digital age", "Building Europe's digital future", "A new industrial strategy for Europe", etc.

[10] The National "Digital Bulgaria 2025" Program and Road Map for its implementation were adopted with Council of Ministers Decision No. 730/05 December 2019. See https://www.mtc.government.bg/en/category/85/national-program-digital-bulgaria-2025-and-road-map-its-implementation-are-adopted-cm-decision-no73005-12-2019, accessed 30 July 2024).

[11] See https://www.bas.bg/?p=24551&lang=en, accessed 30 July 2024.

Ministry of Transport, Information Technology, and Communications. The Concept has outlined policy initiatives for advancing AI in Bulgaria from 2020 to 2030. It has also identified main areas of impact such as infrastructure and data availability, research and innovation capacity, knowledge and skills, and building trust in society.

The Concept for the Development of Artificial Intelligence in Bulgaria by 2030 is the first document in Bulgaria defining AI. The definition is taken from the EU White Paper on Artificial Intelligence[12]: AI is a collection of technologies that combine data, algorithms, and computing power. The definition seems overarching enough to include numerous subspecies, which the document does not try to list as specific illustrations. Still, some idea of the Strategy's understanding of AI becomes visible from the statistics it provides for the applications of AI, particularly in the public sector. The strategy refers to EC – AI Watch – Artificial Intelligence in public services[13], showing data on the use of chatbots, intelligent digital assistants, virtual agents, and recommendation systems; predictive analytics, simulation and data visualisation; computer vision and identity recognition; expert and rule-based systems, algorithmic decision-making; natural language processing, text mining and speech analytics.

The Concept outlines the algorithmic foundations of AI by pointing out that the main elements that compose AI are "data" and "algorithms". The Strategy highlights two modern trends – data coming to the fore in the field of AI and a shift from algorithms to data in the field of machine learning. This observation ends in a proposal suggesting Bulgaria to focus on technological specialisation in the field of the data economy.

While the above-listed government documents demonstrate the benefits and advantages related to technology in the era of the fourth industrial revolution, they also express some concern, warning about potential threats and risks related to AI. These refer for instance to the possible lack of transparency in the decision-

[12] European Commission, White Paper on Artificial Intelligence: a European approach to excellence and trust, Brussels, 19 February 2020, COM(2020) 65 final, https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en, accessed 30 July 2024.
[13] EC – AI Watch – Artificial Intelligence in public services, 3 July 2020, https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/ai-watchartificial-intelligence-public-services, accessed 30 July 2024.

making process, invasion of privacy, disrespect for dignity, and risk of biased, manipulated, and discriminatory decisions. Topics of product liability and accountability are also vaguely sketched out without being further explored or analysed. Briefly, the documents make a statement for a trustworthy AI with a legal framework that safeguards human rights and freedoms. They recommend that ethical principles governing the design and deployment of AI systems be established early in the process. However, side by side with that, the documents raise concerns about AI design and use not being overregulated as this may stifle technological innovations and may have a chilling effect on digital transformation. In line with this, the Strategy recalls – and refers to – the Law on limiting administrative regulation and administrative control over economic activity[14].

Neither the national Programs nor the AI Strategy envisage a general national legal framework to regulate automated algorithmic technology and/or AI in the near future. Instead, there is a heavy reliance on EU legislation to provide legal regulation and foundation for digital transformation and AI. This holds true not only for general AI laws, but also for anticipated sector-specific regulations, such as those concerning the EU legislative framework for the cross-border acceptance of electronic information for freight transport and the harmonised EU rules governing cashless payments.

The national action plan includes empirical identification of potential threats, AI risk assessment, the drafting of sector-specific ethical guidelines, the formation of ethical commissions, the establishment of public-private partnerships, and the creation of public-private datasets.

Technology is postulated as a means, not an end, in digital transformation. As far as public authorities are concerned, the Strategy for digital transformation sets a goal of enhancing the effectiveness of public services and facilitating a transition from traditional data to linked data. Practically, this is understood as making administrative services digitally accessible, shifting to large-scale electronic communication between citizens/businesses and the state, and eliminating the use of paper documents to the benefit of electronic ones. In the AI Strategy, public authorities are considered "AI users", and the AI legal framework is presented as

[14] Prom. SG 55/17 June 2003.

a sector enabling and creating conditions for the development and deployment of AI.

3. Bulgarian e-Government and the Introduction of Automated Systems

To date, there is neither a general national legal basis for the use of algorithmic automation and/or AI, nor specific rules applicable in this area for public authorities. Bulgarian legislation does not impose any legal prohibition on the use of algorithmic automation or AI by public bodies. Although there are no specific rules that explicitly encourage public authorities to experiment with algorithmic automation and/or AI, there do exist legislative provisions that allow such use and experimentation. In Bulgaria, AI-related technology and its applications in the public sector are seen as part of the digital transformation of public administration. Therefore, the primary focus is on the concept of electronic government, coming with administrative services provided via electronic means that require massive datasets and systems, enabling the automated interoperability of databases.

The legal framework for e-Government is mainly concerned with building the digital infrastructure, which will ensure the foundations for the efficient provision of administrative digital services. Therefore, applicable legislation predominantly governs the construction and use of automated systems in the public sector and encompasses laws and regulations related to digital governance, data protection, electronic communications, and cybersecurity. Some acts set out the general framework for building e-Government; others refer to specific sectors; still other pieces of legislation deal with the digital data infrastructure and information exchange. This results in fragmentation of the legal framework and the overlap of legal domains.

3.1. The General Framework

The key Bulgarian legal acts that establish the framework for e-Government are listed below.

The E-Government Act (EGA)[15] sets forth the principles and guidelines for the implementation of electronic governance in Bulgaria. It deals with electronic documents, electronic registers,

[15] Prom. SG. 46/12 June 2007.

and administrative services provided via electronic means, the use of information and communication technologies by the public administration, etc. The act explicitly states that it does not apply to classified information or the operations of the Ministry of Defence, the Ministry of the Interior, the State Agency for National Security, the State Intelligence Agency, the State Agency for Technical Operations, the "Military Intelligence" Service, and the National Service for Protection, except in cases involving the provision of administrative services by electronic means and the exchange of electronic documents between administrative authorities.

The EGA promotes the use of information and communication technologies (ICT) by public authorities to improve the delivery of electronic administrative services, enhance automation of the administrative process, and ensure the efficient and effective functioning of the institutions. One of its primary aims is to regulate how the institutions utilise ICT (Article 1, paragraph 1, item 5). Those systems are defined as technologies for creating, processing, storing, and exchanging digital information in various formats supported by hardware (§ 1, p. 40 Additional provisions).

The EGA provides the legal basis for automating electronic administrative services and sets up the legal framework for the automated exchange and processing of electronic documents. It ensures the interoperability of the automated systems, which can communicate and share data. This interconnection of the automated systems strengthens seamless data exchange and flawless service delivery. It further mandates the implementation of security measures to protect automated systems and the data they process. It also requires measures to ensure the integrity and authenticity of electronic documents and automated transactions; it also provides for the use of electronic identification.

