

CHAPTER 26

AUTOMATED ADMINISTRATIVE DECISIONS AND DUE PROCESS: NEW PROBLEMS, NEW SOLUTIONS?

*Angela Ferrari Zumbini**

Abstract

This conclusive chapter offers a comprehensive comparative analysis of how the digital transformation of public administration—and, in particular, the widespread use of algorithms and AI systems—reshapes the traditional architecture of due process. Drawing on national reports and hypothetical cases, it demonstrates that core procedural guarantees (transparency, participation, duty to give reasons, judicial review) are neither neutralised nor preserved unchanged by automation, but are instead profoundly transformed. New substantive standards emerge—most notably traceability and human oversight—which complement and reinforce classical principles. The chapter examines how administrative discretion is increasingly exercised *ex ante* through algorithmic design, raising questions of legitimacy, accountability, and democratic control. It also analyses the evolving models of contestability and the capacity of courts to review highly technical decisions. Finally, it argues that the traditional *summa divisio* between binding and discretionary acts is no longer adequate, proposing instead a tripartite taxonomy of human, automated, and hybrid decision-making. Within the broader Coceal research framework, the chapter identifies a converging common core of procedural safeguards across jurisdictions, while highlighting persistent divergences rooted in administrative cultures, regulatory choices, and political contexts.

* Full Professor of Administrative and Public Law, Federico II University of Naples. Principal Investigator of the research project Prin 2022 (Under 40) “The dark side of algorithms under the comparative lens: automated administrative decisions between efficiency and due process” funded by the Italian Ministry of University and by the European Union - NextGenerationEU Grant Agreement no. E53D23006810006.

TABLE OF CONTENTS

1. Introduction: The State as a promoter of AI development.....462

2. Automated administrative decisions and due process:
the transformation of traditional principles.....466

 2.1. From transparency to intelligibility
(or substantial algorithmic transparency).....467

 2.2. From the duty to give reasons to
the comprehensibility of the choice.....470

 2.3. From deductive to inductive reasoning.....473

 2.4. Extension of responsibility for algorithmic decision-making.....475

3. Automated administrative decisions and due process:
new principles..... 479

 3.1. Traceability.....480

 3.2. Human supervision..... 482

4. Anticipation of discretion.....486

5. Contestability..... 491

6. From a *summa divisio* to a division *in partes tres*.....495

7. Conclusions.....500

1. Introduction: The State as a promoter of AI development

In today’s landscape, public authorities are not only called upon to regulate the use of artificial intelligence by third parties; they are also becoming active promoters and users¹. The use of algorithms and artificial intelligence systems in administrative action is now widespread in many legal systems, following the digitalisation of public administration promoted by governments themselves². Several States have adopted national AI strategies and digital transformation plans to

¹ See data collected by Stanford University, “The AI Index Report 2025” (2025), pp. 352–360, report available online: https://hai-production.s3.amazonaws.com/files/hai_ai_index_report_2025.pdf.

² Z. Engin, J. Crowcroft, D. Hand, P. Treleaven, *The Algorithmic State Architecture (ASA): An Integrated Framework for AI-Enabled Government* (2025), at <https://doi.org/10.48550/arXiv.2503.08725>; E.W. Welch, *Introduction to the Research Handbook on E-Government*, in E. W Welch (ed.), *Research Handbook on E-Government* (Cheltenham: Edward Elgar, 2021); D.R. Troitiño, *eGovernance as a Future Option*, in D.R. Troitiño (ed.), *e-Governance in the European Union* (2024).

exploit the benefits of automated decision making in efficiency, speed and data analysis³.

Public authorities adopt AI tools to manage large volumes of decisions quickly and reduce the risk of subjective bias, considering them a key factor in good administration. A prime example of this is Italy, where the recent Law No 132/2025 expressly requires public authorities to “use artificial intelligence for the purpose of increasing efficiency..., reducing the time taken to complete procedures and increasing the quality and quantity of services” and ensure that AI systems operate transparently and their use is traceable. Similarly, at the supranational level, the European Union, through the introduction of the Artificial Intelligence Act, has acknowledged the strategic nature of AI in the public sector, classifying the algorithmic systems used by authorities as high risk and imposing horizontal transparency and human oversight obligations for their use⁴.

However, this technological transformation of administrative action – where the State as regulator also becomes a developer and user of algorithms – raises new questions about the stability of the fundamental principles of administrative law in the algorithmic era⁵. Traditional procedural guarantees (transparency, participation, motivation, access, judicial review) risk being put under pressure by decisions that are potentially increasingly opaque and automated⁶. We

³ M. Conticelli, A. Ferrari Zumbini, M. Infantino, *Automating Administrative Decisions in Europe and the United States: The Algorithmic State from a Comparative Perspective*, in 12 *Journal of International and Comparative Law*, 179 (2025).

⁴ J. Ponce, A. Cerrillo-i-Martínez (eds), *The EU Artificial Intelligence Act and The Public Sector* (2025); O. Mir, *The AI Act from the Perspective of Administrative Law: Much Ado About Nothing?*, 1 *European Journal of Risk Regulation* 1 (2024).; H.C.H. Hofmann, F. Pflücke (eds), *Governance of Automated Decision-Making and EU Law* (2024); M. Almada, N. Petit, *The EU AI Act: Between the rock of product safety and the hard place of fundamental rights*, 62 *Comm. Market L. Rev.* 85 (2025). As it is well known, some of the AI Act’s provisions (as well as of the GDPR) will foreseeably be subject to targeted simplification in the near future as a consequence of the *Digital Omnibus Package*, in order to ensure timely, smooth and proportionate implementation. See the regulation proposal presented by the European Commission on 19 November 2025 (COM(2025 836 final)).

⁵ B. Marchetti, *Artificial Intelligence and Public Authorities: Does the European AI Act Protect Public Values?*, 1 *Eur. Rev. Pub. L* 67 (2024); E. Carloni, *Transparency within the Artificial Administration Principles, Path, Perspectives and Problems*, 16 *It. J. Pub. L.* 8 (2024); L. Cluzel-Métayer, *The Judicial Review of the Automated Administrative Act*, 1 *Eur. Rev. Dig. Admin. & L.* 101 (2020); R. Kennedy, *The Rule of Law and Algorithmic Governance*, in W. Barfield (ed), *The Cambridge Handbook of the Law of Algorithms* (2020).

⁶ On the legality of algorithmic administrative action and the upholding of the principles of the rule of law, see: C. Blanco de Morais, G. Ferreira Mendes, T. Vesting, *The Rule of Law in Cyberspace* (2022).

must ask ourselves, for example, how those affected can meaningfully participate in an algorithmic decision; whether the source code of a program is accessible; and, most importantly, whether such access alone is enough to make the AI system's logic understandable. Additionally, we need to consider how the obligation to give reasons should be interpreted when the final decision is the opaque outcome of a mathematical model; whether and how a judge can review a fully automated decision, especially when the algorithm involves machine-learning and is non-deterministic; and how human supervision of the machine's work should be conducted to ensure it is genuine and effective, rather than merely symbolic. These questions arise with significant urgency in all the countries examined in this study.

In many countries, courts have already heard controversial cases concerning whether automated decisions comply with the right to due process and the principle of transparency. On the regulatory front, several jurisdictions have begun to take action: France, which recognised the source code of administrative algorithms as an administrative document in 2016; Germany, which since 2017 has allowed fully automated decisions only when no discretion is involved; and very recent reforms, such as the aforementioned Italian law of 2025. However, there is still a general lack of comprehensive legal frameworks for administrative automation – a gap that is only now beginning to be addressed through sector-specific or supranational initiatives – while the use of algorithms continues to spread rapidly throughout administrative processes and organisational practices.

The research – using a bottom-up approach to comparative law based on a questionnaire and hypothetical cases⁷ – reveals that the challenges posed by automating administrative decision making recur in a wide range of legal systems, as does the need to ensure a 'minimum common' set of procedural safeguards. Specifically, all the systems examined highlight the need to protect fundamental safeguards such as transparency, participation, motivation, and the human oversight of algorithmic processes. Despite the diversity of the regulatory frameworks and institutions, the comparative analysis reveals the emergence of a common core of procedural requirements – including the right of access to information, participation of interested parties, traceability of the reasoning process, verifiability and comprehensibility of algorithmic outputs, the possibility to contest automated decisions,

⁷ On the methodology of this research project, see the Introduction to this volume.

and human supervision of outcomes – which have progressively adapted to the technical specificities of automated decision making.

At the same time, profound differences remain, reflecting varying administrative cultures, distinct models of technological governance, and different balances between innovation goals and safety requirements. In some jurisdictions – typically those with the highest levels of automation, such as China, the United States, and Estonia – AI has been massively integrated into public services, ranging from healthcare and security to taxation and e-government, all in the name of streamlining the administrative machine. In other countries, AI use is more targeted and sector-specific. For example, in Italy, France, the Netherlands, and the United Kingdom, automation supports specific procedures. In Spain, advanced regulations on automated decisions have encouraged a controlled expansion of AI applications. Some countries, like Germany and Austria, are more cautious or slower to adopt digital technologies and use AI almost exclusively as a technical aid. These differences depend not only on the level of technological maturity but also on political and regulatory choices. A clear example is the contrast between the more rights-oriented of the US framework in 2024 and the more deregulatory approach that emerged in 2025. Similarly, we might consider the gap between the logic of accountability and risk-based regulation that underpins the European AI Regulation (AI Act) and the choices made by individual Member States – some, like Estonia, are among the most determined promoters of automation, while others take a more cautious approach.

In this context, comparative experience helps us identify shared features – which tend to form a kind of ‘common core’⁸ of procedural safeguards also guaranteed in algorithmic administration – and divergences, which reveal the deep tensions between technological efficiency, the protection of rights, and democratic accountability.

