

CHAPTER 21

REGULATORY FRAMEWORK, PROCEDURAL REQUIREMENTS, AND INFRASTRUCTURAL ASPECTS OF AUTOMATED ADMINISTRATIVE DECISIONS

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Abstract

This chapter provides a comparative analysis of the regulatory, procedural, and infrastructural frameworks governing automated administrative decisions across eleven legal systems. It examines five core dimensions: definitional approaches, the existence of a general legal basis for automation, the sectors most affected by algorithmic decision-making, the procedural guarantees applicable to automated processes, and the nature of the actors and infrastructures that develop and support these systems. Despite significant heterogeneity, the comparison reveals the emergence of a shared set of procedural safeguards – transparency, participation, reasoning, traceability, and human oversight – adapted to the technical specificities of automation. At the same time, structural divergences persist, reflecting differing administrative cultures, regulatory philosophies, and political orientations. The chapter also highlights the decisive role played by data infrastructures and interoperability in enabling accountable automation. Ultimately, the analysis shows that automated administrative decision-making is reshaping the architecture of contemporary administrative law, generating both convergences and tensions that are essential to understanding the evolution of due process in the algorithmic age.

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1. Introduction

A comparative analysis of the use of automation in administrative decisions raises key questions about the resilience of the fundamental principles of administrative law in the algorithmic era. The introduction of automated systems in procedures requires an examination of how different legal systems manage to preserve – or reshape – the guarantees traditionally associated with the legality and legitimacy of public action, the protection of the rights of affected parties, and democratic accountability.

To reconstruct these dynamics, the chapter examines – based on the responses provided in the national reports – five key thematic areas: the definition of automated administrative decisions; the existence or otherwise of a general legal basis for their use; the sectors in which automation is most widespread; the procedural requirements applicable to automated administrative decisions; and the nature of the entities that develop the technologies and infrastructure, as well as data interoperability architectures.

The aim is to identify areas of convergence and divergence between the legal systems considered in order to highlight, on the one hand, the emergence of a common core of principles and, on the other, the persistence of structural differences linked to administrative cultures, institutional, and different models of technological governance.

2. The definitional framework

The first question in the questionnaire¹ concerned the definitional profile, asking whether there was a national law that defined automated administrative decisions.

The comparative analysis reveals that most legal systems lack an explicit national definition of automated administrative decisions. Most jurisdictions have chosen (for now) not to legislate specifically on the technology itself, considering it a tool or means of administrative action, and have preferred to frame the phenomenon through existing legislation or soft law.

The most notable exception to this negative convergence is Spain. Article 41 of Ley 40/2015, de Régimen Jurídico del Sector Público defines automated administrative action as any act or action performed entirely by electronic means by a public body in the context of an administrative procedure and in which no civil servant has been directly involved. This law was implemented by Royal Decree 203/2021, which approves the regulations on the functioning and operation of the public sector by electronic means. At the regional level, several Autonomous Communities have established more detailed rules, in some cases aiming to promote and encourage the use of algorithms by public bodies (such as Law 4/2019 of Galicia) and in other cases limiting their use (such as Law 5/2021 of Aragon, which, in Article 43 prohibits automated administrative acts when subjective decision-making criteria must be applied)².

Germany does not have an explicit legal definition of automated administrative decision-making, but it adopts a formalistic approach, making the validity of automated decisions subject to the existence of a specific legal basis authorising them. The German Administrative Procedure Act (*Verwaltungsverfahrensgesetz*) of 1976 was amended in 2017 to introduce Article 35a, dedicated to fully automated administrative decisions (*Vollständig automatisierter Erlass eines Verwaltungsaktes*)³. The provision does not contain a definition of such acts but limits their lawful adoption to cases permitted by current legislation, with no margin for discretion or assessment. This type of act differs from partially automated acts (*mit Hilfe automatischer Einrichtungen*), which were already provided for in the original text of the 1976 Act.

Estonia is also a special case, where the public sector could be said to be digital-by-design, as e-government is structural, even if the

¹ See Chapter 13, where the questionnaire is reproduced in its entirety.

² For both of these laws, see the Chapter on Spain in Part II.

³ See the Chapter on Germany in Part II.

possibility of automated decision-making is case-by-case, based on laws that attribute powers to public administrations and on the authorisation rules contained in sectoral regulations. Furthermore, Estonia is one of the few countries with a special word for AI infrastructure in its vocabulary, namely *kratt*. In Estonian folklore, a *kratt* is a mythological creature that helps people but must be controlled (just like AI). From this word, the term *bürokratt* was coined specifically for AI applied to the public sector, to convey the idea of an assistant to public administrations that must, however, always be controlled and supervised⁴.

At the European level, the AI Act does not define automated administrative decision-making. It does, however, classify AI systems used by public administrations as “high risk”.

Among the legal systems without a definition of automated administrative decision-making, two macro-models can be identified for legally framing such decisions in the absence of legislation. Some countries rely mainly on case law, while others make greater use of soft law instruments.

The first model includes France, where both the *Conseil National du Numérique* and the *Conseil d'État* have defined the automated administrative decision as a series of operations, calculations, and computer instructions performed on various data in order to obtain a result⁵. In Italy, too, the jurisprudence of the Council of State (*Consiglio di Stato*) has played a predominant role in this area. With the adoption of Law 132 of 2025⁶, Italy was the first European country to adopt a national law on AI (in compliance with, and indeed ancillary to, the AI Act). Article 14 is dedicated precisely to the use of artificial intelligence in public administration, although it does not contain a definition of “automated administrative decision”.

The second model is represented by the Netherlands, where many public policy documents contain a definition and/or categorisation of the different types of automated systems used by administrative authorities in their decision-making processes⁷, such as the Guidelines for the application of algorithms by administrative authorities and for public information on data analysis (*Richtlijnen voor het toepassen van*

⁴ See the Chapter on Estonia in Part II.