The specific technical requirements for information systems and the requirements for automated exchange of electronic documents as internal electronic administrative services are set out in the Regulation on the general requirements for information systems, registers, and electronic administrative services[16]. The Regulation addresses various issues, including the technical requirements for accessing electronic administrative services, policies for graphical and other interfaces used by electronic

[16] Adopted by Decree of the Council of Ministers No. 3 of 9.01.2017, Prom. SG 5/17 January 2017.

administrative service providers, and formats and mandatory requisites for electronic documents. It also covers specific requirements for information systems, methods for establishing the integrity and authorship of electronic statements, procedures for storing electronic documents, maintaining the register of standards, and periodic data backup and storage.

The key principles for information and communication systems: accessibility, integrity, availability, and confidentiality of information throughout their entire life cycle – creation, processing, storage, transfer, and destruction, are further detailed in the following secondary legislation:

- Regulation on the Terms and Conditions for Determining the Measures for the Protection of the Information and Communication Systems of Strategic Sites Important for National Security and Implementation of Control[17];
- Regulation on the Minimum Requirements for Network and Information Security[18];
- Regulation on the Security of Communication and Information Systems[19].

The security and stability of information systems are further strengthened by the Cyber Security Act[20] and Regulation (EU) No 910/2014 of the European Parliament and the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market, which repeals Directive 1999/93/EC. The Bulgarian Cyber Security Act[21] establishes the framework for safeguarding network and information systems in Bulgaria against cyber threats. By definition, these systems encompass any device or group of interconnected devices that automatically process digital data through a program, as well as the digital data stored, processed, retrieved or transmitted by such systems.

The Electronic Communications Act[22] governs the provision of electronic communication networks and services in Bulgaria. It

[17] Adopted by Decree of the Council of Ministers No. 256 of 10 October 2019, Prom. SG 81/15 October 2019.
[18] Adopted by Decree of the Council of Ministers No. 186 of 26 July 2019, Prom. SG 59/26 July 2019.
[19] Adopted by Decree of the Council of Ministers No. 28 of 24 February 2020, Prom. SG 18/28 February 2020.
[20] Prom. SG. 94/13 November 2018.
[21] Prom. SG. 94/13 November 2018.
[22] Prom. SG. 41/22 May 2007.

sets out the legal requirements for electronic communications, including those involving automated systems and services, to ensure security, reliability, and data protection.

Information systems are subject to legal regulations even during the preparation of public procurement bidding documentation. When public procurement involves the construction and upgrading of the software components of information systems, the technical assignments and specifications must be prepared in a standardised form as mandated by law[23].

It should be further added that the General Data Protection Regulation (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC – GDPR), which provides a comprehensive framework for data protection and privacy in the European Union, applies in Bulgaria. It regulates the processing of personal data by automated means, ensuring that individuals' privacy rights are protected. The standards and requirements established by GDPR are implemented and further reinforced in Bulgaria by the Protection of Personal Data Act (PPDA)[24], the Electronic Communications Act[25], and the E-Commerce Act[26].

3.2. Automated Systems in Special Sectors

In daily operations, public authorities rely on automated systems mostly for keeping records and information exchange among the institutions. The use of such automated systems is regulated in parliamentary and secondary legislation. Examples of sector-specific regulations dealing with information systems in their respective fields include the following:

– Article 378 of the Judiciary Act[27] establishes a "Unified Information System for Combating Crime", comprising a collection of automated information systems. This system includes a central component (core) that connects to the systems of the judiciary and

[23] Art. 35, para. 3 of the Regulation on the general requirements for information systems, registers and electronic administrative services.
[24] Prom. SG. 1/4 January 2002.
[25] Prom. SG. 41/22 May 2007.
[26] Prom. SG. 51/23 June 2006.
[27] Prom. SG. 64/7 August 2007.

the executive, processing information on events and objects, and providing integrated information for crime prevention activities.

– The Ministry of Interior Act[28] mentions several automated systems, such as the centralised electronic system and automated technical means for traffic control (Article 98), the Automated Fingerprint Identification System "EURODAC" (Article 50a, item 5), and integrated and automated systems for observation (Article 102, paragraph 1, item14). Additionally, the Regulation on the procedure for creating and removing police registration[29] indicates that the police authorities use not only the Automated Fingerprint Identification System (AFIS) but also the Automated Information System (AIS), "Integrated Regional Police System (IRPS)", and other automated information funds for general use of the Ministry of the Interior.

– According to the Protection of Public Order at Sporting Events Act[30], the Minister of the Interior is responsible for establishing and maintaining a Joint Automated Register. This register contains data about individuals subject to penalties, compulsory administrative measures or sanctions for unlawful behaviour during sporting events, etc.

– Regulation No. 1 of 8 January 2008 on automated information systems in the judiciary[31] outlines the procedures for creating, implementing, using, and developing AIS within the judiciary. The information services for judicial activities must be based on AIS approved by both the Supreme Judicial Council (SJC) and the Minister of Justice.

– Article 15 of the National Emergency System with a Single European Call Number 112 Act[32] mandates that outgoing and incoming calls at 112 Centres be automatically recorded in an emergency call register. The National Emergency Centres must establish contact points for information exchange with the 112 Centres and create positions for trained employees to ensure continuous, direct, and automatic interaction with the information system of the 112 Centres. It is noteworthy that the operators at 112 Centres are prohibited from collecting information related to a

[28] Prom. SG. 53/27 June 2014.
[29] Adopted by Decree of the Council of Ministers No. 336 of 24 October 2014, Prom. SG 90/31 October 2014.
[30] Prom. SG. 96/29 October 2004.
[31] Issued by the Minister of Justice, Prom. SG. 6/18 January 2008.
[32] Prom. SG. 102/28 November 2008.

caller's race, ethnicity, origin, religion, beliefs, political affiliation, personal or social status, sexual orientation, or property status.

– Regulation No. 48 of 1 March 2012 on the conditions and procedure for the functioning of the national early warning and announcement system for the executive authorities and the population in the event of disaster and air hazard notification[33] mentions the existence of an Automated Public Announcement System, maintained by the Ministry of Interior.

– Regulation No. 15 of 13 April 2011 on air navigation information services[34] mandates the implementation of an Automated Air Navigation System for pre-flight information. This system ensures that air navigation service providers supply specific information, which will be accessible to flight operations personnel, including crewmembers, for self-study, flight planning, and flight information services.

– Regulation No. H-2 of 30 May 2007 on the technical and functional requirements for automated systems for material accounting in duty-free trade outlets[35] lays down the minimum technical and functional requirements for these automated material record-keeping systems in duty-free outlets, as well as the procedure for their approval. The automated systems provide a permanent and continuous electronic connection in real-time with the customs office at the location of the duty-free outlet for the automated transmission of all data from the fiscal devices contained in the fiscal receipt for sales made in the duty-free outlet.