The sections that follow will comprehensively (and critically) analyse how traditional procedural principles of administrative law are evolving in the era of automated decision-making (section 2), what new principles are emerging alongside them (section 3), how the exercise of administrative discretion is being rethought within the digital ecosystem (section 4), and how judicial review processes and the contestability of decisions are changing (section 5). Subsequently, a brief reflection is offered on moving beyond the traditional dichotomous framework

⁸ On the common core, see G. della Cananea, *The Common Core of European Administrative Laws. Retrospective and Prospective* (2023).

(binding acts versus discretionary acts) in favour of a more nuanced tripartite division that distinguishes between human, automated, and hybrid decisions (section 6). Without making any *a priori* prescriptive claims, these reflections are intended to offer a comparative interpretation of how due process has evolved in response to the challenges posed by automation. Lastly, section 7 synthesises the comparative findings and situates them within the broader Coceal⁹ research framework, highlighting how the emerging transformations of due process fit into the common core of European administrative laws.

2. Automated administrative decisions and due process: the transformation of traditional principles

The introduction of AI into administrative procedures forces us to rethink the structure and operation of traditional procedural principles – such as transparency, participation, motivation, accountability – that have historically ensured the legitimacy and fairness of administrative decisions¹⁰. Comparative analysis shows that these principles, far from being nullified by technology, remain, albeit transformed, adapting to the new technical context. We are thus witnessing a dual dynamic.

On one hand, countries agree in reaffirming the fundamental principles of due process in the digital environment: algorithms do not operate in a vacuum without safeguards but are, at least in principle, subject to the rules of general administrative law. This outlines a shared core of procedural requirements – access to information, adversarial proceedings, traceability of reasoning, comprehensibility and contestability of output, and human supervision – increasingly recognised worldwide as essential, albeit in different forms, depending on the legal system.

On the other hand, when attempting to apply traditional principles to automated processes, new issues of interpretation and implementation arise, sometimes leading to conflicting solutions. This

⁹ On the “Common Core of European Administrative Laws – CoCEAL” Project, see G. della Cananea, M. Bussani, *The Common Core of European Administrative Laws: A Framework for Analysis*, 26 Maastricht J. Eur. & Comp. L. 217 (2019) and the project website, www.coceal.it. The results of the research on the *Common Core of European Administrative Laws* are published in the series of the same name by Oxford University Press (7 volumes have been published to date, and another 2 are in the process of being published).

¹⁰ On the subject of procedural guarantees see, in a comparative perspective, G. della Cananea, L. Parona, *Administrative Procedure Acts in Europe: An Emerging “Common Core”?*, 72 Am. J. Comp. L. 324 (2024).

section will examine the evolution of four cornerstones of administrative action: transparency (§ 2.1), the duty to provide reasons (§ 2.2), the logical structure of decisions (§ 2.3), and the framework of administrative liability (§ 2.4).

2.1. From transparency to intelligibility (or substantial algorithmic transparency)

In all the legal systems examined, one principle is clear: the use of algorithms in proceedings does not exempt public authorities from their transparency obligations. Indeed, transparency emerges as an essential prerequisite for any procedural legitimacy in automation. However, achieving this in practice requires moving beyond formal transparency to ensuring that algorithms are truly understandable. Traditional access to records or documents is no longer sufficient. When dealing with complex mathematical models and codes, it is essential to ensure that decision-making processes are both understandable to recipients and verifiable by external parties.

Opening the algorithmic black box¹¹ completely may be ineffective if it overwhelms users with indecipherable technical information. Having access to all the training documentation might actually be counterproductive when there is too much to review, making it impossible to examine everything thoroughly. The real challenge, therefore, is to provide clear and focused explanations of how the automated system works, enabling users to understand the logic behind its decisions.

Many legal systems have therefore introduced obligations aimed at promoting 'algorithmic transparency' in a substantive sense, i.e., making the machine's functioning clear and verifiable¹². In Spain, for example, Royal Decree 203/2021 requires the proactive publication of automated acts, with a description of the mechanisms, the data used, and the logic underlying the algorithmic action, and the very recent ruling of September 2025 also imposed access to the source code¹³. In France, since 2016, the *Code des relations entre le public et l'administration* (CRPA) has enshrined a genuine 'right to understand' algorithms: a public body must inform interested parties when an individual decision is taken on

¹¹ F. Pasquale, *The Black Box Society* (2015).

¹² See the chapters on the national legal systems in Part II of this volume.

¹³ *Tribunal Supremo*, judgment of 11 September 2025 in the BOSCO case. In particular, the *Tribunal Supremo* recognised the right of Civio, a non-profit organisation, to access the source code of Bosco, an algorithm used to determine the eligibility of citizens to receive a social welfare subsidy known as the 'social bonus'.

the basis of automated processing, specify its purposes, providing – on request – the rules governing the functioning of the system and even disclose its source code. French administrative case law has interpreted these obligations extensively, ruling out the possibility of invoking trade secrets to deny information when an algorithm affects decisions concerning individual rights¹⁴.

Similarly, in Italy, case law has classified algorithms as administrative acts or administrative documents, making them subject to the transparency obligations under Law No 241/1990: administrative bodies are required to provide interested parties with all information regarding the functioning of AI, ensuring that the software is understandable¹⁵. The most recent Italian law (Law No 132/2025) has further reinforced this approach by requiring public authorities to use AI in a manner that ensures its operation is understandable and its use traceable. In other contexts, lacking specific regulations, the courts have established transparency as a fundamental principle: for instance, in the Netherlands, case law requires authorities to disclose all relevant data and assumptions – including the personalised inputs processed by the algorithm – so that they are accessible and comprehensible to both the parties involved and third parties. Similar patterns are observed in the United Kingdom, where transparency obligations stem from both data protection regulations and common law principles of procedural fairness: even when a decision is made by an automated system, citizens have the right to understand the factual and legal grounds on which it is based¹⁶. These developments indicate a shift from ‘formal or documentary’ transparency – understood as the mere disclosure of documents – to substantive transparency, which aims to make automated decisions intelligible and verifiable for those affected by them.

Of course, differences remain in the intensity of this transparency. In some jurisdictions, the duty of disclosure is extensive (up to the delivery of the source code in clear text, as required in France, Italy, and most recently, Spain); elsewhere, general information requirements are sufficient. In certain cases, transparency must be balanced against other competing interests, such as protecting developers’ trade secrets. Emblematic in this regard is the debate on access to algorithms held by private suppliers. The prevailing solution in the legal systems examined

¹⁴ See the chapter on France in Part II.

¹⁵ See the chapter on Italy in Part II.

¹⁶ See the chapter on the United Kingdom in Part II.

prioritises public interest in transparency over trade secrets when the rights of the parties concerned are at stake.

This approach highlights the ultimate meaning of algorithmic transparency (as well as traditional transparency): it is not (only) a tool for publicity, but is functional to the subsequent verifiability and contestability of the result produced by the machine. Substantive transparency becomes, in short, the first link in a chain of guarantees: only an intelligible algorithm can be subjected to effective internal and external control.

Lastly, it is important to note that transparency on paper can differ from reality. For example, in China, the Personal Information Protection Law (PIPL 2021) formally imposes transparency and access-to-information obligations on public authorities and even allows individuals to reject decisions made solely by automated processes, in a similar way to the European GDPR. However, these provisions are currently only theoretical; there have been no concrete cases in which a citizen has successfully obtained information in court about an algorithm used by a public authority. In contrast, recent news reports have documented cases of AI misuse that undermine transparency. A notable example is the ‘red code’ incident in Henan, China, in 2022. Local authorities manipulated an algorithm originally designed for tracking the spread of the SARS-CoV-2 virus to fraudulently assign high-risk status to hundreds of citizens who were planning to protest against a financial scandal. This effectively prevented them from travelling¹⁷.

This scandal – which did not result in any administrative accountability or judicial annulments – highlights how, without effective institutional checks and balances, declared transparency can be easily circumvented by public authorities¹⁸.

The comparison therefore also serves as a warning: the effectiveness of algorithmic transparency depends on the systemic conditions – such as judicial independence, democratic pluralism, and robust technical infrastructure – under which AI is implemented. If these conditions are not met, there is a high risk that transparency will remain an abstract promise with no real impact on citizens’ lives.

¹⁷ On this subject, see H. Yu, J. Willaig Zeuthen, *Local Politics in the Age of Automated Decision-Making in China: A Case Study of the Henan Health Code Scandal*, 50 *Journal of Contemporary China* 923 (2023).

¹⁸ See the chapter on China in Part II. In broader terms, see M. Busoloc, *Accountable Artificial Intelligence: Holding Algorithms to Account*, 81 *Pub. Admin. Rev.* 825 (2020).

2.2. From the duty to give reasons to the comprehensibility of the choice

A second key principle undergoing transformation is that of the obligation to provide reasons. Traditionally, every administrative measure must be supported by reasons that explain the factual assumptions and legal grounds for the decision. However, in the face of algorithmic decisions, this principle is subject to a twofold tension: on the one hand, the risk of its *de facto* circumvention (the algorithm ‘simply decides’, without producing a textual justification); on the other hand, the need to rethink the methods so that the justification once again fulfils its fundamental function, which is to make the administrative choice comprehensible and controllable. In all the legal systems analysed, the postulate that the obligation to provide reasons cannot be sacrificed or mitigated simply because the decision is made with the aid of an algorithm applies. As stated by the Regional Administrative Court of Naples in 2022, the principle of transparency – of which the statement of reasons is an immediate expression pursuant to Article 3 of Law 241/1990 – cannot be suppressed or reduced solely because of the presence of an algorithm within the procedural process¹⁹.

Every legal system has sought to reinterpret this obligation to ensure that even a measure produced (in whole or in part) by an automated system is accompanied by intelligible and verifiable reasons, and that the authority using it remains obliged to justify its decisions according to the ordinary rules (facts, rules applied, assessments made). In other words, the duty to explain administrative decisions remains intact, but the form and substance of the reasoning are adapted to take account of the intervention of AI.

However, although this is the common imperative, different systems seek to implement it in various ways in practice. The pathological situation used as a test case – common in our study hypotheses – is one in which the automated measure lacks explanation or is justified tautologically, simply referring to the machine’s response. For example, when a bonus is denied, the IT platform informs the user with a brief message: You are not entitled to the bonus, without providing any reasons for the ineligibility²⁰.