⁵ See the Chapter on France in Part II.

⁶ Law No. 132 of 23 September 2025, “Disposizioni e deleghe al Governo in materia di intelligenza artificiale”.

⁷ M. Hoekstra, L. Dom, A.F. van Veenstra, *Quick scan AI in de publieke dienstverlening III* (TNO 2024), 12.

algoritmen door overheden en publieksoverlichting over data-analyses)⁸. In the United Kingdom, too, the approach to automated decision-making has so far been guided by non-binding regulatory instruments and general principles (a draft law on automated administrative decisions is currently awaited)⁹.

The two non-European countries considered are special cases that are difficult to classify: in the US, the Biden administration had adopted an OMB Memorandum on advancing government innovation and risk management for the use of artificial intelligence by agencies (“Advancing Government Innovation” OMB Memorandum)¹⁰, which the Trump administration revoked in favour of a policy that prioritises competitiveness and deregulation. In China, the absence of a legislative definition and specific rules is not accompanied by case law or soft law instruments. Still, we might say that it is “compensated for” (from the government’s point of view but certainly not in terms of the protection of individual rights) by strong political and administrative control over digital infrastructure. Moreover, the Chinese translation of automated administrative decisions (自动化行政/公共决策) remains an academic term and has not yet been included in any government or legislative document in China¹¹.

Lastly, it is worth noting that most legal systems establish procedural requirements (in personal data protection legislation) for automated decisions involving the processing of personal data, including profiling. These rules apply to automated decisions made by both private and public entities. At the European level, in addition to the well-known Article 22 of the GDPR, a very similar provision is contained in Article 24 of the Chinese Personal Data Protection Law. These procedural requirements will be examined in section five below, but it is interesting to note at this stage – in addition to an important convergence in negative terms with regard to a definition – that the term “automated decision-making” is found in almost all legal systems, even though no explicit definition of the term is provided.

⁸ See the Chapter on the Netherlands in Part II.

⁹ See the Chapter on the United Kingdom in Part II.

¹⁰ Memorandum by Shalanda D. Young, <https://www.whitehouse.gov/wp-content/uploads/2024/03/M-24-10-Advancing-Governance-Innovation-and-Risk-Management-for-Agency-Use-of-Artificial-Intelligence.pdf>

¹¹ See the Chapter on China in Part II.

3. The legal basis

The second item in the questionnaire sought to ascertain whether there was a general legal basis (at the constitutional level or in administrative procedure law) for the use of algorithmic automation and/or artificial intelligence by public bodies (government, agencies, local administrations, specialised bodies) or whether there were specific legislative provisions allowing public bodies to experiment with algorithmic automation or AI.

A comparative analysis of the responses to this question shows, first of all, a strong negative convergence: most of the legal systems considered do not currently have a genuine “general legal basis” – at the constitutional level or in their general law on administrative procedure – that explicitly and systematically authorises the use of algorithmic automation or artificial intelligence by public authorities. This finding is entirely cross-cutting, as it applies equally to civil law systems, common law systems, and China.

There are two important exceptions to this negative convergence. The first is the EU, as the AI Act provides the legal basis for the use of AI by European Union institutions and bodies in the performance of their tasks. Although the AI Act does not expressly concern the exercise of public powers through algorithms, it establishes minimum rules and safeguards for administrations that develop or use AI systems, with direct implications for their relations with citizens. The second exception is very recent, namely Italy, which, in September 2025, approved Law 132 on AI, whose Article 14 states that “Public administrations shall use artificial intelligence for the purpose of increasing the efficiency of their activities, reducing the time taken to complete procedures and increasing the quality and quantity of services provided to citizens and businesses, ensuring that those concerned are aware of how it works and that its use is traceable”. Furthermore, paragraph 2 establishes that the use of AI by public administrations must always be “instrumental and supportive of administrative activities, respecting the autonomy and decision-making power of the person who remains solely responsible for the measures and procedures in which artificial intelligence has been used”.

In the absence of a general legal basis, some countries adopt a decidedly *formal* approach in order to significantly limit the use of fully automated administrative decisions. In Germany, for example, Article 35a of the Administrative Procedure Act (VwVfG) considers them legitimate only if permitted by current legislation, and there is no margin for discretion or assessment. The provision reflects – as is indeed the case

– widespread social mistrust of data management by the State¹². The most symbolically significant constitutional provision is Article 12 of the Constitution of the Land of Bremen (“Man is superior to technology and machines”)¹³, which inspires cautious and progressive digitisation, with trials of fully digital procedures only in exceptional circumstances.

A similar formal approach can be found in Austria, although it focuses primarily on accountability for the decision. Article 18(3) of the General Administrative Procedure Act (*Allgemeine Verwaltungsverfahrensgesetz* – AVG) stipulates that written decisions must be approved by the authorised person through their signature, and in paragraph 4 that every written decision must indicate, among other things, the name of the person to whom the approval is attributable. The Austrian Constitutional Court¹⁴ therefore ruled that automated administrative decisions are not inadmissible in principle, but must be adopted in accordance with a specific law establishing the accountability of the decision to the competent authority and the non-necessity of a signature. Furthermore, regarding tax matters, there is, in fact, a general legal basis: Article 96(2) of the Austrian Federal Tax Act provides that automated decisions are considered approved by the competent authority and do not need to be signed by the responsible person, as Article 96(2) of the Austrian Federal Tax Act generally provides that automated decisions are considered to be approved by the competent authority and do not need to be signed by the person responsible¹⁵. It should be noted that the Constitutional Court’s decisions refer to deterministic algorithms, while the debate over AI remains heated and open.

Other jurisdictions prefer a more sector-specific approach: in the absence of a general legal basis, they rely on sector-specific regulations to define the possibility and the rules governing the use of algorithmic

¹² See the Chapter on Germany in Part II.