– Regulation No. H-6 of 21 December 2022 on the functioning of the National Health Information System[36] regulates the conditions and procedures for maintaining the registers, information databases, and systems within the NHIS, as well as the exchange of information with other registers, databases, and systems, and access to information in electronic health records. The NHIS is designed as an integration platform with e-Government resources, facilitating remote medical services such as telemedicine, tele-diagnosis, and telemonitoring, in accordance with normative acts.

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[33] Adopted by Decree of the Council of Ministers No. 48 of 1 March 2012, Prom. SG. 20/9 March 2012.

[34] Issued by the Minister of Transport, Information Technologies and Communications, Prom. SG. 37/13 May 2011.

[35] Issued by the Minister of Finances, Prom. SG. 45/8 June 2007.

[36] Issued by the Minister of Healthcare, Prom. SG. 103/24 December 2022.

– Regulation No. 50 of 15 February 2021, on the terms and conditions for registration and identification of participants and the storage of data on organised online betting within the territory of the Republic of Bulgaria, and for the submission of gambling information to a server of the National Revenue Agency[37] mandates the automated submission of information and online registration of each transaction in the National Revenue Agency (NRA) system for online betting, electronic gaming, and gaming under the Gambling Act[38].

– Regulation on the conditions and procedures for the creation, maintenance, and use of the information systems of the cadastre and the property register, for access to the data in them, and access to the data in other specialised information systems[39] sets the rules for automated services delivered by the systems of the cadastre and the property register, automated data exchange via electronic means between the two systems, automated access to systems, and automated notifications sent to a specified email address or through a mobile service operator.

– Instruction No. I-1 of 12 April 2016 on the Conditions and Procedures for the Exchange of Information between the Bodies of the Ministry of the Interior and the Customs Agency through Access to Automated Information Systems includes the use of AIS in its title[40].

– Instruction No. I-3 of 16 May 2024 on the Conditions and Procedure for Organising, Maintaining and Accessing the Electronic Register of Servicemen and Civilian Employees provides for an Information System referred to as "Automated Human Resources Management System"[41].

– Rules for the Automated Information Systems in the Sofia Municipality[42] stipulate that AIS must be developed and constructed to function as integrable components within the phased establishment of the E-municipality, ensuring integration where necessary and feasible.

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[37] Adopted by Decree of the Council of Ministers No. 50 of 15 February 2021, Prom. SG. 14/17 February 2021.
[38] Prom. SG. 26/30 March 2012.
[39] Prom. SG. 79/08 September 2020.
[40] Issued by the Minister of Finance and the Minister of the Interior, Prom. SG. 32/22 April 2016.
[41] Issued by the Minister of Defence, Prom. SG. 45/28 May 2024.
[42] Adopted by Resolution No. 814 of Minutes No. 28 of 18 December 2008 of Sofia Municipal Council.

3.3. Infrastructures for Digital Data Management

In addition to general and sectoral legislation on e-Government, there are several other automated systems for data storing and sharing.

Art. 15d of the Access to Public Information Act[43] provides that the Ministry of e-Government shall establish and maintain an Open Data Portal[44]. The Open Data Portal is a unified, central, web-based public information system designed to publish and manage reusable information in an open, machine-readable format, complete with associated metadata. It is established to ensure that public sector organisations in Bulgaria fulfil their obligations under Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, amending Directive 2013/37/EU of 26 June 2013. The procedure for, and manner of, publishing the respective public information are determined by a regulation adopted by the Council of Ministers[45].

Further, in accordance with the requirements of Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007, establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), and with Art. 12, para 4 of the Spatial Data Access Act[46], the Ministry of e-Government has developed and maintains a National Spatial Data Portal (INSPIRE)[47]. The portal is robust and user-friendly, offering quick access to all available content of the spatial data sets in a machine-readable format, as specified by the Directive and national law. It allows Bulgarian public administration authorities responsible for collecting, creating, maintaining, and disseminating spatial databases, as well as providing public services, to have shared access to the spatial information datasets they manage and the statutory services related to them. The national portal is linked to the INSPIRE geoportal.

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[43] Prom. SG 55/7 July 2000.

[44] See https://data.egov.bg/, accessed 30 July 2024.

[45] Regulation on Standard Conditions for the Re-use of Public Sector Information and for its Publication in Open Format, Adopted by Decree of the Council of Ministers No. 147 of 20 June 2016 (Prom. SG 48/24 June 2016).

[46] Prom. SG. 19/9 March 2010.

[47] See https://inspire.egov.bg/, accessed 30 July 2024.

Another important data infrastructure is the RegiX inter-registry exchange[48] environment, established in 2014. The RegiX inter-registry exchange enables automated connections among Bulgarian administrative authorities and the registers and information systems they manage. This inter-registry exchange system offers access to registers via a central component, ensuring compliance with interoperability and data exchange requirements. In 2017 by a Council of Ministers' decision,[49] the government implemented measures to reduce the administrative burden on citizens and businesses by eliminating the requirement to submit certain official certification documents in paper form. Technically, the interconnection of the information systems was enabled and facilitated by the inter-registry exchange environment (RegiX). Several certification services were included, enabling the public administration to conduct register queries and automatically retrieve data electronically from various registers, such as the Register of the Population[50], the National Register of Bulgarian Personal Documents,[51] the Joint Register of Foreigners[52], the Register of Institutions in the Preschool and School Education System[53], the Register of completion records for primary education, secondary education, and vocational qualifications[54], the BULSTAT Register[55], the Property Register[56], the Commercial Register[57], the

[48] See https://info-regix.egov.bg/public, accessed 30 July 2024.
[49] Decision issued by the Council of Ministers No. 338/23 June 2017.
[50] Established under the Civil Registration Act (Prom. SG. 67/27 July 1999).
[51] Established under the Bulgarian Personal Documents Act, Prom. SG. 93/11 August 1998.
[52] Established under the Foreigners in the Republic of Bulgaria Act, Prom. SG. 153/23 December 1998.
[53] Established under the Pre-school and School Education Act, Prom. SG. 79/13 October 2015, in force from 01 August 2016.
[54] Regulation No. 8 of 11 August 2016 on Information and Documents for the Pre-school and School Education System for Documents Issued after 1 January 2007, Prom. SG. 66/23 August 2016.
[55] Established under the BULSTAT Register Act, Prom. SG. 39/10 May 2005. The BULSTAT register is an integrated electronic centralised register, maintaining a national data base of non-profit legal entities, joint-venture partnerships, free-lancers, artisans, foreign corporations, or their branches operating in Bulgaria, etc.
[56] Established under the Cadaster and Property Register Act, Prom. SG. 34/25 April 2000.
[57] Established under the Commercial Register and the Non-profit Legal Entities Register Act, Prom. SG. 34/25 April 2006.