Consider, for example, the denial of a commercial licence application: the rejection simply cites the ‘negative opinion’ generated by

¹⁹ TAR Campania, Naples, 14 November 2022, no. 7003.

²⁰ See Part III above, Case 1.

the AI program and states, in an entirely generic way, that granting the authorisation would be against the public interest²¹.

In such situations, nearly all legal systems agree that the decision is unlawful. The lack of reasoning is a procedural defect that allows the interested party to seek annulment of the act, as it prevents verification of its substantive correctness. For example, in Spanish law, the obligation to provide reasons is established as a general principle. Case law has clarified that even automated decisions must comply with this requirement, possibly by providing posthumous reasons, but always within the context of the proceedings. In German law, a measure that lacks proper reasoning or contains only superficial reasoning can also be challenged as voidable, especially if it was adopted automatically. Similar considerations apply to Italian and French law, as well as to other legal systems. At first glance, the lack of reasoning in an algorithmic decision appears to have the same consequences as it does in a human decision: a defect in legitimacy and the nullification of the act.

The issue becomes more complex when we consider the system adjustments necessary to *prevent* such pathological outcomes. In other words, how can we ensure *in advance* that algorithmic decisions are supported by meaningful reasoning? Here, we observe a conceptual shift from the formal obligation to provide reasoning to the substantive comprehensibility of the choice. The goal is no longer merely to produce a formally reasoned act, but to ensure that citizens understand the reasons behind the measure that affects them. Some legal systems have introduced *ad-hoc* procedural rules. For example, in France, authorities that use algorithmic measures must notify the affected individuals in advance and, upon request, provide an explanation of how the system works (see above § 2.1). Additionally, there is now a requirement to store and provide access to the criteria and parameters used by the software. For example, in the case of school recruitment using an algorithm (the *Trantor* case²²), it was determined that the administrative body should at least publish or inform the users of the decision-making rules used by the software to allocate places, allowing candidates to understand the reasons for any anomalies.

Similarly, in the Netherlands, the obligation to give reasons is based on the principles of good administration: when an automated system is used, the reasons for the decision must explain the role played by the algorithm, the choices relating to the input data, and the logical

²¹ *Ibid.*, Case 2.

²² See Part III above, Case 3.

link between the latter and the outcome, which will ensure possible judicial review of decisions taken by the public authorities²³. The reasoning therefore tends to include a technical explanation: the authority must clarify not only the law applied, but also the functioning of the algorithmic process (data considered, parameters used, etc.), otherwise the outcome will not be understood.

Another solution, adopted in English and partially in US law, is to permit administrative bodies to add reasons posthumously during litigation. If someone challenges an automatic refusal and complains about the lack of reasoning, the authority concerned can provide additional reasons or clarifications to the court in support of the decision. However, the distinction between subsequent clarifications – which may be admissible – and completely new reasoning introduced after the fact, whose admissibility is questionable, is very blurred. On the other hand, this practice of providing reasons after the fact is viewed with suspicion in civil law systems, where the legitimacy of a measure is assessed on the basis of its content at the time it was issued. In our investigation, for example, one question was whether the local authority could provide additional human reasons during the proceedings to support a measure that was initially justified solely by reference to the algorithm. Some common law systems might tolerate this within the framework of a substantive review of the decision's reasonableness. However, other systems, such as those in Italy or Spain, would consider it irrelevant for annulment purposes, which would still be necessary because the original act contains an irremediable defect. In any case, the possibility of posthumous reasoning does not solve the problem of comprehensibility for the data subject, who would initially remain unaware of the reasoning behind the decision.

From the comparative perspective, the idea emerges that the obligation to give reasons for automated decisions should translate into a requirement to 'explain' the algorithmic output. The focus shifts from the paper document (where 'reasoning' is understood as the textual part of the decision) to the substantive logical process: comprehensibility by design. In other words, legal systems aim to ensure that the choices made by algorithms can be reconstructed and understood retrospectively. This can be achieved through various tools, such as intrinsically explainable algorithms ('explainable AI') and documentation of the factors and weights considered. For example, in the Netherlands, following serious scandals – such as the case involving family allowances – the need for

²³ See the chapter on the Netherlands in Part II.

decision-making algorithms to be accompanied by explanatory notes and records has been emphasised. This ensures that, in the event of an appeal, the logical steps taken by the software can be traced and reviewed²⁴.

Although the EU AI Act principally targets AI system manufacturers, it also includes requirements for documentation, reasonable explanations, and the provision of meaningful information for users. These measures are designed to enable effective verification of the accuracy of results after they are produced²⁵.

In summary, the obligation to provide reasons is shifting focus: from the decision itself to the decision-making process, and from form to substance. The reasoning underlying an algorithmic action need not correspond to a written paragraph; rather, it lies in the individual's (and the court's) ability to understand the logical process that led to the decision.

2.3. From deductive to inductive reasoning

The issue of reasoning is closely related to changes in the logical structure of decision-making. Traditional administrative decisions are justified through deductive reasoning: starting from a general rule, we examine the specific facts, apply the relevant criteria, and reach a conclusion through a logical, step-by-step process. For example, if rule Y requires meeting a certain criterion to obtain a favourable decision and X does not meet that requirement, then the application is rejected. In the case of algorithmic decisions, however, this deductive pattern is often absent. When working with machine-learning AI systems or complex algorithms, the logical path the machine will follow in each case is not known in advance. The initial input and final output are known, but it is not always possible to list in advance all the premises, rules, or assessments that led to that outcome. The result is that the understanding of the decision-making process shifts to a *post hoc* perspective: moving away from the traditional deductive method – where the authority presents the premises and reaches a conclusion – towards an almost inductive or reconstructive approach, in which the reasons are traced back from the outcome. The algorithm produces a result (in our example, that Mr X is not entitled to the bonus), and only afterwards must the authority and the court determine the reasons justifying it by referring to how the system operates.

²⁴ See the chapter on the Netherlands in Part II.

²⁵ See the chapter on the European Union in Part II, as well as O. Mir, *The AI Act from the Perspective of Administrative Law: Much Ado About Nothing?*, cit. at 3, 63.

This reversal of perspective presents unprecedented challenges. The first priority is to ensure the traceability of reasoning (a topic that will be discussed later): the algorithmic process must produce traces, logs, or other elements that allow the logical steps to be reconstructed retrospectively. The second challenge is to equip authorities with tools for *ex-post* verification of output. Since not all reasoning can be known in advance, it is necessary for public authorities to perform ongoing oversight by conducting frequent tests, updates, and, when necessary, adjustments to the algorithm downstream, as recommended by the Italian *Consiglio di Stato* in some of its early rulings on the matter²⁶.

In other words, when dealing with algorithms that evolve autonomously and can produce unexpected results, an authority must exercise extra vigilance by continuously monitoring the system's performance and correcting its course whenever it deviates from acceptable parameters.

It should be noted that this represents a form of institutionalised inductive reasoning: instead of justifying each individual decision deductively, a public body must observe the overall pattern of decisions made by the AI and determine whether the algorithm is operating in accordance with established principles and purposes. This type of activity can be described as systemic motivation or technical accountability: empirically ensuring that algorithmic outcomes are logical and align with regulatory goals. Court cases like the Dutch child benefits case – where a 'tax' algorithm unfairly flagged thousands of fraud charges – have demonstrated that the only way to discern the system's irrationality was to examine overall patterns and identify statistical anomalies, such as the disproportionate impact on foreigners. In this case, the judge took an inductive approach: based on the number and nature of the decisions, he concluded that systematic discrimination was occurring and ruled that the entire automated process was unlawful.

Clearly, this also requires a paradigm shift for public officials: it is no longer enough to simply apply rules to known facts. They must also know how to ask the algorithm the right questions, understand how it operates, and, when necessary, explain the reasons behind its decisions. There is thus a need for new technical and legal skills that can effectively manage inductive reasoning. Several jurisdictions are investing in this direction. One example is the creation in the US of positions such as the Chief AI Officer in each federal agency, tasked with monitoring AI use

²⁶ See the chapter on Italy in Part II.

cases and assessing their risks²⁷, which reflects a desire to develop auditing and explanatory capabilities for algorithmic systems within public administration.

From a theoretical point of view, the shift from the deductive to the inductive model invites reflection on a renewed conception of administrative rationality. The rationality of the act is no longer guaranteed solely by the correct syllogistic application of rules to facts, but also by the possibility of reconstructing and verifying *a posteriori* the consistency of the output with the principles of the legal system. This is a change that some legal systems have already incorporated into their legislation: Italian Law No 132/2025, for example, as we have seen, expressly refers to the 'traceability' of the use of AI, implying that there must be a record or memory of how the algorithm arrived at a certain conclusion²⁸. Other legal systems, such as France, entrust this task of reconstruction to the right of access (the user can ask on what rules and data the decision was based, thus obtaining *ex post* the elements to retrace the logical path). Others, such as the United Kingdom, aim to adapt the principle of unreasonableness (known as the Wednesbury principle) to the unreasonableness of AI. Regardless of their interpretation, all of these solutions aim to make the algorithmic output 'justifiable' during scrutiny, filling the gap left by the impossibility of knowing all the premises of the decision. We are therefore faced with an evolution of the very concept of motivation: from the justification of the individual measure to the justifiability of the automated process as a whole.

In conclusion, the advent of automated decisions requires public authorities to both explain in a different way (using, when necessary, inductive reasoning to reconstruct the decision-making process) and to decide differently (integrating the indications drawn from algorithmic outputs into its evaluation processes). This dual change does not abolish the traditional principles of logic and motivation; rather, it reinterprets them: motivation becomes more empirical and experimental, relying on *ex-post* analysis and consistency checks, while the logic of the measure is defined by the overall consistency of the algorithmic system.

2.4. Expansion of responsibility for algorithmic decision-making

A further effect of automation concerns the sphere of responsibility and accountability for administrative acts. In traditional

²⁷ See the chapter on the United States in Part II.