¹³ “Der Mensch steht höher als Technik und Maschinen”. Constitution of the Free Hanseatic City of Bremen in the version published on 12 August 2019, Brem.GBl. 2019, pp. 524, 527.

¹⁴ Based on Article 20 of the Federal Constitutional Law, which states that “Administrative activity shall be carried out, in accordance with the provisions of the law, under the direction of the supreme organs of the Federation and the Länder, by organs elected for a fixed term or by professional bodies appointed for this purpose. Unless otherwise provided by constitutional laws, they are bound by the directives of the higher bodies and are accountable to them for their official activities”.

¹⁵ *Bundesgesetz über allgemeine Bestimmungen und das Verfahren für die von den Abgabenbehörden des Bundes, der Länder und Gemeinden verwalteten Abgaben* (Bundesabgabenordnung – BAO), BGBl. No. 194/1961.

automation. In the Netherlands, regulation is mainly sector-specific, with specific rules authorising the use of algorithms in particular contexts (health, social security, spatial planning, law enforcement, etc.)¹⁶. The decision not to introduce general regulations is justified by administrative discretion: unless otherwise provided by law, it is within the entity's autonomy to decide whether to use algorithms to support its tasks, subject to compliance with the general principles of good administration, the GDPR, and the principles of the Open Administration Act¹⁷. In Estonia, too, the legal basis is fundamentally sectoral, as the possibility of adopting automated decisions derives from authorisation rules included in individual sectoral laws. However, Estonia is an interesting and special case, as public data is digital *by default* and the interoperability of registers is high, so automation is envisaged in virtually all sectors. Since the beginning of e-governance, the political and legislative choice has been to avoid a law "on technologies" and instead integrate digital solutions into general sectoral legislation¹⁸. A project to reform the law on administrative procedure is currently underway, aimed at introducing horizontal rules on the automation of decisions, in coordination with the entry into force of the AI Act.

In the United Kingdom, despite the absence of a specific legal basis expressly authorising the use of AI by public bodies, the use of algorithmic technologies is linked to the ordinary functions of expenditure and the exercise of powers by public authorities. The distinctive feature is the logic of 'negative authorisation': the use of AI is assumed to be permitted, provided that it does not violate constraints arising from external hard law (Human Rights Act 1998 and Data Protection Act 2018/UK GDPR), common law principles of legality, fairness, and rationality applicable through judicial review, or from the five principles contained in the white paper on AI Regulation.

China offers a different but equally unsystematic framework: there is no constitutional or statutory provision explicitly authorising automated decision-making by public authorities. The main reference is to the Personal Information Protection Law (PIPL): Article 24 regulates automated decision-making by private individuals, imposing transparency, fairness and the right of the data subject to contest fully automated decisions; Article 33 extends the application of the PIPL to the

¹⁶ Dutch Scientific Council for Government Policy, *Opgave AI. De nieuwe systeemtechnologie*, The Hague (2021), 299-304.

¹⁷ Woo, *Wet open overheid*. See the paragraph on the Netherlands in Chapter II.

¹⁸ See the Chapter on Estonia in Part II.

data processing activities of State bodies. In the absence of special rules on automated public decision-making, legal doctrine holds that the same transparency and fairness requirements also apply to public bodies¹⁹. Nor are there any explicit prohibitions or authorisations concerning AI experimentation, but it is generally believed that authorities may, in principle, partially automate their decision-making process, as is already the case in many other sectors.

The US case requires separate consideration, not least to highlight the differences between the situation in 2024 and that of 2025. In both scenarios, there is no national legislation that explicitly defines a general legal basis for the use of AI by public administrations. However, in the United States, the absence of a legislative basis is compensated for by a set of administrative directives and executive orders binding on federal agencies in the executive branch, which encourage them to adopt AI and explain how they should implement it to ensure compliance with current legislation and best practices²⁰.

In the 2024 US description, the reference framework is marked by 2023 Executive Order 14110, “Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence”, and the OMB memorandum of March 2024, “Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence”²¹. These acts outline a genuine AI governance framework for federal agencies: the designation of a Chief AI Officer in each agency; an obligation to map and monitor AI use cases; reference to soft law instruments such as the AI Bill of Rights and the AI Risk Management Framework; and systematic integration of risk management in the use of automated systems.

In the US description for 2025, while there is still no general legislative basis, the political and regulatory centre of gravity shifts significantly. The Trump administration – which revoked the Biden administration’s executive guidelines, including Executive Order 14.110 – presented an AI Action Plan based on three pillars: accelerating innovation in AI, building the national AI infrastructure, and assuming

¹⁹ As will be seen in paragraph 5, these individual rights are purely theoretical, as it is not possible to exercise them in practice.

²⁰ Nat’l Instit. of Standards and Tech., Artificial Intelligence Risk Management Framework (AI RMF 1.0) (2023), <https://doi.org/10.6028/NIST.AI.100-1>.

²¹ Memorandum from Shalanda D. Young, Office of Management and Budget for the Heads of Executive Offices of the President, Advancing Governance Innovation and Risk Management for Agency Use of Artificial Intelligence (28 March 2024), <https://www.whitehouse.gov/wp-content/uploads/2024/03/M-24-10-Advancing-Governance-Innovation-and-Risk-Management-for-Agency-Use-of-Artificial-Intelligence.pdf>.

global leadership in AI diplomacy and international security²². The central regulatory instruments remain executive orders²³ and OMB memoranda²⁴, but with different content: the new provisions emphasise deregulation, the centrality of the private sector as the primary laboratory for innovation, and a greater focus on protecting the government's and contractors' intellectual property than on privacy obligations. The stated aim is to accelerate the use of AI in government.

4. The sectors most affected by automation

A comparative analysis of the eleven legal systems examined in relation to the question of whether and to what extent public administrations use algorithmic automation reveals a heterogeneous picture, albeit characterised by a common feature: all States use forms of automation or AI systems in their daily activities, albeit to varying degrees of intensity and differing levels of transparency and regulation.