Register of Obligations to the Customs Administration[58], and the Register of Administrators and Personal Data Processors who Have Appointed Data Protection Officers[59]. The Minister of e-Government oversees the Register of Registers, which catalogues the registers and databases of primary data controllers. This register of information is maintained as part of the Integrated Information System of the State Administration.

Another decision by the Council of Ministers of 2017 mandated that by 1 September 2017, all administrative authorities in Bulgaria had to update their electronic document exchange systems to comply with a joint technical protocol approved by the Chairman of the State Agency for Electronic Government[60]. An Electronic Messaging Environment (EME) was implemented to streamline document management and flow within the entities of the public administration. For administrations without the technical resources to join the EME, the State Agency for Electronic Government has provided an alternative temporary solution for electronic document exchange: the Secure Electronic Service System[61].

The Ministry of e-Government's project "Cloud e-services for the Administration" is also noteworthy[62]. The project aims to implement an automation platform on the State Hybrid Private Cloud to reengineer and automate work processes in central, regional, and municipal administrations. It will integrate with centralised e-Government systems and the specialised systems of administrative bodies and create a catalogue of automated e-Government services. The project will analyse, optimise, and automate work processes in two phases: one for central and regional administrations, and another for municipal administrations, including the Municipality of Sofia.

The government is further developing an Information System for Centralised Construction and the Maintenance of

[58] Regulation No. H-9 of 7 November 2018 on the Registers Maintained by the Customs Agency, issued by the Minister of Finance, Prom. SG. 94/13 November 2018.

[59] Established under the Protection of Personal Data Act, Prom. SG. 1/04 January 2002.

[60] Decision issued by the Council of Ministers No. 357/29 June 2017.

[61] See https://edelivery.egov.bg, accessed 30 July 2024.

[62] See https://egov.government.bg/wps/portal/ministry-meu/home/programs.projects/projects.progress/cloud-e-service, last accessed 30 July 2024.

Registers[63]. This system aims to automate and optimise processes, reducing data duplication and inconsistencies across different administrative bodies' registers. It will enhance interoperability, control, and monitor data access and dissemination through the implementation of an Interoperability Reference Architecture.

3.4. The Legal Framework for Information Exchange in Public Administration

As the above measures on public data infrastructure show, data exchange is mandatory for state and local government institutions. The unified electronic communication network (EESM) is designed to integrate the corporate networks of ministries, departments, and local administration into a cohesive national information infrastructure while maintaining their information independence, autonomous management, and preventing unregulated access to transmitted information. EESM supports simultaneous transmission of data, voice, and video with guaranteed quality.

In the Republic of Bulgaria, numerous laws address data exchange within public authorities and between the executive and the judiciary. The legislation primarily facilitates free data exchange among public bodies and institutions, rather than focusing on detailed legal procedures. For example, Article 106, paragraph 6 of the Civil Registration Act[64] stipulates that data from the Unified System for Civil Registration and Administrative Service of the Population (USCRASP) is provided free of charge to all providers of electronic administrative services in Bulgaria. Additionally, Chapter 4 of the BULSTAT Register Act[65] details the interaction between the BULSTAT register and other registers, information systems, and government departments and agencies.

In certain instances, public administration departments coordinate their interaction and data exchange through joint secondary legislation, such as Instructions No. I-3 of 26 October 2017 on the Interaction and Exchange of Information Between the National Revenue Agency and the Ministry of Employment and

[63] See https://e-gov.bg/wps/portal/agency/all-projects/projects-DAEU/projects-opdu1/project%20developing%20raos%20and%20iscipr, last accessed 30 July 2024.
[64] Prom. SG. 67/27 July 1999.
[65] Prom. SG. 39/10 May 2005.

Social Policy[66]. In other cases, information exchange is managed through mutual collaboration agreements.

For example, a centralised digital data management infrastructure, based on virtualisation, hosts the servers for the National Revenue Agency's information systems. The NRA utilises interfaces to exchange data with other public authorities, involving connections between databases and servers. Information exchange with other public bodies is conducted according to agreements for interaction with external organisations, which include various procedures and rules governing data exchange between the NRA and other institutions or organisations.

4. Public Authorities' Reliance on Algorithmic Automation in Daily Operations

In general, public administration in Bulgaria does not rely on algorithmic automation or AI in its daily operations. The algorithms used in their daily activities or interactions have rarely been publicised. This statement is made on the basis of the answers given to the authors by major Bulgarian government bodies and administrations.

To accurately and diligently answer the questions in the questionnaire, we conducted a preliminary survey and submitted a request for access to public information under the Access to Public Information Act[67]. According to this act, public information encompasses any information related to life in society in the Republic of Bulgaria, enabling citizens and entities to form their own opinions on the activities of the public bodies required to provide such information. The request asked relevant authorities to supply public information addressing the questions in the questionnaire.

26 out of 29 authorities granted us full access to their information, while three authorities refused us access on the grounds that the requested information was classified. Only five of the authorities that granted access answered positively and stated that they use algorithmic automation or algorithmic technologies. Neither of them returned a reply stating they currently use AI. Still, most of them indicated that they are obliged by law to create, keep,

[66] Issued by the Minister of Finance and the Minister of Labor and Social Policy, Prom. SG. 88/3 November 2017.
[67] Prom. SG. 55/7 July 2000.

use, and maintain information systems and registers, where information is accessible, and presented in formats that are machine readable, with ensured interoperability and the possibility of integration with the interface for the exchange of information.

A possible explanation for the large discrepancy between positive and negative replies concerning the practical use of automated algorithms may be the varying degrees of sector-specific aptitude to apply such algorithms and the disparity of the respondents (mostly ministries, only one municipality, and few government agencies). However, the lack of a clear and uniform understanding of the term "algorithmic automation" could also be a plausible explanation.

This lack of definition or commonly accepted understanding of what algorithmic automation systems or other similar concepts mean makes it possible that even at the moment public administrations practically use algorithms in their daily work without being legally obliged to disclose their use, logic, and mechanism. In its end, this imperils transparency and accountability of the public administration for the use of automated algorithms and/or AI. This regulatory gap is expected to be filled by the new AI Act.

The digital transformation of the public administration in Bulgaria appears to be taking place in stages and seems to be lagging behind more technologically advanced countries. Bulgaria is making strides in integrating algorithmic automation into public administration, though the levels of adoption and sophistication of this technology may vary. At this point, the focus is on efficient e-Government with smooth electronic communication between administration and citizens/businesses, swift and flawless digital administrative services, and secure and stable databases and registers with seamless operational compatibility between them. Efforts to enhance e-government services, as demonstrated above in section 2, aim to increase the efficiency of the public authorities through the automation of various administrative processes like issuing documents, processing of applications for permits and licences, managing public records, conducting compliance checks, and providing online services to citizens and businesses. It is expected that the next phase of customer service will involve the use of chatbots and automated response systems to handle customer inquiries. Thus, levels of automation should shift from technologies that help the administration do away with low-

valued, manual and routine work to technologies that assist humans make decisions and carry out more complex and abstract tasks or finally replacing humans in the decision-making process.