²⁸ Art. 14, para. 1, Law No 132/2025.

models, responsibility for the decision lies with a clearly identified official or body, who signs the measure and assumes liability for it. The introduction of algorithms has complicated the situation, raising concerns about potential widespread lack of responsibility: if the algorithm makes the decision, who is held accountable? Legal systems have responded by firmly reaffirming a key principle: automated decisions are still attributable to the authority that makes them. In other words, using an algorithm does not break the chain of responsibility; instead, it broadens its scope. A public body is responsible not only for the final decision but also for the choice to use a specific AI system and how it was designed, configured, and managed.

This statement is embodied in various legal and organisational instruments. In many jurisdictions, for example, it has been decided to establish personal responsibility by requiring officials to take ownership of automated decisions. In Austria, Article 18 AVG mandates that written decisions be approved and signed by an authorised individual, so even decisions generated by AI must ultimately be certified by an official²⁹.

The human signature, though merely formal, signifies the presence of a responsible party. Similarly, as we have seen, Germany allows fully automated measures only in specific cases where no discretionary judgement is involved; in all other cases, the involvement (or at least oversight) of a human decision-maker is considered necessary, a principle reflected in Article 20 of the *Grundgesetz*, which binds public authority to accountability toward citizens. Furthermore, the cultural values reflected in Article 12 of the Constitution of the Land of Bremen, which states that humans are superior to technology and machines, highlighting a deep-seated distrust of the idea that machines can make decisions without human supervision and accountability³⁰.

In other contexts, the response has been to regulate responsibility through *ad-hoc* texts. The aforementioned Italian Law No 132/2025 explicitly states that the use of AI by public authorities must respect “the autonomy and decision-making authority of the individual, who remains solely responsible for any measures and procedures involving artificial intelligence”³¹. This is an extremely important provision: it establishes that there must always be a natural person responsible for

²⁹ See the chapter on Austria in Part II, as well as J. Hengstschläger, D. Leeb, *Verwaltungsverfahrenrecht* (2023).

³⁰ See the chapter on Germany in Part II.

³¹ Art. 3, para. 3, Law No 132/2025.

administrative acts, even when those measures result from algorithmic processing.

This is precisely what the phrase ‘extended responsibility’ refers to: the adoption of AI requires public authorities to assume new duties of diligence and oversight, under the risk of being held liable. In other words, public authorities are no longer responsible only for the administrative act itself but also for how it was created and the technical tools used. After all, moving beyond the administrative measure is consistent with the emphasis that various legal systems traditionally place on administrative procedure³². However, there is an additional burden: evaluating the algorithm’s reliability upstream, monitoring its use, and preventing malfunctions and distortions. To some extent, the public administration becomes responsible for its own algorithm, much as a manufacturer is responsible for its product. Therefore, it is not surprising that many States are introducing mechanisms to audit and certify the algorithmic systems used in the public sector. The AI Act requires EU administrations to conduct impact assessments for ‘high-risk’ systems, select technologies that meet quality standards, maintain records of their use, and ensure human supervision. Although these obligations are presented as protections for individuals, they ultimately place greater responsibility on user entities.

Awareness of this increased responsibility is also evident in procurement practices and public-private partnership models. In jurisdictions such as the Netherlands, where many algorithmic solutions are developed externally, standard contractual clauses are used to reiterate the ultimate responsibility of the purchasing public or administrative body. This means that software tender specifications often require the supplier to ensure transparency, provide documentation, and allow for human intervention, while the contracting authority retains ultimate control.

Similarly, in the United Kingdom, where the production of AI technologies for the public sector is almost entirely delegated to private companies, the central government functions more as a regulator and overseer than a developer, establishing ethical principles (the ‘five principles for AI’ in the public sector) and guidelines for agencies to adopt market solutions responsibly³³. Here too, although there is no

³² For Italy, we can refer to A.M. Sandulli, *Il procedimento amministrativo* (1940) and F. Benvenuti, *Funzione amministrativa, procedimento, processo*, 1 Riv. trim. dir. pubbl. 118 (1952); for Austria, see F. Tezner, *Das österreichische Administrativverfahren. Systematisch dargestellt auf Grund der verwaltungsrechtlichen Praxis* (1925).

³³ See the chapter on the United Kingdom in Part II.

specific obligation, it is understood that the public body using the technology must monitor the supplier and take responsibility for how the technology is implemented. It is no coincidence that in the UK, public intervention emphasises *ex ante* supervision and ethical-operational monitoring rather than technical aspects. In other words, regardless of the algorithm's origin, the authority must oversee it and be held accountable.

A particularly interesting case is that of Estonia, where public administration is significantly advanced from the technological point of view³⁴. Estonia encourages automation but makes it clear that authorities remain responsible for the parameters provided to the system. Additionally, human intervention is obligatory if the algorithm cannot safeguard important values, such as privacy, security, or fairness in decision making. This means that officials must configure the algorithm properly beforehand (*ex-ante* responsibility) and continuously monitor its results, intervening if any anomalies or injustices are detected (*in- itinere* responsibility). Technical responsibility is part of administrative responsibility: choosing an algorithm that is too opaque or unreliable can itself constitute a breach of official duties. It is no coincidence that Estonia is reforming its administrative procedure law to introduce general rules on automation in compliance with the European AI Act and is probably aiming to better define duties and responsibilities in this area.

In general, then, rather than reducing authorities' responsibility, AI tends to broaden its scope. Effective administration in the digital age is measured not only by the final outcome but also by the entire technological process: from the reliability of the chosen (or developed) algorithm, to the quality of the data used, and the ability to implement corrective interventions. This also involves evolution in terms of oversight: administrative courts, for example, are beginning to scrutinise not only the legitimacy of the act but also whether an authority has thoroughly verified the operation of the system that led to it. In Italy, case law has established that algorithms are fully subject to review by the administrative courts, which may require an authority to provide the source code or technical documentation in order to identify any defects, a requirement that supports the principle of accountability: public bodies may be required to explain their algorithmic decisions in court³⁵.

One final consideration concerns the formal attribution of the decision. In the past, it was accepted that the measure belonged to the

³⁴ See the chapter on Estonia in Part II.

³⁵ See the chapter on Italy in Part II.

office or official who issued it. Today, however, some legal systems have introduced regulations to determine who is responsible for decisions made by machines. For example, in defining '*actuación administrativa automatizada*' in its Ley 40/2015, Spain has established that administrative actions carried out "within the framework of an administrative procedure and without the direct involvement of a civil servant" are considered to be performed by the public authorities³⁶. Thus, the law itself attributes the act to the authority concerned, even if no official was involved. Austria, as mentioned, considers automated decisions approved by the competent authority simply because they are generated in its IT systems (under federal tax law)³⁷.

Formulas such as these are intended to avoid gaps in attribution and resolve any dispute about 'who' is the legal author upstream. However, the fundamental question remains as to who controls that decision and who is accountable for it. On this point, the agreed solution is clear: the administrative head or the delegated official is held accountable as if they had made the decision themselves. If the algorithm is incorrect, it will be treated as an administrative error, with all the consequences this entails, such as annulment or compensation. Ultimately, AI does not eliminate the human element of responsibility; rather, it increases the moments when that responsibility must be evident – such as when choosing the tool, supervising the process, and performing the final review.

3. Automated administrative decisions and due process: new principles

Alongside the transformation of traditional principles, comparative analysis reveals the emergence of new, specific principles intended to be integrated into the framework of guarantees for automated procedures. These requirements were previously assumed or overlooked in traditional procedures, but they are now independently important for ensuring the fairness and legitimacy of automated processes. In particular, the traceability of operations and human oversight of algorithmic decision-making have become key principles, attracting specific attention in numerous national and supranational legislative reforms and guidelines. These new principles do not contradict traditional ones; they actually support them. For example,

³⁶ See the chapter on Spain in Part II.

³⁷ See the chapter on Austria in Part II, and D.M. Schneeberger, *Machine Learning in der Verwaltung* (2024).

traceability is a prerequisite for effective transparency and verifiable reasoning, while human oversight is a corollary of the principle of legality and the system of accountability. It should be noted that these new standards are also incorporated into EU law: the AI Act places particular emphasis on logging, documentation, and human oversight requirements for high-risk AI systems, establishing a comprehensive framework to strengthen these requirements for authorities that use them. The sections to follow analyse the content of these new principles and examine how they are implemented in various legal systems.

3.1. Traceability

The traceability of automated decisions has become a fundamental principle for ensuring due process in the digital age. In general terms, traceability refers to the ability to reconstruct all the steps an algorithm has taken to arrive at a given outcome. If transparency is the goal, then traceability is the practical tool that makes it achievable. Traceability involves keeping records, logs, and histories of a system's operations, allowing one to track the 'traces' of digital reasoning. In this way, traceability serves an algorithm much like minutes or files do in traditional proceedings.

Almost all the legal systems studied agree on the importance of this principle, albeit to varying degrees. Some countries explicitly enshrine this requirement in legislation. For example, as mentioned earlier, Italy's Law 132/2025, Article 14(1), mandates the 'traceability of use' of AI by public bodies. This means that each public authority must have mechanisms in place to document when and how an algorithm is used in a procedure, what data it processes, the intermediate results it produces, and so on. Similarly, European law, through the AI Act, requires suppliers and users of high-risk AI systems to maintain logs of processes and prepare detailed technical documentation to specifically ensure the possibility of audits and *post hoc* reconstruction. Although the AI Act primarily targets suppliers, its effects extend to user authorities – the deployers of these systems.

In some jurisdictions, traceability is considered an extension of existing principles and protections. Estonia's e-government laws also enforce high standards for registration and interoperability. The well-known X-Road system connects all public databases and ensures that every access to or exchange of data between entities is traceable. In Estonia, it is illegal to store the same information in multiple databases, and every data access is logged and linked to a legitimate purpose. This means that algorithmic operations always leave a documentary trail,

allowing the process to be reconstructed. The issue is also felt in Spain: the National Interoperability Plan and digital administration regulations provide for standard formats and unique identifiers for automated acts, so that if an algorithm is used in adopting a measure, it is marked as automated and recorded in searchable systems.