Firstly, it is possible to distinguish a group of systems characterised by a very high level of automation, in which AI is a structural element of administrative action. China is the most extensive and systematic example, also favoured by a political-administrative structure that allows the integration of algorithms and surveillance infrastructure. Despite the Chinese government's lack of transparency – which makes it impossible to accurately map the use of automation in public decision-making processes – it can be said that the impact of AI on Chinese public administration is considerable in scope and depth, with the widespread use of algorithmic technologies in public health, predictive justice, law enforcement, financial regulation, the social credit system, and content moderation²⁵. The United States also extensively uses AI, particularly in law enforcement, healthcare, and financial oversight. However, there has been a significant political and regulatory shift between the 2024 phase, in which the use of AI was based on an approach focused on the protection of rights, transparency, and risk management, and the 2025 phase, characterised by a pro-innovation strategy geared towards accelerated adoption, experimentation, and

²² See the Chapter on the United States in Part II.

²³ Executive Order 14179: Removing Barriers to American Leadership in Artificial Intelligence, Exec. Order No. 14,179, 90 Fed. Reg. 8741 (23 January 2025).

²⁴ Office of Management and Budget (OMB) Memorandum on Accelerating Federal Use of AI through Innovation, Governance, and Public Trust (“Accelerating Use of AI” OMB Memorandum), 3 April 2025.

²⁵ See the Chapter on China in Part II.

greater involvement of the private sector, with a weakening of privacy protection guarantees. Estonia is also among the most advanced countries in the digitisation of public services and the structural integration of automation into registers and administrative procedures, despite the absence of general regulations on AI. In fact, this country has natively integrated automation into digital public services, making the interoperability of registers, e-government, and automated decisions a constituent feature of its digital administration.

A second group of countries has an average level of automation, characterised by a significant spread of algorithms in specific sectors, but they do not achieve the systematicity of countries with high usage. Italy is increasingly using algorithmic systems, especially in tax administration, social security services, administrative controls, and data interoperability, while maintaining a cautious approach to the full automation of decision-making. Spain shows a particularly high level of legal formalisation of automated administrative acts, which has encouraged the widespread use of algorithmic systems, both in simple activities and in complex functions such as the verification of requirements and the issuance of standardised measures, with significant territorial differences between Autonomous Communities that favour the spread of automation and others that are more cautious in activities with margins for assessment²⁶.

France is also adopting increasing levels of automation in areas such as public order, security, and standardised digital procedures, accompanied by transparency regulations that pay particular attention to the rules governing the functioning of algorithms²⁷. The Netherlands, despite lacking a unified general framework, uses algorithmic systems in areas such as spatial planning, social security, health, and taxation, adopting a widespread but not yet systemic approach²⁸. The United Kingdom, while placing digitalisation and data at the heart of government priorities, shows less marked operational use of algorithms than other similarly developed jurisdictions²⁹.

Lastly, a third group of jurisdictions shows a low or cautious level of automation, with applications often limited to technical support functions rather than automated decision-making. Germany, despite legislative provisions for automated procedures since 2017, makes very limited use of them and relies mainly on algorithmic decision-making

²⁶ See the Chapter on Spain in Part II.

²⁷ See the Chapter on France in Part II.

²⁸ See the Chapter on the Netherlands in Part II.

²⁹ See the Chapter on the United Kingdom in Part II.

tools, especially in the tax sector and for predictive assessments, while the slow pace of digitisation is the main obstacle³⁰. Similarly, in Austria, AI is used in areas such as digital health, environmental management, and subsidy control, but technical use is favoured over the automation of decision-making³¹.

This overview reveals a number of commonalities: automation is now present in all countries, albeit to varying degrees; its use is more widespread in data analysis, digital services and predictive controls than in fully automated decision-making; the availability of interoperable infrastructure and data exchange emerges as a common strategic factor in the most advanced countries. However, significant differences remain in both the scope of automation and the nature of the functions involved, with high-intensity models (China, USA, Estonia) geared toward integrated digital administrations. In contrast, low-intensity models (Germany, Austria) maintain a gradual, rights-based approach. The contrast between US governance in 2024 and 2025 also confirms how sensitive the adoption of AI in the public sphere is to political changes, reflecting the shift from a logic centred on the protection of rights to one oriented towards maximising innovation. Overall, classification by levels of automation provides a clearer understanding of how the adoption of AI in public administrations is now a constituent feature of contemporary administrative management, but must also be placed along a continuum ranging from native digitalisation to cautious automation, reflecting structural differences in the institutional frameworks, administrative cultures, and the political priorities of individual States.

5. Procedural requirements

The emergence of algorithmic systems in administrative procedures calls for reconsideration of the architecture of procedural guarantees traditionally recognised to citizens, raising questions about their resilience and adaptability in a context where decisions are no longer the exclusive result of the cognitive activity of the administration, but derive – in whole or in part – from the automated processing of data. In the legal systems analysed, the problem manifests itself with varying intensity and configurations, but always with reference to four fundamental aspects: compliance with the principle of transparency,

³⁰ See the Chapter on Germany in Part II.

³¹ See the Chapter on Austria in Part II.

protection of the rights of participation of the parties concerned, the obligation to give reasons, and the need to ensure meaningful human control over algorithmic outcomes. Despite heterogeneous regulatory solutions, the comparison highlights a shared core of procedural requirements – access to information, participation, traceability of decision-making reasoning, verifiability, comprehensibility and contestability of output, and human supervision – which have gradually adapted to the technical specificity of automated decisions.

At the same time, differences emerge regarding the relationship between public power and digital technologies, as well as the ability of individual legal systems to bring algorithms within the scope of general administrative law and to adapt traditional principles to the new technological context. Comparative analysis therefore allows us to identify both the common lines that tend to consolidate a sort of “procedural minimum” in administrative automation and the divergences that reflect the deep tensions between technological efficiency, the protection of rights and democratic accountability.