What follows describes the current and prospective uses of algorithmic automation and AI by the Bulgarian administration.

4.1. Current Uses

There are already some notable examples of algorithmic automation in Bulgarian public administration.

For instance, the National Revenue Agency employs automated systems to identify discrepancies[68], monitor compliance with tax laws, streamline processes, and improve the accuracy of tax-related operations and fraud detection. A specific software carries out automated analysis of requests for tax refunds, distant electronic audits[69] as well as automated processing of debtor identification, facilitating the issuance of preservation orders at the debtor's employer[70]. In its reply, the Agency reported it does not use currently AI-driven technologies, but added that steps are being taken to integrate AI to automate information provision and respond to inquiries from citizens and businesses. Ongoing efforts are focused on incorporating AI into specific business processes within the NRA.

The Ministry of Regional Development and Public Works maintains centralised electronic registers – such as the National Population Database, the National Electronic Register of Civil Status Acts, the Register of Unique Civil Numbers, and the National Classifier of Permanent and Present Addresses – that operate at national level operate in full compatibility. They use hi-tech technologies and largely rely on algorithmic automation.

The Ministry of Interior declined to disclose information about their use of AI and algorithmic technologies in their daily operations, stating that this information is classified. Nevertheless, it is evident that their officials and administration heavily rely on such technologies. In July 2023, Bulgaria ratified the Agreement between the Parties to the Police Cooperation Convention for

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[68] https://nra.bg/wps/portal/nra/actualno/nap-preduprejdava-firmi-s-golemi-materoalni-zapasi.

[69] https://pronewsdobrich.bg/izkustven-intelekt-vrashta-sumi-bez-nuzhda-ot-reviziya-i-nasochva-nap-kam-riskovi-igrachi-p169994.

[70] https://www.segabg.com/hot/category-economy/nap-ryazko-uvelichi-zaporite-vurhu-zaplati-i-pensii-na-dluzhnici.

Southeast Europe on the Automated Exchange of DNA Data, Dactyloscopic Data and Vehicle Registration Data[71]. This agreement includes various automated systems such as the AFIS database, a fully automated online search procedure, and automated searching and comparison of DNA profiles.

At the beginning of 2024, the Energy and Water Regulatory Commission started using a specialised software model for energy market analysis. This is an AI-enabled analytical tool, which detects suspicious transactions and alarms for possible market manipulation in the energy markets. The model is designed to ensure the swift and accurate detection and investigation of potential abuses by market participants on natural gas and electricity exchanges.

In recent years the Bulgarian government has been mainly concerned with "digital identity" for citizens, businesses, and government agencies as it is crucial in supporting digital transformation, improving security and enhancing user experiences when accessing both public and private services in the digital age. The Ministry of e-Government has introduced a variety of technologies and policies designed to establish and verify identities in digital spaces. Digital identities began to be used across different systems and in various public and private sectors, including e-Government services, online banking, e-healthcare, e-commerce, etc.

The level of use of algorithmic technologies and AI by the Police and Security sector in Bulgaria is not publicly verifiable, as this information is deemed classified. However, considering Bulgaria's participation in EU and international police cooperation and its integration with systems like the Automated Fingerprint Identification System "EURODAC" and the AFIS database, it can be inferred that Bulgarian police authorities employ facial and biometric recognition technologies, along with other advanced and AI-driven technologies.

Certain cities in Bulgaria have adopted smart traffic management systems that utilise algorithms to optimise traffic flow and reduce congestion. Other cities also plan to implement systems with hundreds of smart video cameras and employ AI for traffic control. The Sofia Municipality Council is considering the use of AI-

[71] Prom. SG. 58/7 July 2023.

driven devices to control and monitor the condition of the municipality's roads.

The digitalisation of healthcare records and automations of some aspects of healthcare management are currently in progress. These steps will improve patient's electronic health dossier management and support diagnostic processes.

4.2. Future Administrative Integration in an AI-Empowered World

Three government ministries are preparing to implement AI in their operations soon[72]. The Ministry of Education and Science will build high-tech, AI equipped classrooms, enhancing connectivity and educational tools to foster an advanced learning environment. The Ministry of Employment and Social Policy plans to develop a platform with adaptive-analytical software capable of learning, processing, and analysing data related to social and solidarity economy. Meanwhile, the Ministry of Health is set to create a National digital platform for medical diagnostics, leveraging AI to enhance the accuracy, speed, and accessibility of healthcare services.

In March 2024, the Bulgarian Institute for Computer Sciences, Artificial Intelligence and Technologies (INSAIT) unveiled BgGPT, the first open language model specifically adapted to the Bulgarian language. Designed to serve the needs of the Bulgarian government, science, business and all Bulgarian citizens, BgGPT represents a significant step in the country's AI strategy[73]. INSAIT has a large-scale strategy for the development and implementation of artificial intelligence in Bulgaria, working closely with private entities and public bodies, including the National Revenue Agency (NRA), which provide data to train the model.

BgGPT is built on the open-source Mistral-7B model, allowing Bulgarian companies and institutions to implement AI with minimal costs, in stark contrast to the substantial expenses associated with proprietary models. INSAIT has encouraged public

[72] This was announced in February 2024 by the Minister of e-Government in a written response to a parliamentary inquiry regarding the integration of AI in the public administration. See https://www.parliament.bg/bg/topical_nature/ID/60019, accessed 31 July 2024.

[73] See https://bggpt.ai/, accessed 31 July 2024.

authorities to adopt BgGPT, making it likely that Bulgarian citizens will soon interact with AI when engaging with the NRA and municipal administrations[74].

The National Evaluation and Accreditation Agency[75], responsible for monitoring the quality in higher education institutions and scientific organisations, is developing an artificial intelligence chatbot to function as an intelligent search engine for information related to the agency's activities. This chatbot will make information about the assessment and accreditation procedures for higher education institutions and scientific organisations more accessible. The planned technologies are categorised as "AI-driven technologies" and their development has been outsourced.

Currently, pilot projects are being explored within the Sofia Municipality administration to implement algorithmic technologies for enhancing internal work processes. These technologies are utilised in the Architecture and Urban Planning Department through the Unified Information System for issuing administrative acts and providing information to users via the Viber channel.

In May 2024, the Bulgarian government approved an agreement to be signed between the Republic of Bulgaria and the International Bank for Reconstruction and Development where the Bank will consult the government specifically on the digital transformation of the public sector.