In the common law systems discussed here, traceability is less formalised but equally important. In the United Kingdom, for example, there is no law requiring logs to be kept for automated decisions. However, the Data Protection Act and principles of fairness still impose a duty to retain information to understand how a system has reached a decision. It should be noted that defending an unreasonable algorithmic measure in court will require the authority concerned to present evidence explaining how the system works, so it is in the public body's interest to equip itself with audit tools that enable such a defence. It is no coincidence that one proposal calls for the creation of a public register of algorithms used in government administration – a possibility that is also being considered in other countries. For example, France has an algorithm register for certain sectors, such as education.

The principle of traceability is closely connected to ensuring verifiability and accountability. A traceable algorithm is one that can be held accountable: if a citizen reports an error, the public authority must be able to trace and review the steps taken by the AI and, if necessary, identify where the problem occurred; if a judge suspects discrimination, they must be able to analyse the processed data to check for errors or bias, and if an independent body, such as a data protection authority, conducts an investigation, it must be able to follow the decision-making process in detail. Without traceability, all these forms of oversight would be undermined, as there would be no evidence showing how and why the administration made its decisions. Without adequate traceability infrastructure, the principles of transparency and accountability risk becoming ineffective.

In summary, traceability can be considered a new general principle of algorithmic administrative action, complementing the traditional principles. It places on public authorities a burden of documentation and technological accountability: every algorithm used must leave a trace, and every decision it makes must be recorded or otherwise traceable. It is no coincidence that some recent laws include terminology commonly used in quality management systems, such as auditability, logging, and data governance. This is the adaptation of concepts originally from computer science for a general audience. Organisations that benefit from AI must also adopt these practices and

make them an integral part of their operations. For example, the European Commission, in its ‘Interoperable Europe Act’, promotes data sharing and interoperability to ensure that decisions made across different offices are traceable and coherent. Similarly, the substantial investments made in the US under the Trump administration to create a single, interoperable government database connecting agencies reflect the belief that algorithmic activities can be effectively tracked – in a traditionally fragmented administration – only by integrating information and providing shared access.

Traceability also has an internal aspect: it acts as a catalyst for organisational learning. Tracking decisions also makes it possible to analyse them and improve the service. If, for example, an algorithm consistently rejects a certain type of application, the public authorities – having access to the logs – can identify this recurring pattern and investigate it, potentially uncovering bias in the data. Traceability therefore enables not only retrospective control but also continuous process improvement. In this context, it becomes an essential aspect of effective technological management: a clear responsibility to preserve records and analyses of automated decisions. This ensures both the rights of individuals (who can request an explanation of decisions affecting them) and the broader interest in efficient and accurate administration (which may require system adjustments if critical issues emerge).

3.2. Human supervision

The second new key principle is human supervision of automated processes. In substantive terms, this means ensuring that there is intervention or, at the very least, significant human oversight of the decisions made by AI, in order to prevent errors, arbitrariness or violations of rights that could occur if a machine were acting alone. Human oversight is a truly new procedural requirement that has emerged only with the advent of automation and is now provided for in all the legal systems analysed, albeit with very different methods and degrees of rigour.

The comparative analysis identifies three models of supervision: (a) *ex-ante* supervision, where humans design, approve, and test the algorithm before its final implementation; (b) *in-itinere* supervision, where humans monitor and can intervene during its execution; and (c) *ex-post* supervision, where humans review the algorithm’s output before issuing the final decision. These three modes can also be combined.

The range of regulatory solutions extends from an almost total ban on decisions without human intervention to the acceptance of extensive

automation, provided that *ex-post* control remains in place. At one extreme is Germany, where procedural law (Art. 35a VwVfG) strictly limits full automation: fully algorithmic decisions are permitted only when there is no room for discretion or assessment, and only if the measure is ‘simple’ and technically feasible³⁸.

As a further safeguard, Germany requires authorities to consider any non-digitisable elements provided by the parties concerned: in practice, if a party submits comments or documents that the algorithm cannot evaluate, public bodies are obliged to take them into account separately, effectively introducing a human element into the process. These provisions reflect a cautious approach: the algorithm is allowed to act independently only in very strict and limited cases; whenever there is any room for judgement, a human decision-maker must be involved. In Austria and Spain, the issue of full automation remains a topic of doctrinal and jurisprudential debate, with conflicting and unresolved positions. In general, even in Spain – where there is no explicit prohibition – authoritative opinions hold that an automated measure without full human supervision may be arbitrary and unconstitutional if it prevents the consideration of factors that a human would have evaluated³⁹. The Spanish definition of “automated administrative act” in the law 40/2015, which describes it as lacking human intervention, has led some legal scholars to believe it should apply only to purely applicative (binding) acts, whereas elsewhere an official is necessary.

Estonia proposes a very interesting compromise model: it encourages advanced and widespread automation, but at the same time clearly states that the authority remains responsible for the parameters fed into the system and that human intervention becomes mandatory whenever the algorithm is unable to safeguard substantial values such as privacy, security or the material correctness of the decision. In practice, Estonia accepts the idea of highly automated procedures (partly because its digital infrastructure allows it), but puts in place a sort of emergency brake: if the machine is thought to be ‘derailing’ from the fundamental principles, a human being must take back control⁴⁰. It is a functional

³⁸ See above the chapter on Austria in Part II, as well as C. Fraenkel-Haeberle, *Fully Digitalised Administrative Procedures in the German Legal System*, 1 European Review of Digital Administration & Law 105 (2020), and E. Buoso, *Fully Automated Administrative Acts in the German Legal System*, *ibid.*, pp. 113 ff.

³⁹ J. Ponce Solé, *Inteligencia artificial, Derecho administrativo y reserva de humanidad: algoritmos y procedimiento administrativo debido tecnológico*, 50 *Revista General de Derecho Administrativo*, 2019.

⁴⁰ See the chapter on Estonia in Part II.

approach, but one that requires a high degree of awareness and monitoring during the process.

The Italian legislator has incorporated the principle of human supervision both at the soft law level and in binding regulations. Even before Law 132/2025, Italian guidelines emphasised the need for *ex-post* controls and periodic updates of the algorithm, especially when used in technically discretionary fields⁴¹.

Today, the law explicitly requires that AI play only an instrumental and supportive role in decision making, respecting the autonomy and authority of the individual, who remains solely responsible for the measures and procedures involving artificial intelligence. This means that every algorithmic output should be reviewed by a human: the official must be able to examine it before it is finalised and must have the freedom to override it. Indeed, it can be said that public decision-makers have a duty not to passively accept computerised outcomes but to verify that the results are consistent with the legal system and the specific circumstances of each case, especially when used in discretionary contexts. This insistence reflects a concern about avoiding automation bias: the tendency of human decision-makers to blindly trust a machine's response⁴².

In the United Kingdom, the perspective is slightly different, but the outcomes are similar. There is no legal obligation for human involvement in every automated decision; however, under common law principles, if an automated process affects significant rights or interests, there must still be sufficient human oversight to ensure fairness and reasonableness⁴³. In practice, the common law requires authorities not to blindly rely on machines: maintaining human oversight is considered an integral part of the duty to act reasonably. This does not mean that an employee must check every single mass act (there may be thousands of serial acts), but public bodies must set up mechanisms for quality control, sampling, or at least allowing a human appeal for those who contest the decision. Similarly, in the Netherlands, there is no rule prescribing the 'human in the loop', but case law and general principles imply that the

⁴¹ On this subject, see A. Cassatella, *La discrezionalità amministrativa nell'età digitale*, in Aa. Vv., *Scritti per Franco Gaetano Scoca*, Vol. I (2021); L. Parona, *Poteri tecnico-discrezionali e machine learning: verso nuovi paradigmi dell'azione amministrativa*, in A. Pajno, F. Donati, A. Perrucci (eds), *Intelligenza artificiale e amministrazione*, Vol. II (2022).

⁴² On automation bias, see K. Brennan-Marquez, K. Levy, D. Susser, *Strange Loops: Apparent versus Actual Human Involvement in Automated Decision Making*, in 34 *Berkeley Technology Law Journal* 745 (2019); and, in broader terms, A. Rubel, C. Castro, A. Pham, *Algorithms and Autonomy* (2021).

⁴³ See the chapter on the United Kingdom in Part II.

authority must be able to reconstruct and justify the logical path of an automated decision⁴⁴. This necessarily presupposes substantial human control over the system's functioning; otherwise, the authority would not be able to fulfil its burden of justification. In other words, in the Netherlands, an algorithm may decide, but officials must understand and be able to explain it: a condition that implies a continuous active role for the public operator.

One of the most interesting points of comparison comes, once again, from the United States, thanks to a comparison between the 2024 and 2025 agendas⁴⁵. The Biden approach emphasised human oversight as a guarantee of due process: the 'Blueprint for an AI Bill of Rights' recommended that high-impact automated decisions should always include the possibility of human intervention and final human review. The NIST (National Institute of Standards and Technology) also insisted on human oversight criteria, integrating them into the 'AI Risk Management Framework' adopted for federal agencies. This approach was radically scaled back by the Trump administration, which, with a view to accelerating the use of AI in government, reduced the stages of human oversight in the name of efficiency. The underlying idea, consistent with the deregulatory approach, is that excessive human oversight slows innovation. It is a divergence of philosophy: whereas Biden saw the need to preserve human involvement to protect rights, Trump sees supervision as potentially unnecessary bureaucratic ballast. This comparative internal experiment between two regulatory frameworks that quickly succeeded each other within the same legal system demonstrates that human supervision remains a principle in the process of definition and is subject to different political and institutional sensibilities.

China is a unique case. The Henan 'red code' case mentioned above, in which the public authority 'forced' the algorithm to change the codes of individuals intending to demonstrate (from green to red to restrict their movement), illustrates that when public power lacks democratic foundations, human oversight – rather than serving as a protective measure – can actually produce harmful consequences for those affected.