5.1. Transparency

In all legal systems, there is strong convergence towards transparency as an essential prerequisite for the procedural legitimacy of automated decisions, albeit with varying degrees of intensity and interpretation.

Austria requires that automated systems be incorporated into a procedural framework that complies with the rule of law, allowing the party to know and comment on the decision-making process, under penalty of violating the constitutional principle of equality³². Spain has introduced a number of proactive publication requirements: administrative offices must make automated acts available, with a description of the mechanisms, data used, and the logic of algorithmic action (Regio Decreto 203/2021)³³. The Netherlands attributes a structural role to transparency through case law: the administration is required to disclose relevant decisions, data, and assumptions, especially personalised inputs, so that they are accessible to, and understandable by third parties, thus constituting a safety net with respect to the regulatory gaps in GALA³⁴.

In the United Kingdom, transparency derives from both the Data Protection Act and the common law principles of legality and procedural

³² See the Chapter on Austria in Part II.

³³ See the Chapter on Spain in Part II.

³⁴ See the Chapter on the Netherlands in Part II.

fairness, and is linked to the right to understand the legal and factual basis of a decision, even when generated by a computer system³⁵. Italy attributes transparency to full accessibility of data and decision-making logic: Article 3 of Law 241/1990 and the case law of the Council of State affirm that an algorithm must not reduce the knowability of the reasons for a measure, and that public bodies must guarantee subsequent technical and legal control over the rationality of the outcome³⁶; the recent Law 132 of 2025 establishes that public bodies must use AI “ensuring that interested parties are aware of how it works and that its use is traceable”. In Estonia, automated decisions are fully subject to the rules on access to administrative information and the limits arising from data protection, which safeguard the substantive values even in the presence of full automation³⁷.

France has enshrined a genuine right to understand algorithms in its 2016 law, which amended the *Code des relations entre le public et l'administration* (CRPA), under which public authorities have four obligations: to provide general information (Article L.312-1-3 CRPA), to explicitly mention the purposes of processing (Articles L.311-3-1 and R.311-3-1-1 CRPA), to provide information at the request of the data subject affected by an individual decision taken on the basis of an algorithm (Articles L.311-1-3 and R.311-3-1-2 CRPA), and to disclose the source code of the algorithm (Articles L.300-2 and L.300-3 CRPA)³⁸. The case law of the *Conseil d'État* has reinforced broad interpretation of this right, ruling out the possibility of invoking trade secrets when an algorithm affects a decision that affects individual legal positions.

In the US, transparency takes on slightly different forms in the two systems. Under the Biden administration (USA 2024), the OMB memorandum required the publication of inventories of AI use cases and publicly accessible documentation to permit public awareness and review of automation; under the Trump administration (USA 2025), the obligation to notify the person concerned is no longer required, as agencies only have to notify the OMB of the use of AI, thus weakening individual information protection.

Overall, transparency emerges as a common thread, but with significant differences in effectiveness and intensity: while it follows a common approach to traceability and comprehensibility, in some

³⁵ See the Chapter on the United Kingdom in Part II.

³⁶ See the Chapter on Italy in Part II.

³⁷ See the Chapter on Estonia in Part II.

³⁸ See the Chapter on France in Part II.

jurisdictions, such as Italy and France, it also includes the right to access source code.

A different argument must be made for China, where the PIPL (the Chinese equivalent of the European GDPR) extends to public authorities – at least in theory – the obligations of transparency, access to information, justification, and the possibility of rejecting exclusively automated decisions. However, these procedural requirements remain solely on paper, as there has yet been no court case in China in which a citizen has sued the government over automated administrative decision-making. The most emblematic case of the distorted use of algorithmic systems in China is the “red code” scandal that occurred in Henan Province in June 2022. On that occasion, local authorities manipulated the COVID-19 health code system – introduced to classify individual epidemiological risk and regulate movement during the pandemic – by arbitrarily assigning the red code to hundreds of citizens who intended to travel to Zhengzhou to participate in protests related to a banking fraud scandal involving several regional financial institutions. As the red code entailed severe restrictions on freedom of movement, including quarantine requirements, bans on access to public spaces, and restrictions on the use of transport, this classification effectively prevented participation in the planned demonstrations. The revelation of the incident on Chinese social media sparked widespread protests from netizens, who denounced the transformation of a tool designed for public health purposes into a tool of political control, highlighting the risk of ‘function creep’ inherent in opaque, centralised algorithmic systems. The official investigation concluded with disciplinary sanctions for some mid-level officials, while no responsibility was attributed to senior government officials. This fuelled the perception, widely shared by internal observers, that the PIPL is incapable of effectively curbing abuses when the perpetrator of the violation is the State itself³⁹, thus confirming the persistent weakness of accountability guarantees in the Chinese administrative system.

5.2. Participation

The aspect relating to participation by interested parties shows marked convergence, as most legal systems consider participation an inherent guarantee of the fairness of administrative action, even when mediated by algorithmic systems⁴⁰.

³⁹ M. Jia, *Authoritarian Privacy*, 91 *Univ. Chicago L. Rev.* 733 (2024).

⁴⁰ For references, please refer to the Chapters on individual legal systems in Part II.

Austria requires the recipient to be able to intervene before or during the execution of the automated decision, with the possibility of suspending the process and replacing the computerised outcome with a human assessment; otherwise, the decision is deemed arbitrary and unconstitutional. Germany also insists on prior hearing (§ 28 VwVfG), requiring the administration to consider any information provided by the parties that cannot be automatically detected by the system, thus preserving the inquisitorial nature of German administrative proceedings.