4.3. Software Development and Training

In developing such measures, Bulgarian public authorities rely mainly on private bodies with recognised expertise in the software development and engineering. For instance, the entire infrastructure for digital data management was developed by private IT companies through public procurement contracts. The Open Data Portal was created by Finite Software Systems EOOD, the National Spatial Data Portal (INSPIRE) was developed by MAPEX AD, and the RegiX inter-registry exchange environment was established by TEHNOLOGIKA EAD[76]. The AI software for combating fraud on the natural gas and electricity exchanges was developed jointly by a team of IBM – "IB ES – BULGARIA" EOOD

[74] See https://bnr.bg/post/101955825, accessed 31 July 2024.
[75] See https://www.neaa.government.bg/en/, accessed 31 July 2024.
[76] On both these registries, see above section 3.3.

and the Energy and Water Regulatory Commission[77]. The National Assessment and Accreditation Agency, which is planning to implement an AI-powered chatbot to function as an intelligent search engine for information related to the agency's activities, contracted an independent contractor for developing the chatbot[78].

All government agencies in Bulgaria provide essential training to their staff employees on the use of various technologies. The Regulation on the Minimum Requirements for Network and Information Security[79] mandates that all entities under its jurisdiction ensure, through internal rules and instructions, that employees involved in relevant processes and activities possess the necessary qualifications, knowledge, and skills to fulfil their responsibilities. This is to minimise the risk of incidents, whether intentional or unintentional.

For example, in the first six months of 2024, staff at the Ministry of Finance successfully completed training on the following topics:

- Collaborative working in a digital environment;
- Information and Media Literacy;
- Fundamentals of Remote Sensing and GIS, High Value Data Processing;
- New technologies in management - blockchain;
- New technologies in management - AI and machine learning;
- New technologies in management - the world of data;
- Cybersecurity: Trojan horse and social engineering;
- Social networks in the public sector - creation and governance;
- Protecting privacy in a digital environment;
- Interactive video and online presentations with Prezi;
- Introduction to Information and Cyber Security (for non-IT experts).

In April 2022 the Minister of Education and Science officially established the terms and conditions for attaining AI expertise in Regulation No. 6 of 7 April 2022 concerning the Acquisition of Qualifications in the Profession "Artificial Intelligence

[77] On this software, see above section 4.1.
[78] See above section 4.2.
[79] Adopted by Decree of the Council of Ministers No. 186 of 26 July 2019, Prom. SG 59/26 July 2019.

Programmer"[80]. The National Agency for Assessment and Accreditation regularly organises training for its employee to enhance their knowledge of new technologies and particularly how to make full use of their access to the registers of the National Centre for Information and Documentation (NACID).

5. Legal Requirements for AI Use to Protect Individuals and Ensure Accountability in Public Administration

To this moment, there is no public awareness or attention in Bulgaria for the possible threats automated algorithms may create for fundamental rights and democratic society. There are no overarching legal requirements concerning privacy, impact assessments, transparency duties, the right to access codes, etc., that apply to the reliance on algorithmic automation/AI by public administration. Instead, the requirements for reliance on algorithmic automation/AI are dispersed across various legal acts and refer predominantly to the quality of datasets, protection of personal data, cybersecurity, and security of the systems and their contained data.

There are substantial rules in both EU and national law governing the security of the information systems and the integrity of the data they contain. These legal safeguards ensure the accuracy and completeness of information, preventing alteration or tampering, and maintaining consistency throughout its lifecycle. Authentication requirements prevent unauthorised access. Additionally, the systems' security is bolstered by comprehensive technical standards and mechanisms for reporting incidents. The network and information systems must be reliable and consistently execute their intended functions without any failures.

Bulgarian anti-discrimination law prohibits all forms of direct and indirect discrimination, implicitly covering the use of algorithmic technologies and AI by public administration. However, there are no specific legal provisions to ensure that these technologies are not used in a discriminatory manner.

An important, though non-consolidated, governing principle can be found in the repeated pattern of some laws to protect individuals in case of automated data processing. It refers to the legal obligation to ensure human intervention. This can be

[80] Issued by the Minister of Education and Science, Prom. SG. 31/19 April 2022.

traced to several Bulgarian legal acts, not all of them relevant to the activity of the public authorities. In a broader perspective, concerns about human rights and the need for greater awareness of individuals' vulnerability when their personal data are subjected to automated processing have already been raised with the Council of Europe's Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data[81]. The Convention defines "automatic processing" as operations carried out wholly or partly by automated means, including data storage, logical and/or arithmetic operations on data, data alteration, erasure, retrieval, or dissemination – all without human intervention.

The Bulgarian PPDA[82] aligns with Regulation (EU) 2016/679 (GDPR) by requiring personal data controllers to notify data subjects about automated decision-making, including profiling (Article 12 GDPR). It also mandates that they provide information on the logic behind profiling and its intended consequences for individuals (Article 13, paragraph 2, letter f, GDPR) when processing large databases. Furthermore, data controllers must take appropriate measures to safeguard the rights, freedoms, and legitimate interests of data subjects, including the right to human involvement and the ability to express their views and challenge decisions based on the automated processing of personal data (Article 22, paragraph 3, GDPR). Article 52 PPDA prohibits making decisions based solely on automated processing, including profiling, if such a decision causes adverse legal consequences or significantly affects the data subject. Exceptions are allowed when provided for by European Union law or the legislation of the Republic of Bulgaria if there are adequate safeguards for the rights and freedoms of the data subject. At the very least, human intervention must be included in the decision-making process. Automated decision-making should handle personal data in a way that protects the rights, freedoms, and legitimate interests of the data subject. The data subject has the right to receive information about the processing, express their opinion, receive an explanation of the decision, resulting from this processing, and appeal the decision. Profiling that leads to discriminating against individuals based on categories of personal data is expressly prohibited by law. In addition, Article 64 of PPDA

[81] Ratified by Bulgaria on 18 September 2002, in force from 1 January 2003.
[82] Prom. SG. 1/04 January 2002.

mirrors Article 35 of the GDPR. It mandates that where a type of processing, in particular when using new technologies, and considering the nature, scope, context, and purposes of the processing, is likely to pose a high risk to the rights and freedoms of individuals, the controller shall, prior to the processing, assess the impact of the envisaged processing operations on the protection of personal data. This is known as a data protection impact assessment.

Bulgarian consumer protection law also has already adopted this concept, requiring prior consent from the consumer whenever a supplier of financial services uses automatic calling systems without human intervention[83].

Furthermore, under Art. 226a of the Electronic Communications Act, companies providing public electronic communication services must notify the end user in advance that a preliminary risk assessment will be conducted through automated processing. They must also inform users of their rights to request human intervention in the process, express opinions and challenge decisions made by automated means.

In accordance with the Employment Code (Art. 107h, paragraphs 11 and 12), in the cases of telework assignment and reporting through information systems for algorithmic management, the employer is obliged to provide the employee with written information on the type and volume of work-related data to be collected, processed, and stored in it. The employer is further obliged to provide the employee with written information on the decision-making process. Upon the employee's written request, the employer or a designated official reviews the decision made by the algorithmic management system and notifies the employee of the final decision. The concept of algorithm management is relatively new to Bulgarian legislation. It deals with the reasonable limits of the employer's control over the employee's work and the guarantees for human intervention in the decision-making process when it impacts significantly on an employee's rights and interests.