In conclusion, human oversight is now widely recognised as an essential element of fair automated processing – a shared 'procedural minimum', even if the methods vary. This plurality of solutions reflects

⁴⁴ See the chapter on the Netherlands in Part II.

⁴⁵ See the chapter on the United States in Part II and the comparative chapter by L. Baldinelli in this volume.

different cultural approaches to technology: those who see it as potentially dangerous tend to impose more constraints and greater human presence; those who see it as an opportunity to be seized focus on more *ex-post* or systemic controls. In any case, the human filter remains the ultimate guarantor: the idea that a public decision can be totally removed from the critical judgement of a person appears, at present, to be rejected in all democratic and rule of law systems. Future developments could lead to this principle being formalised even further, or differentiated by category of action. It remains to be analysed how human control can not only guarantee the avoidance of errors or *bias*, but also be pushed to seek alternatives that the algorithm has not proposed. Correcting an error, or a so-called AI hallucination, is not easy. However, it is even more difficult to think of an *out-of-the-box* solution – imagining, with human discretion, an alternative, perhaps better, solution that the algorithm has not considered. In any case, the combination of algorithms and human beings will be the hallmark of future administrative proceedings.

4. Anticipation of discretion

A cross-cutting but crucial effect of AI use in administrative procedures concerns the transformation of administrative discretion. Classical administrative law doctrine made a clear distinction between binding acts – in which the authority mechanically applies the law with no margin for assessment – and discretionary acts, in which the authority is granted a margin of appreciation and choice based on the public interest. This traditional *summa divisio* is being challenged by the advent of algorithms, to the point that it may be necessary to redefine the decision-making categories (as we will see in more detail in the concluding section). In particular, the use of automated systems tends to anticipate the exercise of discretion: decisions that in the past were taken by officials on a case-by-case basis can be implicitly anticipated upstream during the algorithm's design or configuration phase.

The complete automation of a procedure involving discretionary powers forces qualitative assessments to be translated into quantitative parameters or fixed rules: this leads to a sort of '*ex ante* crystallisation' of discretion. Making decisions with AI often means determining in advance how the machine will decide in future situations. For example, if an algorithm has to assign priorities on healthcare waiting lists (a discretionary task because it balances different factors), an authority will have to provide the system with a set of criteria and weights – patient

age, severity of the condition, other elements – establishing once and for all the relative importance of each factor. In this way, the moment at which discretion comes into play shifts: it no longer comes at the end of the individual procedure (when the officer evaluates the specific case), but at the beginning, when the algorithm is configured. This is where the anticipation comes in: the administrative policy choice is made upstream and integrated into the code. In some respects, this evokes – albeit with significant differences – the earlier doctrine and case law concerning the predetermination of criteria.

Several legal systems have recognised this phenomenon and adopted partially differing approaches. One possible strategy, as we have observed, is to restrict automation solely to binding cases, avoiding the problem entirely. Germany provides a prime example of this: Article 35a of the *VwVfG* permits fully automated acts only when an authority ‘has no discretionary power’. Likewise, certain Spanish regions have implemented comparable bans; for instance, in 2021, the Autonomous Community of Aragon prohibited automated administrative acts whenever subjective decision-making criteria, that is, discretionary assessments, need to be applied. These rules adhere to the same principle: whenever discretion – whether political or technical – is required, a human must intervene; an algorithm can only handle standardised situations for which a predetermined rule exists for every possible scenario. This is clearly a wise decision to avoid delegating ‘value judgements’ to entities lacking human discernment. However, this limitation also restricts innovation: numerous potential AI applications (e.g., in social policy, resource allocation, and similar areas) would be excluded because they inherently require discretionary assessment.

Some legal systems are more open to automation, even when discretion is involved, while still aiming to preserve compensation mechanisms. Italy provides a clear example in this regard, as demonstrated by the Council of State ruling no. 2270/2019 (*AlphaFold*, concerning the algorithm for allocating teachers in schools) which stated that the use of algorithmic functions is not inherently prohibited, even in proceedings that make room for (including technical) discretion, provided certain requirements of transparency, participation, and non-discrimination are met⁴⁶.

In other words, an Italian public body may delegate discretionary calculation to an algorithm, but must do so in a way that makes the criteria clear, that the person concerned can challenge them if necessary,

⁴⁶ See the chapter on Italy in Part II.

and that the possibility of corrective human intervention remains. This approach was then consolidated by legislation: Article 14(2) of Law No 132/2025 establishes that AI may be used only as a *tool* for the final decision, in accordance with human decision-making autonomy. This implies that even in discretionary areas, the algorithm can provide support or a decision proposal, but the final balance is up to the official. In fact, in Italy, discretion is anticipated (because criteria are set in software), but formally, the figure of the official who ratifies or modifies the outcome based on the circumstances of the specific case remains unchanged. This gives rise to a hybrid model: ‘dual’ discretion, part of which is exercised *ex ante* when the algorithm is being designed (the choice of parameters, weightings, thresholds), and part of which is exercised *ex post* in the final control over the individual result.

In common law countries, the issue arises in different terms because administrative discretion is less regulated by law. In the United Kingdom, there is a concept of negative authorisation: public authorities may use algorithmic technologies when exercising their powers, unless a specific rule prohibits it or doing so would violate an external obligation (e.g., human rights or data protection). This means that, in principle, nothing prevents the automation of discretionary decisions. However, judicial review is available as a corrective measure: if an authority adopts an excessively rigid algorithmic policy, the courts may view it as a fettering of discretion – that is, an undue restriction resulting from the decision to apply a fixed rule when the law requires the discretionary evaluation of individual cases⁴⁷.

In other words, excessive discretion in drafting AI code could be unlawful because a public body cannot limit its own authority beyond certain boundaries. This principle, rooted in long-standing case law on the authority to establish binding guidelines, takes on new significance in the digital age: delegating all decisions to an algorithm could be seen as creating a rigid rule that runs counter to the legislator’s intent to require discretionary, case-by-case evaluation. Therefore, even without *ad-hoc* provisions, the English legal system maintains an implicit brake on total automation: the duty not to reduce a discretionary assessment to a schematic calculation, which would be censured as unreasonable.

In countries such as the Netherlands, a sectoral approach has been adopted: the use of algorithms is regulated in various areas (health, social security, urban planning, etc.), avoiding general regulation precisely

⁴⁷ See the chapter on the United Kingdom in Part II.

because it is believed that the decision to automate or not comes under the autonomy of public authorities unless otherwise specified by law⁴⁸.

This also means that, in the absence of prohibitions, agencies can decide independently whether and how to use automation. The result is important differentiation: some sectors are highly automated, such as taxation, while others are hardly automated at all. It is interesting to note that the lack of general guidelines has nevertheless prompted public authorities to develop guidelines and best practices for the use of algorithms, such as the 'Guidelines for the Application of Algorithms by Public Authorities', which suggest classifying systems by type and risk and taking appropriate precautions. This reflects the need, even without regulatory constraints, to properly manage the integration of AI into discretionary processes.

A further aspect of the problem concerns technical discretion. Many AI applications are used in technical contexts (e.g., environmental assessments, tax audits, score calculations), where human decision-makers were traditionally granted a margin of technical judgment that could not be questioned except in cases of obvious unreasonableness or unreliability. However, by entrusting these assessments to algorithms, there is a risk of creating a grey area: technical judgement becomes embedded in the software, making it more difficult to scrutinise. Some legal systems address this issue by stipulating that algorithmic decisions, even if technical, are subject to the same controls as human technical decisions. For example, if an algorithm assigns risk scores, its operation must be reviewable using the same criteria that an administrative court would apply when reviewing a discretionary technical judgement – namely by checking for logic, consistency, and the absence of arbitrariness. Traceability and technical justification are essential here: only by demonstrating how the model has weighted the various factors can we determine whether technical discretion has been applied appropriately, or whether the algorithm has, for example, emphasised one element while unjustifiably neglecting another.

Anticipating discretion means that value and opportunity choices are made, at least in part, in advance – for example, by deciding what weights to assign to the various factors in an evaluation algorithm. A striking example is the planning of bus routes⁴⁹. If a municipality asks a private company to develop an algorithm to optimise routes, it must anticipate certain discretionary decisions, such as which objective to

⁴⁸ See the chapter on the Netherlands in Part II.

⁴⁹ See Part III above, Case 4.

prioritise (reducing average travel times, minimising costs, maximising coverage of the area, or balancing the interests of users and residents). Each objective involves different trade-offs: for example, moving a bus stop 900 metres might improve the overall network but worsen service for some citizens. Perhaps the authority should have provided the supplier with several scenarios – alternative plans reflecting different weightings assigned to the factors – and then selected one at its discretion. If, on the other hand, it delegates a single scenario to the algorithm, it implicitly accepts a certain balance determined by the program. Essentially, discretion was exercised – perhaps even unconsciously – by the technician rather than by the political decision-maker. This is clearly problematic from a theoretical perspective because it disrupts the chain of democratic legitimacy.

In conclusion, automation redraws the boundaries of discretion: government bodies' power of choice tends to be allocated differently over time (more upstream, at the planning stage) and between individuals (between the civil servant and the IT expert who develops the algorithm). This causes significant systemic tensions. On the one hand, there is a risk of 'hidden' discretion: political decisions could be incorporated into the code, shielded from public debate or democratic oversight. On the other hand, there is the opposite risk of excessive rigidity: once set up, an algorithm applies the rules uniformly, without room for fairness in specific cases, potentially sacrificing the fine-tuning that human discretion can sometimes provide.

The comparative models offer varied responses: some prefer to prevent risks by prohibiting the automation of value judgements; others experiment with hybrid solutions, keeping human oversight at the output stage; others leave everything to *ex-post* controls and the political responsibility of administrative bodies for how they have pre-programmed their decisions. In any case, there seems to be both a theoretical and a practical need to move beyond the traditional dichotomy of constrained versus discretionary, towards a more subtle understanding: how, when, and at what stage discretion is applied. The algorithm prompts us to ask these questions, and the comparison reveals different yet converging approaches toward the ultimate goal: ensuring that the introduction of AI does not create new arbitrariness. Instead, if well governed, AI can lead to more consistent and predictable decisions while maintaining the fairness and flexibility that characterise the proper exercise of discretionary power.