Estonia adopts a systemic approach: all procedural guarantees of the Administrative Procedure Act, including participation and hearing, apply to both human and automated administrative decisions, and judges emphasise that ultimate responsibility remains with the competent authority. In Italy, the use of algorithms does not exempt the public administration from the obligation to adequately involve the private individual in the proceedings, nor from considering elements that the algorithm cannot evaluate, since the decision remains attributable to the administration and subject to review in its procedural components. In the United Kingdom, common law procedural fairness implies the right to a fair hearing, even against an automated decision-maker, and therefore provides participatory guarantees for any procedure that affects legitimate rights or interests.

France keeps the *procédure contradictoire* fully operational, requiring that a human decision-maker effectively assess the observations submitted by the parties concerned. The Netherlands, although lacking a specific rule, bases participation on the general principles of the law on administrative procedure (GALA): the algorithm cannot replace the participatory phase or reduce its scope, and the counter-evidence is provided by the possibility of challenging the output through appeals and reviews. In Spain, automated procedures must still comply with the guarantees of the common administrative procedure law; this implies the obligation to ensure that interested parties have the opportunity to influence the outcome, even if subsequent processing is entrusted to an automated system.

In the US, the Biden administration had strengthened participation, linking it to due process and public consultations on the systems used by agencies. In contrast, the Trump administration reduced individual participation requirements, placing the burden of notification on institutional dialogue with the OMB. As highlighted in the previous paragraph, the situation is completely different in China, where theoretical procedural guarantees are not implemented in practice.

5.3. Duty to give reasons

The duty to give reasons, one of the most refined guarantees in traditional proceedings, is interpreted differently by each legal system in the light of the technical opacity of the algorithms used⁴¹.

In Austria, the reasoning must include a statement of facts, the examination of evidence, and legal assessment, as the algorithmic decision remains fully attributable to the authority and subject to review of its constituent elements. Germany retains a particularly strict requirement: § 39 VwVfG prescribes a statement of reasons that makes the entire logical-legal process intelligible, and judges require the decision to be traceable to a verifiable chain of reasoning, even when supported or produced by an automated system. Italy elevates reasoning to an essential corollary of the principle of transparency: administrative case law clarifies that the algorithm cannot obscure the logical basis of the measure and that the public administration must be able to reconstruct, if necessary, the decision-making process through *ex-post* tests and checks of the algorithm used. In the Netherlands, the obligation to provide reasons derives from the principles of good administration: the reasoning must explain the role of the automated system, the choices made regarding input data, and the logical link between these and the decision to ensure judicial review of administrative action. Although Spain has no unified framework for automated administrative decisions, it requires justification and knowledge of the system's configuration elements when the automated act affects rights, with the requirement that artificial intelligence systems "must establish conditions of transparency, verifiability, explainability, traceability, human supervision and governance. In all cases, the information provided must be accessible and understandable"⁴².

In France, the reasoning must allow the data subject to understand the actual contribution of the algorithm, including its general logic, essential parameters, and degree of customisation. Estonia follows an equally rigorous approach, treating automated decisions as "human" decisions in all respects and therefore subject to the same reasoning requirements.

In the United Kingdom, the reasoning is based on the principles of legality and rationality, and is supplemented by case law: an automated measure that is not justified is unreasonable or unlawful if it prevents the verification of compliance with fundamental rights and

⁴¹ For references, please refer to the Chapters on individual legal systems in Part II.

⁴² Charter of Digital Rights, Section XXV.

relevant legal criteria. In the United States, justification has two dimensions: the constitutional dimension (due process), which requires notice and a statement of reasons; and the dimension of the Administrative Procedure Act, which requires judicial review to challenge an administrative decision on the grounds that it is “arbitrary, capricious, an abuse of discretion”, which also applies to decisions based on algorithmic systems. Lastly, China, through the PIPL, formally recognises the right of individuals to obtain explanations of automated decisions even when adopted by public authorities, although there are no concrete cases attesting to its effectiveness.

5.4. Human supervision

Human supervision is a new procedural requirement, as it has only emerged with the advent of automation. It is provided for in all legal systems but with very different variations and degrees of intensity⁴³.

Germany radically limits full automation: it allows fully automated decisions only in the total absence of discretion or margins of appreciation, requiring that the measure be “simple” and technologically manageable, and introducing an obligation to consider non-digitisable elements provided by the data subjects. In Austria and Spain, the issue is still being debated at both academic and jurisprudential levels, with conflicting opinions.

Estonia adopts a functional model: while encouraging advanced automation, it affirms that the authority remains responsible for the parameters fed into the system, and that human intervention becomes mandatory when the algorithm is unable to safeguard substantial values such as privacy, security or the material fairness of the decision.

Italy emphasises the need for *ex-post* checks and updates to the algorithm, especially when used in contexts of technical discretion, and holds public bodies responsible for ensuring that algorithms are always subject to human supervision and review. The recent Law 132 of 2025 requires that the use of artificial intelligence be instrumental and supportive of decision-making, while respecting the autonomy and decision-making power of the person who remains ultimately responsible for the measures and procedures in which artificial intelligence has been used.

In the United Kingdom, a human decision-maker is not always compulsory, but the common law nevertheless requires sufficient human control to ensure fairness and respect for human rights. In the

⁴³ For references, please refer to the Chapters on individual legal systems in Part II.

Netherlands, human supervision is not imposed as a matter of principle but derives from the requirement that the authorities must be able to reconstruct and justify the logical reasoning underlying the decision, thus presupposing substantial human control over the operation of the system. According to USA 2024, the NIST and the AI Bill of Rights emphasise that decisions affecting rights must have human appeal mechanisms and the possibility of review, while the USA 2025 framework reduces human oversight in the name of efficiency.

Under the PIPL, China expressly recognises the right to reject decisions made without human participation, incorporating a human-in-the-loop model at least in theory, but the Henan case shows that, in practice, public authorities can circumvent these safeguards when political control prevails over the protection of rights.