Generally, automated data processing does not release the administrative authority from its obligation in this matter. For instance, the Civil Registration Act[84] provides that the automated processing of an individual's data does not mean that the institutions

[83] See for instance Article 17, paragraph 1, item 1 of the Distance Marketing of Financial Services Act, prom. SG. 105/22 December 2006.
[84] Prom. SG. 67/27 July 1999.

are no longer responsible for preparing and sending the civil registration documents (Article 115, paragraph 4).

The expressions "human interference" or "human intervention" in relation to automation systems used by public administration have not been introduced yet in Bulgarian administrative law. The Administrative Procedure Code[85] lacks general provisions for recognising the results of automated systems used by public administration and does not mandate human intervention when these systems or databases are employed to issue official certificates or make decisions. There is no case law to indicate how the public administration or courts would handle individual requests for human intervention or a review of output processed by automated systems. It should be emphasised that the Bulgarian administrative law lacks general provisions to deal with automated administrative acts and decisions taken by the authorities based solely on automated systems. This creates legal uncertainly about the application of the general principles of the Administrative Procedure Code in case of automated decision-making. A principle of primary importance here is the accessibility, publicity and transparency principle, which commands transparency, authenticity and thoroughness of the information in the administrative proceedings (Art. 12, para. 1). In addition, it is also not clear in these situations how the administrative bodies will perform their obligation to ensure cooperation with, and information for, the persons concerned (Art. 28), to enable them to examine the documents of the administrative dossier and express their opinion on the collected evidence (Art. 34). The boundary between decisions made *de jure* solely by automated systems and decisions made *de facto* by automated systems may become blurred and uncertain.

The lack of legal regulation of automated decision-making by the public authorities, the lack of transparency on the levels of interactions between automated systems and humans in the administrative procedure, and the lack of easily accessible, low-priced, effective redress mechanisms, pose the risk of a "black box" administration committing illegal and arbitrary acts, bluntly demonstrating its predominance and shifting a disproportionate burden on disadvantaged citizens and legal entities. Automated systems rely on data and algorithms. Injustice may result from

[85] Prom. SG. 30/11 April 2006.

wrong or incomplete data as well as from the biased or faulty design of the algorithm. However, injustice may arise from human error in poor and incompetent judgment regarding when and to what extent the government agency should rely on automated systems, and how much human intervention is needed in the given case.

Furthermore, since the use of algorithmic technologies and AI by the police, for example, is treated as classified information or a national security issue, there may reasonably be concerns that no effective protection and remedies may be in place for individuals' privacy, with no procedures ensuring the quality of datasets and no transparency obligations incumbent on the police.

Relevant regulatory bodies, such as the Consumer Protection Commission, the Commission for the Protection of Personal Data, and the Commission for Protection against Discrimination, can be important stakeholders in the process of explaining to citizens how AI is used and how it affects their fundamental rights. For instance, the Commission for the Protection of Personal Data issued a statement informing the users of the social networks Facebook and Instagram that Meta Platforms Ireland Limited (Meta) plans to start using their posts, photos, descriptions (including profile photos of non-public profiles), and comments to develop, train and improve Meta's artificial intelligence (AI) service. The Commission also provided guidance and instructions on how to object if users do not want their posts, images, and comments to be used for this purpose.

Bulgarian law does not recognise algorithmic codes as administrative documents. Additionally, the survey conducted by the authors by means of the Access to Public Information Act revealed that almost no public bodies or administrations consider algorithmic codes to be administrative documents. An interesting view was expressed by Sofia Municipality in its reply to this question. They defined the algorithmic code as a text, describing the rules of operation of an algorithm. Based on this definition, the reply assumed that the code could be treated as a document, which can be read, reviewed, changed, copied and distributed. The reply also made clear that the algorithmic code as a document is not sufficient to fully understand the algorithm.

6. Bringing Complaints against the Automated State

So far, the most conspicuous litigation against the reliance by the public authorities on algorithms concerns the complaints brought by drivers against the Ministry of the Interior to challenge electronic traffic tickets under the Administrative Offences and Administrative Penalties Act.[86] These tickets are generated by automated systems, such as speed cameras or other traffic enforcement technologies, which detect traffic violations and issue penalties automatically, without human intervention at the time of the offence or at the time the penalty document is drafted. In these cases, the offence is detected and recorded by an automated technical device or system, which then issues the electronic penalty without involving a traffic control authority (Article 189 and § 1, item 63 of the Road Traffic Act[87]).

Under the Road Traffic Act, an electronic ticket serves as a means of imposing an administrative penalty on individuals who have violated traffic rules. This type of ticket is not applicable for offences that entail a driving ban or deduction of control points. The law expressly specifies that the electronic ticket is issued without the presence of either the control authority or the offender. This streamlined process deviates from the general administrative penalty procedures, which typically involve an offence detection report drawn up in the presence of both the offender and the control authority, followed by a separate act which imposes the administrative penalty. The Road Traffic Act allows for a simplified procedure, where a single document – the electronic ticket – functionally replaces the two documents normally required for imposing an administrative penalty.

Case law classifies electronic penalty tickets entirely as products of AI. The process is described as a technology, which captures the offence and transmits it electronically to another system, which then issues the electronic ticket. Relevant data is drawn from the centralised Road Traffic Control system. Both the detection of the offence and the issuance of the penalty act are fully automated, occurring without the involvement of the control authority.

The electronic penalty ticket is considered an electronic statement, produced by a machine and technical devices rather

[86] Prom. SG. 92/28 November 1969.
[87] Prom. SG. 20/5 March 1999.

than by a legal entity. For the first time, Bulgarian legislation grants technical devices the authority to perform functions typically associated with an administrative sanctioning authority[88].

Electronic penalty tickets are often challenged in court for the lack of a document's essential elements, namely the signature of a control authority and an issue date. Tickets can be challenged before the district general court where the road offence took place. This first-instance decision can be further appealed before the respective administrative court.

Bulgarian case law on electronic tickets indicates that while the law treats the electronic ticket as both the act reporting the offence and the act imposing the penalty in terms of legal effect, it does not apply the same requirements for form, content, details, and issuance procedures as those detailed in the Administrative Offences and Administrative Penalties Act. Pursuant to the Traffic Road Act, the electronic ticket must include information about the territorial structure of the Ministry of the Interior where the violation was detected, the location, date, exact time of the offence, vehicle registration number, vehicle owner, offence description, relevant legal provisions, the amount of the fine, the payment period, and the bank account for voluntary payment. Those exhaustively listed particulars of the electronic ticket do not include the signature of a control body or the date of issuance. Therefore, courts do not consider the absence of these items as a material procedural irregularity.