It can therefore be said that the use of AI is leading to a divergence in models of administrative discretion. On the one hand, the traditional

model remains, where authorities weigh options and make decisions on a case-by-case basis – often assisted by AI as an analytical tool, but still retaining final authority. On the other hand, a new model is emerging in which discretion is standardised through algorithms that use weightings, thresholds, and fixed decision-making rules, resulting in largely mechanical execution. The latter model can ensure greater uniformity and may reduce some disparities, but it comes at the cost of reduced adaptability to specific cases and fewer opportunities for individual fairness. This risk might be mitigated by using prompts that ask AI not for the single best solution, but for multiple scenarios with varying weightings, allowing enough room for human judgement when choosing among the alternatives proposed by AI.

5. Contestability

In traditional administrative law, the principle of due process culminates in allowing recipients of the measures to challenge decisions they consider illegitimate by pursuing administrative or judicial remedies⁵⁰.

In a democratic system, no decision by the authorities is final or beyond question; there are always mechanisms for appeal, complaint, review, or challenge before a judge. The advent of algorithmic decision making raises the issue of ensuring that these decisions are fully contestable – that is, subject to verification and possible revision through established channels of protection.

In abstract terms, all the legal systems considered ensure that automated measures are not exempt from the usual means of appeal. The national case studies do not indicate any legal system that exempts decisions made by machines from judicial review. Such decisions are considered administrative acts in all respects and can be appealed or challenged like any others. For example, in the United States, a decision made using an algorithm can be challenged in court just like a human decision: the judge applies the standards set by the Administrative Procedure Act, and may overturn the decision if it is deemed arbitrary, capricious, or unlawful⁵¹.

Similarly, in the United Kingdom, a person affected by an algorithmic decision may seek judicial review, arguing, for example, that

⁵⁰ For more on this topic, see G. della Cananea, *Due Process of Law Beyond the State*, Oxford University Press, Oxford, 2016, and G. della Cananea, M. Conticelli (eds), *Rule of Law and Administrative Due Process in Europe. Trends and Challenges* (2020).

⁵¹ See the chapter on the United States in Part II.

the decision is unreasonable (under the Wednesbury unreasonableness standard) or violates principles of fairness by denying the right to a fair hearing⁵².

In Spain and Italy, the usual administrative and judicial remedies apply, such as hierarchical appeals and applications for judicial review before the Regional Administrative Court. There is nothing to prevent the court from also examining specific procedural flaws related to the automated nature of the procedure in question (e.g., lack of clear reasoning, violation of the obligation of technological transparency, etc.)⁵³. In Estonia individuals can always appeal to the administrative court if they believe a digital decision has violated their rights or breached the law. The courts have consistently ruled that ultimate responsibility lies with the competent authority⁵⁴.

However, the effective contestability of algorithmic decisions poses new challenges: it is one thing to say that the act is contestable, but it is quite another to ensure that citizens have the knowledge and procedural tools to challenge it successfully. The risk is that highly technical and opaque decisions may in fact be unchallengeable because the person concerned does not know how to justify their appeal or does not have the information to prove that an error has taken place. This is where contestability is closely linked to transparency, reasoning, and supervision, like pieces of a single mosaic. The knowability of how the algorithm works and the comprehensibility of the decision, as mentioned above, are prerequisites for an individual to be able to present a challenge. Legal systems are aware of this and provide specific guarantees regarding appeals.

For example, in Austria, the recipient must be able to intervene in the automated process before its conclusion and, if a problem arises, suspend the procedure and request a human assessment instead of a computerised one⁵⁵.

This is a form of anticipatory protection: when confronted with an unfavourable algorithmic decision, the individual can request that the process be halted and a human take over. This prevents the only remedy from being *ex post* in court by providing a way to challenge the decision in advance at the administrative level, even before the measure is

⁵² See the chapter on the United Kingdom in Part II; for more details on *judicial review*, see H. Woolf *et al.*, *De Smith's Judicial Review* (2020); G. Anthony, *Judicial Review in Northern Ireland* (2024).

⁵³ See, respectively, the chapter on Spain and the chapter on Italy in Part II.

⁵⁴ See the chapter on Estonia in Part II.

⁵⁵ See the chapter on Austria in Part II.

adopted. Similarly, the Netherlands is contemplating the possibility of challenging the output through appeals and reviews, citing, for example, a lack of transparency regarding the criteria and parameters used by the algorithm⁵⁶.

In Spain, although there is no specific litigation concerning automated decisions, legal doctrine emphasises that administrative judicial remedies (*recurso contencioso-administrativo*) continue to apply. The Charter of Digital Rights emphasises that automated procedures must still adhere to common procedural guarantees, which implies an obligation to ensure that those affected have the opportunity to influence the outcome, even when the processing is automatic.

In France, Article L. 311-3-1 of the CRPA imposes strict information requirements on public authorities that adopt automated decisions⁵⁷. First, they must explicitly indicate that their decision is based on algorithmic processing. This indication must include a statement explaining the purpose of the algorithmic processing, the right to obtain communication of the rules governing such processing, and the main characteristics of its implementation. Secondly, the authority must be able to communicate the main characteristics of the algorithmic processing upon request by the data subject (therefore, this information need not be provided at the outset, but only upon request by the data subject). In this case, the authority must be able to provide the following information in an intelligible form: (a) how and to what extent the algorithmic processing contributes to the decision-making process; (b) the data processed and their origin, the parameters of the processing and, where applicable, their weighting, applied to the data subject's situation; and (c) the operations carried out during processing. An administrative decision based on algorithmic processing that does not contain the explicit information required by Article L. 311-3-1 of the CRPA will be considered null and void in court.

In the US legal system, the framework outlined during the Biden presidency encouraged agencies to provide mechanisms for direct challenge of algorithmic decisions, even outside the courts, such as through internal complaint systems or human review desks⁵⁸. The 'AI Bill of Rights Blueprint' suggested that every individual subject to a high-risk automated decision should have access to a human review upon request. The scenario that seems to characterise Trump's second presidency, reducing individual participatory obligations and

⁵⁶ See the chapter on the Netherlands in Part II.

⁵⁷ See the chapter on France in Part II.

⁵⁸ See the chapter on the United States in Part II.

concentrating supervision at the OMB level, has in fact reduced the scope for immediate challenge⁵⁹.

In this sense, the reduction in individual transparency has a negative impact on contestability, as the person concerned may become aware of important information too late, losing the opportunity to defend themselves. Of course, the relief of judicial review remains available. In the US, as mentioned, the APA provides general grounds for annulling ('arbitrary and capricious') unreasonable decisions, even if the person affected is not aware of all the technical details.

At the European Union level, the possibility of challenging algorithmic decisions made by the EU institutions themselves will be a significant issue in the future. Although the AI Act is centred on providers and users, it does not directly address procedural law. However, it does implicitly acknowledge the need for contestability by establishing, for example, that people must be informed when interacting with AI systems and that human intervention must always be possible for high-risk systems. Although primarily intended for the private sector, this principle, when applied to the public sector, means that if an automated decision affects a right, it must be possible to object and receive human intervention (a principle already established in Article 22 of the GDPR). The same principle also applies in China, where the aforementioned PIPL allows a fully automated decision to be rejected.

Regarding contestability, one key point should be emphasised: it is not limited to the automated decision itself but also applies to the algorithm that made the decision or on which the decision was based. In some ways, this reconstruction resembles the traditional approach of challenging the general act underlying an individual administrative measure, along with the measure itself⁶⁰.

A critical issue that arises in nearly every legal system is the courts' ability to handle highly technical disputes. Comparison suggests that courts are preparing themselves by either appointing technical assistants (such as IT experts) to analyse code or, as in Estonia, possessing a high level of technical expertise themselves due to their familiarity with e-government. Ultimately, the contestability of algorithmic decisions is also putting the judicial system to the test, pushing it to evolve. Interdisciplinary skills are needed, and perhaps specialised sections

⁵⁹ *Ibid.*

⁶⁰ For a comparative analysis of general administrative acts, including from the perspective of judicial protection, see G. della Cananea, A. Ferrari Zumbini (eds), *Administrative Rulemaking and Planning in European Laws* (2025).

focusing on Algorithmic Accountability should be established⁶¹. Looking ahead, a specific independent authority or Ombudsman for automated decisions could emerge, acting as an intermediary between citizens and the authorities before cases reach court, facilitating mutual understanding and the resolution of errors.

In conclusion, the right to bring a challenge remains a cornerstone even in digital administration: algorithmic decisions are not beyond challenge. However, for this right to be effective, other safeguards, such as transparency, the duty to provide reasons, and supervision, must be in place. Only an informed and aware citizen can effectively exercise their right to challenge, and only a judge who understands how the algorithm works can rule on the appeal with full knowledge of the facts. The convergence among legal systems demonstrates progress in this area: providing clear explanations and detailed records serves exactly this purpose – to enable subsequent review. The differences, on the other hand, reflect how various political and administrative models affect the situation: in cases where public authorities tend to be closed, as in Henan, China, challenges are often ineffective, whereas in democratic systems, AI is regarded as just another tool subject to the usual principles of accountability and, therefore, contestability.

It can safely be said that a ‘right to algorithmic appeal’ is emerging, allowing any interested party to challenge not only the decision itself but also the algorithm that produced it. The effectiveness of such an appeal depends on several factors: (i) a citizen’s awareness that they have received an algorithmic decision; (ii) the ability to obtain the necessary information to challenge both the decision and the algorithm (such as access to the code, data, etc., as noted above); (iii) the competence and technical resources available to judges handling such cases (including technical training and the use of expert consultants); (iv) the adaptation of procedural rules to accommodate technical evidence and protect trade secrets; and (v) the availability of appropriate remedies.