6. The nature of the entities developing algorithms, infrastructure, and interoperability

A comparative analysis of the eleven legal systems considered reveals common underlying trends but also significant structural differences regarding who develops the algorithmic technologies used by public administrations and the configuration of data infrastructures and interoperability mechanisms. In the first respect, no system has a “pure” model: everywhere, in different forms, there is a combination of public and private actors, with variations in in-house solutions and in the extent of outsourcing.

In Austria, France, and to some extent Italy, the public sector plays a particularly prominent role. In Austria, State-controlled companies or IT centres such as the *Bundesrechenzentrum* develop and manage essential platforms (FinanzOnline, ID Austria, digital justice), whereas the market is used for hardware, software components and sectoral applications, procured through tendering procedures with the support of the BBG and the IÖB service centre for innovative procurement. In Italy, the main approach is pre-commercial procurement and the “Smarter Italy” programme. In France, the algorithms that support large redistributive systems (income tax, family allowances, unemployment benefits, Parcoursup) are mainly designed by administrative bodies themselves, and private development is more frequent in sectors characterised by high security sensitivity, such as algorithmic video surveillance for the Paris Olympic Games.

At the opposite end of the spectrum, China, the US and, to some extent, the Netherlands and Estonia are explicitly based on a hybrid

model in which the private sector plays a central role in the design, management, and maintenance of systems. In China, algorithmic governance relies on giants such as Alibaba, Tencent, and other technology companies through a structural public-private partnership. In the United States, the ACUS 2020 report and the Federal AI Use Case Inventory show an almost equal split between internally developed applications and systems provided by commercial vendors. However, the political landscape is changing profoundly between the Biden administration (2024), which still combines partnerships with over 200 companies in the name of security and risk (AI Safety Institute Consortium), and the Trump administration (2025), which pushes for massive private sector involvement (Stargate agreement, infrastructure investments of up to \$500 billion) and reduced regulatory control. Estonia, despite having strong public development capacity, uses private suppliers as part of an “AI Support Toolbox” built as a joint support ecosystem. In the Netherlands, on the other hand, the lack of internal expertise at the local level leads to significant outsourcing of AI projects, tempered, however, by guidelines and model clauses that reaffirm the ultimate responsibility of administrative bodies.

In the United Kingdom, a slightly different model emerges, characterised by a peculiar combination of strong reliance on the private sector in the development of algorithmic systems and a central governance focused more on defining principles and strategies than on constructing public technological infrastructure. The production of AI technologies used by the public administration is, in fact, almost without exception, driven by private companies; the government does not act as the primary developer, but as a regulator that guides – through the well-known five principles for AI in the public sector⁴⁴ and through strategic guidelines – the responsible adoption of solutions offered by the market. Public intervention thus mainly takes place at the *ex-ante* supervision and ethical-operational guidance levels rather than at the technical-infrastructure level.

Moving on to the second aspect, data architectures and the degree of interoperability show equally significant differences. Estonia is the paradigm of full interoperability thanks to the X-Road system, which

⁴⁴ The five principles are: (i) safety, security and robustness; (ii) adequate transparency and explainability; (iii) fairness; (iv) accountability and governance; and (v) contestability and appealability. These principles are set out in the guidelines *Implementing the UK's AI Regulatory Principles*, available at the following link: https://assets.publishing.service.gov.uk/media/65c0b6bd63a23d0013c821a0/implementing_the_uk_ai_regulatory_principles_guidance_for_regulators.pdf.

integrates public information assets, eliminates duplication, ensures traceability of access, and effectively implements the “once-only” principle. It is even illegal to have the same information in more than one database, but access to the main database is granted to any entity with a legitimate need to use the data.

Spain is at an advanced level, with interoperability guaranteed by the National Interoperability Plan, while Italy is in a transition phase towards a more integrated system based on the National Digital Data Platform and cloud migration. In contrast, Austria and Germany have highly fragmented structures, lacking centralised infrastructure and based on limited inter-administrative exchanges, often founded on bilateral cooperation instruments. In the Netherlands and the United Kingdom, interoperability is pursued through standards, guidelines, and coordination mechanisms rather than through centralised platforms: the United Kingdom, in particular, relies on its national data strategy to gradually build an interoperable infrastructure, with an incremental and security-oriented approach.

China continues to face significant data fragmentation, despite repeated attempts to promote inter-administrative sharing. The United States, traditionally characterised by strong decentralisation and fragmentation, partly due to the constraints of the Privacy Act, reversed this trend in 2025, with the Trump administration investing heavily in creating a single government database to enable agency access and interoperability.

Lastly, the European Union is at an advanced stage, thanks to the Interoperable Europe Act, the construction of Common European Data Spaces, and the development of secure data-sharing platforms for the Digital Services Act, within a framework governed by the independent supervision of the European Data Protection Supervisor.

Overall, the comparison reveals a widespread convergence towards hybrid models of technology development and architectures that attempt to strengthen data circulation, despite starting from profoundly different levels of maturity: only a few jurisdictions have already institutionalised a reliable interoperable infrastructure, while others remain anchored to fragmented or evolving models, with decisive implications for the possibility of implementing robust, transparent and secure forms of algorithmic governance.

7. Conclusions

The comparative analysis of the legal systems examined allows us to draw some systemic conclusions on the evolution of administrative procedures in the era of automation, identifying convergences and divergences across the five areas examined above.

With regard to the existence or otherwise of an explicit regulatory definition of automated administrative decisions, three significant convergences can be highlighted: the almost total absence of regulatory definitions (with the exception of Spain and, to some extent, Germany); the focus is mainly on the degree of automation of the decision-making process rather than on the technology itself; and all legal systems affirm the need to ensure transparency, human control, and accountability of decisions, even in the absence of a formal definition.