The law explicitly states that photographs, video recordings and printouts taken by technical means or recording of the date, the exact time of the offence, and the vehicle registration number are material evidence in administrative proceedings. This provision ensures a high degree of confidence and security in offence detection.

Another aspect of the litigation regarding electronic tickets concerns their applicability based on whether the offence was detected and recorded by a stationary or mobile technical device[89].

The electronic penalty ticket is legally defined as an electronic statement, recorded on paper, magnetic or other medium, created by an administrative information system on the basis of data received and processed by automated technical

[88] Decision No 1147 of 27 July 2023 of Varna District Court case No 2214/2023.
[89] Interpretative decision No. 1/26 February 2014 of the Supreme Administrative Court, interpretative case No. 1/2013.

devices. The Supreme Administrative Court describes the electronic ticket as an act that encompasses both offence detection and sanction functions. This significantly limits the ability of either the vehicle owner, or the designated offender, to contest the findings at the moment the offence is detected and recorded.

The question the Supreme Administrative Court had to answer was in which cases the simplified short-track procedure applies depending on whether the offence is detected by "stationary" or a "mobile technical device". A stationary technical device is one that is pre-positioned and permanently fixed on the road, whereas mobile technical devices are those attached to the vehicle of the traffic control authorities. The court returned a decision that the simplified procedure applies only when the road offence is detected and recorded by a stationary automated technical device operating in an automatic mode without the need for control authority intervention[90]. In cases where mobile technical devices, operated directly by a control authority, the electronic ticket procedure is not applicable. Instead, the general procedure for drawing up an administrative offence report and issuing a penalty decision must be followed. It is important to make clear that legislative changes were made after the decision of the Supreme Administrative Court and electronic penalty tickets can now be issued for road traffic offences detected using mobile cameras, but the law[91] allows this restrictively with many additional requirements imposed.

An interesting subset of cases involves references to AI, shedding light on how courts perceive AI technology. These cases pertain to legal counsel remuneration fees in instances where the case is straightforward in terms of facts and law[92]. When determining the fee amount, courts point out that the statement of claim was templated, standardised and repeatedly used by the legal counsel, largely consisting of copy-paste citations of laws, and lacking in innovation or creativity – something that could be

[90] Id.

[91] Regulation No. 8121z-532 of May 12, 2015 on the conditions and procedure for the use of automated technical means and systems for control of road traffic rules (Prom. SG. 36/19 May 2015).

[92] Order of Sofia Regional Court, dated 15 October 2023, in private civil case No. 53612/2023; Decision No. 4238 of Sofia Regional Court, dated 10 March 2024, in civil case No 23961/2023.

produced by artificial intelligence and automatically generated algorithms.

Apart from these examples, there is still no caselaw in Bulgaria relating to proceedings brought by personal data subjects contesting decisions based solely on automated processing that significantly affect their rights. This may be related to the fact that there is still little awareness in Bulgaria about the need to develop transparency mechanisms and to make easily accessible, inexpensive and efficient remedies available to make good the negative effects of automated systems and/or AI.

7. Scholarly Debates

Bulgarian administrative law scholarship lags behind in contemporary academic debate on the digital state and still has not approached the legal treatment of automated decision-making by the public administration. Bulgarian legal doctrine has barely touched upon the issues of automated algorithms and AI. There are only a few articles introducing the basic concepts of AI-driven types of technology, sketching out the issues to be discussed mainly from the perspective of employment law and intellectual property law[93].

There is no debate whatsoever in the Bulgarian legal scholarship on the liability for harm resulting from the use of AI or algorithmic automated technology, let alone its use by the public authorities. The question whether the regime of fault-based or strict liability is applicable in such cases would probably be answered in favour of the latter. Certain features in the currently ongoing fourth industrial revolution largely resemble the period of the first one and recall the reasons for the expansion of strict liability in Europe – the unprecedented development of technology that steadily outpaces the means of safety, the almost unbearable burden for proving fault thus leaving victims uncompensated, and situations of loss in the absence of any fault, risk related arguments. The realm of strict liability in Bulgarian law encompasses several regimes.

[93] I. Ilieva, *The rule of law and artificial intelligence*, 3 Izvestiya, Journal of the Economy University of Varna 210–226 (2020), at https://journal.ue-varna.bg/uploads/20210218113923_1798896116602e51eb3ce0e.pdf, accessed 31 July 2024; V. Edjov, *Artificial intelligence as a challenge to the law* (15 May 2023), at https://news.lex.bg/Изкуственият-интелект-като-предизвикателство-пред-правото/, accessed 31 July 2024; T. Tomov, *Artificial intelligence and the implications for the labour market*, 4 Journal of Labour and Law (2024).

Product liability may be considered suitable for harm caused by AI technology but has the drawback of covering only cases of death, personal injury, and property damages whereas AI triggered harm may possibly result in invasion of privacy, discrimination, infringement of dignity, and other fundamental rights. Perhaps an AI-specific difficulty would be to establish the source of the harm as AI devices become more and more interconnected and autonomous in exchanging data and learning. Still another problem may be to identify whether the "defect" comes from the assignment, design, or development of the technology. The usual hurdles with causation and vicarious liability for harm caused by independent contractors should also be analysed for the specific case of AI technology. The State and Municipal Liability for Damage Act[94] also provides a state strict liability regime and the municipalities for harm flowing from unlawful acts, actions or inactions of their bodies and officials in the course of or in connection with the performance of administrative activities. Unfortunately, case law shows some uncertainty and confusion as to the meaning of "administrative activity", which some courts interpret broadly to encompass any activity of public authorities, while others limit it strictly to public governance activities.

8. Conclusions

The above survey showed that, overall, the regulation of algorithmic technologies and AI in Bulgaria is still in its infancy. There have been no discussions or implementations of restrictions on the use of specific technologies within particular sectors. Additionally, Bulgarian society appears to be quite distant from comprehending the risks and threats associated with the unchecked use of technologies and AI in social life.

Most of the legal requirements that apply to reliance on algorithmic automation/AI by public authorities stem from fundamental principles and old-established norms, such as the prohibition of discrimination, the protection of privacy, and the safeguarding of personal data. The new technology-focused regulations in Bulgarian law primarily aim to implement EU legislation rather than creating a comprehensive legal framework

[94] Prom. SG 60/05 August 1988.

that protects individual rights and enhances the accountability of public authorities.

Yet, this does not mean that there are no uses of algorithmic technologies and AI by the Bulgarian public administration.

Bulgaria has to adopt legislation setting the ground for an open, transparent, inclusive and accountable public administration, empowered by modern automated technology to reach tailor-made, fair and just decisions for citizens and legal entities.

Based on the answers received by the authors from the interviews with numerous Bulgarian government agencies and on the overall analysis herein carried out, it can be assumed that the sectors probably most affected by algorithmisation are tax authorities, police offices, security services, traffic management, and digital identity.