There are also numerous differences, not only between countries that have a definition and those that do not, but also among the latter, there is profound heterogeneity in the methods and approaches that legal systems have favoured to compensate for the lack of a legislative definition: some have mainly relied on case law (France and Italy); others have adopted soft law instruments (the UK and the Netherlands, and to some extent the US under the Biden administration); some have taken the legislative route (Italy with Law 132 of 2025 and the UK, where a bill on the subject is expected), while others still rely on penetrating political control (China).

With regard to the existence or otherwise of an explicit general legal basis for the use of automation in public decision-making, there are three significant areas of convergence and three equally significant areas of divergence. On the convergence side, a comparative examination of the legal systems considered reveals underlying trends running through most of them, albeit with varying degrees of intensity. Firstly, there is a clear and almost universal absence of an explicit and unified legal basis for the use of algorithmic automation in the public sphere (with the notable exceptions of Italy and the EU): the regulations in force are mainly sectoral rules or references to the general principles of administrative law. Secondly, there is a tendency to view technology as merely a technical support for the exercise of powers that remain, at least formally, firmly anchored in human responsibility. A third area of convergence concerns the almost unanimous reference – sometimes explicit, sometimes implicit – to a framework of legitimacy for any use of artificial intelligence in public administration, grounded in fundamental rights, data protection, administrative transparency obligations, and general principles of due process.

On the other hand, the differences are more marked, focusing on a number of crucial conceptual issues. First of all, there is a different degree of “positivisation” of the subject: some legal systems, such as Spain, Estonia, the European Union, and now also Italy, show a more structured and penetrating level of regulation, while in others, such as Austria, China, and Germany, the discipline remains at a more embryonic stage. The United Kingdom continues to rely mainly on common law and data protection. A second line of divergence concerns the dialectic between positive authorisation models – general or sectoral – and negative authorisation models, based on the presumption of lawfulness except for specific limits. Lastly, legal systems diverge significantly in how they balance the objective of innovation with the requirements of procedural and substantive protection: emblematic of this is the contrast between the more fundamental rights-oriented approach that characterised the US framework in 2024 and the more deregulatory approach of 2025. Similarly, there is a gap between the logic of “product safety” and risk-based regulation that inspires the AI Act and the choices of individual Member States, with Estonia among the most determined promoters of public automation.

Taken together, these elements paint a picture of a legal sector that is still undergoing progressive constitutionalisation and regulatory consolidation. The “legal basis” for the use of artificial intelligence in public administration today appears to be a hybrid field, marked by tensions between implicit authorisations and external constraints, between hard and soft law, between internal rules and supranational law, between efficiency and safeguards.

Regarding the extent and use of AI in administrative decisions, comparative analysis shows that algorithmic automation in public administration is now widespread, but to very different degrees. In highly automated systems – China, the United States, and Estonia – AI is deeply embedded in public functions: from healthcare to security, from taxation to e-government. A second group of countries has a medium level of automation, characterised by extensive but not systemic use: Italy uses AI mainly for taxation, social security, and inspection activities; Spain has developed advanced regulations on automated acts, which has led to an expansion of applications; France, the Netherlands, and the United Kingdom use automation in specific sectors, often supported by transparency requirements or advanced digital infrastructures. Lastly, a third group shows a low or cautious level of automation, such as Germany and Austria, where AI is used more as technical support than as a decision-making substitute, partly due to less advanced

digitalisation or a more rights-based approach. In all jurisdictions, however, automation is mainly used for data analysis and inspection purposes, while fully automated decision-making remains relatively uncommon. The comparison shows that the differences depend not only on technological maturity, but also on political and cultural choices: from digital-by-design administration to the procedural caution of more traditional models.

As for the fourth profile – relating to procedural requirements – the existence of a “common core” of safeguards emerges with particular clarity: transparency, participation, motivation, and human supervision are, in all systems, essential conditions for the legitimacy of automated decision-making. However, even within this shared framework, the differences are not negligible. Some systems (Austria, Germany) make the legitimacy of automated decisions conditional on the absence of discretion and require human oversight; others (Estonia, the Netherlands) permit, at least in theory, broader forms of automation, provided they are accompanied by robust structures of transparency, accountability and review; still others, such as China, show significant dissonance between formal standards and the effectiveness of safeguards. It is significant that, overall, most legal systems seem to share the idea that algorithmic decision-making can never be completely removed from human responsibility, nor isolated from the obligations of intelligibility and verifiability that constitute the very essence of administrative law.

With regard to the fifth profile – concerning those involved in the development of algorithmic technologies and infrastructure – the inherently hybrid nature of the digital administrative ecosystem is confirmed. No legal system operates under a purely public or purely private model: everywhere, there is a variable mix of in-house development (BRZ in Austria; French public operators), outsourcing to technology companies, work in partnerships with start-ups and research centres, and reliance on commercial vendors. The difference lies not so much in the nature of the actors involved as in the ability of legal systems to build interoperable and secure data infrastructures: on the one hand, there are advanced models such as Estonia and the EU, characterised by integrated and traceable architectures; on the other, there are more fragmented systems such as Austria and Germany. Lastly, some political-administrative models remain strongly influenced by extra-legal dynamics, such as those in China. This heterogeneity has a direct impact on the quality of procedural guarantees, since without solid

infrastructure, transparency, accountability and contestability cannot be fully ensured.

In conclusion, it appears that administrative automation is not merely a technical innovation, but a structural transformation of contemporary administrative law. It stands at the crossroads of efficiency, the protection of rights, and democratic legitimacy, and forces legal systems to rethink the scope of public action without distorting their fundamental principles. The convergences identified show that, despite the variety of approaches, a minimum set of shared guarantees is taking shape; the divergences, however, remind us that the trajectory of automation is not neutral, but deeply shaped by the administrative cultures, technological infrastructures, and political choices of individual States. In this sense, the comparison does not produce a uniform model, but rather a constellation of solutions, offering an essential key to understanding the evolutionary direction of administrative procedure in the digital age.