6. From a *summa divisio* to a *divisio in partes tres*

In conclusion, considering all the issues discussed, a fundamental rethinking can be proposed: the traditional division in administrative law between *binding* and *discretionary* actions no longer adequately reflects the reality of proceedings in the algorithmic era. As mentioned,

⁶¹ See A. Garapon, J. Lassègue, *Justice Digitale* (2018).

the advent of AI requires the introduction of an additional classification related to the degree of automation in the decision-making process. This outlines a possible tripartition: (i) entirely human activity, (ii) entirely automated activity, and (iii) hybrid human-machine activity. This tripartite classification does not completely replace the previous one (binding *vs.* discretionary) but overlaps with it, creating a more complex grid in which to place contemporary administrative procedures.

Traditionally, a non-discretionary (or bound) act was by definition suitable for standardisation and potential automation, while a discretionary act required human judgement. Today, we observe fully automated non-discretionary activities – for example, issuing speeding fines through speed cameras where there is no room for discretion and the machine handles the entire penalty process – and hybrid activities, in which an algorithm makes a proposal but a human makes the final decision, even in cases involving discretionary elements (such as granting social benefits based on an AI-generated score followed by a human decision). At the same time, some non-discretionary procedures remain entirely manual, possibly due to political decisions against automation, insufficient technical resources, or a lack of staff training. The basic initial dichotomy can no longer explain this variety.

Legal systems are beginning to codify these differences, albeit implicitly. Germany, for example, distinguishes between fully automated acts (*vollständig automatisierte*) and partially automated acts (*mit Hilfe automatischer Einrichtungen*). The German Administrative Procedure Act therefore recognises two separate categories, alongside traditional acts. Italy, with Law No 132/2025, effectively excludes the possibility of fully automated acts in public authorities (establishing that AI can only be used as a support tool and that the decision-maker must always be human), but it remains to be seen how this will be implemented in practice. Spain, as we have seen, legally defines the automated act and implicitly contrasts it with the ‘non-automated’ act. These examples indicate that legislators are seeking new taxonomies: the dimension of ‘who makes the decision’ (human, machine, or both) is complemented by the dimension of ‘how the decision is regulated’ (binding or discretionary).

A division into three parts is therefore envisaged: entirely human decisions, entirely algorithmic decisions, and hybrid decisions. Within each of these categories, we will continue to have both non-discretionary and discretionary acts, but with different nuances.

This tripartite division requires a re-examination of the general principles applicable to each category. Human activity continues to be

governed by the traditional principles as they currently stand, about which there is little new to add – except that, in the present context, the deliberate administrative decision not to automate is sometimes motivated by prudence or ethical considerations, as seen in sensitive sectors. Fully automated activity, on the other hand, appears to be an exceptional and limited case: as highlighted, legal systems tend to allow it only for simple and non-discretionary cases, or not to allow it at all.

However, when such automation does exist – for example, in some advanced e-governments, such as Estonia’s automatic granting of minor tax benefits – it calls for a radical rethinking of safeguards. If no human intervenes before the final decision, *ex-ante* safeguards (such as transparent code, rigorous pre-use testing, and strict limits on application) and *ex-post* safeguards (including easy contestation procedures and regular automatic reviews of outcomes) must be maximised. In other words, pure ‘robotic’ action requires a robot-proof procedure: special rules to ensure that the machine decides as a public authority that respects principles. It is no coincidence that the AI Act stipulates requirements such as data governance, risk management, decision recording, transparency towards users and the possibility of human intervention as conditions for the use of high-risk AI systems in public authorities.

A procedural microsystem for autonomous decision-making is currently under development. Here, traditional principles are partly preserved and adapted: for example, transparency must cover both the algorithmic and human components – clarifying which parts of the process are automated and which are not, and who is responsible for each step – resulting in meaningful algorithmic transparency. The reasoning must account for both the calculation results and the official’s additional assessments, making the decision clear and understandable. Participation can occur both before the algorithmic processing (by providing data or preferences to the algorithm) and afterwards (by interacting with the official). Furthermore, human-machine interaction must be designed in such a way that the final result is consistent and clearly attributable. For example, if an algorithm assigns a score and the operator chooses to deviate from it, the explanation must clarify why – perhaps by highlighting factors the algorithm did not consider. Conversely, if the operator agrees with the outcome, they can simply cite the algorithmic criteria in their reasoning. As highlighted in the previous paragraphs, traditional principles need to be adapted and new ones developed for hybrid decisions.

As mentioned earlier, traditional principles need to be adapted and new ones developed to guide hybrid decision making. In a hybrid decision, AI could handle the technical aspects, and humans the value-based aspects. Complex decisions could therefore be broken down into automatable and non-automatable parts. This reflects the tripartite division: some decisions involve both an algorithmic and a human module.

This transformation calls for a revision of the categories of general administrative law. Traditionally, each measure was the product of a unified administrative will; now, a measure can be the joint product of an algorithm (expressing a pre-programmed 'will') and an official (who expresses the final will). Perhaps new legal instruments are emerging on the horizon, such as the algorithmic administrative act, with its own legal framework, or a dual-track procedure combining digital and analogue methods. For example, it is a matter of debate whether an algorithm that automatically rejects an application should be considered a final decision (immediately appealable) or a merely intra-procedural act subsequently adopted in the final (human) measure. The legal classification of algorithmic operations within the procedure remains uncertain. The tripartite division has important implications for how we understand acts, procedures, investigations, and decisions. Identifying a third, hybrid category requires specific rules governing the interaction between humans and algorithms within the process.

The proposal to shift from a bipartite *summa divisio* to a tripartite division provides a framework for understanding this process by formally identifying three modes of exercising administrative functions: human, hybrid, and automatic, each of which warrants careful consideration and properly tailored safeguards. The correct algorithmic process is not a single, uniform entity; instead, it varies depending on the amount of space the machine occupies relative to humans – on the one hand, superficially equating algorithmic actions with traditional ones, and, on the other, treating AI as something entirely foreign and unrelated to administrative law. In practice, AI can be effectively regulated through administrative law, provided that the law recognises its unique characteristics.

In the future, this could also be reflected in administrative organisation (with algorithmic departments, offices for procedural innovation, etc.) and in the training of officials, who will need to be

trained to operate effectively alongside machines as supervisors or co-decision-makers⁶².

Comparative analysis has shown significant convergence toward strengthening procedural guarantees in administrative automation – so much so that we can outline a minimum common denominator of principles of fair algorithmic procedure (substantial transparency, effective participation, comprehensible reasoning, traceability, human supervision, contestability). At the same time, significant differences persist on certain issues, reflecting deep tensions between technological efficiency and the protection of rights, as well as between different administrative cultures. With its precautionary and ethical approach, Europe tends to prioritise guarantees even if it means slowing down innovation. The United States, on the other hand, demonstrates how a change in administration can shift the balance between innovation and regulation in just a few months. Lastly, China highlights a fundamental limitation: without the rule of law, any AI regulation becomes ineffective if those in power choose to use it for oppressive purposes.

As such, algorithms compel us to reconsider who makes decisions, how they make them, and under whose control. The current and future challenge is to ensure that AI serves as a tool for good governance, grounded in the principles of legality, impartiality, and transparency, rather than becoming a means of arbitrary decisions disguised by technical neutrality. With this in mind, legal systems are developing innovative responses, ranging from AI impact assessments in the public sphere – which some legal systems already use to evaluate *potential* effects on fundamental rights beforehand – to the establishment of ethics committees within agencies and international cooperation to share best practices (see the recent Council of Europe Convention on AI and Human Rights)⁶³.

We are probably only at the beginning of this journey, in which it will be necessary to adapt the traditional principles of due process to algorithmic administration and complement them with new principles specific to administrative automation. The comparison made here suggests that, despite the differences, a common core of shared principles

⁶² In this regard, see: P. Mikalef et al., *Enabling AI capabilities in government agencies: A study of determinants for European municipalities*, 4 *Government Information Quarterly* (2022), and B.W. Wirtz, J.C. Weyerer, C. Geyer, *Artificial Intelligence in the public sector – Applications and challenges*, 7 *International Journal of Public Administration* 596 (2019).

⁶³ See A. Ferrari Zumbini, P. Monaco, S. Venier (eds), *The Council of Europe Framework Convention on AI: Comparative, EU, International, and Sectoral Perspectives*, in *Italian Journal of Public Law*, special issue no. 4/2025.

is emerging. The challenge will be to translate these into effective regulations and, most importantly, to ensure they are applied in the daily operations of authorities through a culture of technological legality that has only recently begun to emerge. In this respect, the evolution is far from complete: new issues continue to arise, and administrative law will need to keep evolving by refining its conceptual categories and practical tools.

In conclusion, new problems have arisen with automated administrative decisions, and new solutions are taking shape – some already implemented, others being tested, and still others only outlined theoretically. However, one cornerstone remains unchanged: the use of AI by public authorities must not obscure or undermine the classic guarantees of due process; if anything, it must relaunch them on new ground. The principles of transparency, participation, motivation, legality, good administration and judicial protection remain intact in essence, but must be adapted to the digital context. Doing so successfully will mean fully realising the opportunities offered by automation without sacrificing the founding values of the rule of law. It is a delicate but necessary balance, on which the various legal systems – as the research presented here shows – are converging towards a sort of common core of procedural guarantees for automated decisions, albeit with different emphases. It will be the task of scholars and legislators in the coming years to consolidate this shared procedural core and adapt it to emerging technologies so that administrative innovation goes hand in hand with the evolution of safeguards. As is often the case, administrative law will be called upon to be a laboratory for creative solutions, while maintaining its core mission of ensuring that public authorities, even when speaking the binary language of machines, always act in accordance with the law and due process.

7. Conclusions

The comparative analysis of automated administrative decisions confirms that, even confronted by radically new challenges such as those arising from the use of artificial intelligence in administrative proceedings, a consistent dynamic has already been identified in the research conducted as part of the Common Core of European Administrative Laws (CoCEAL) project⁶⁴: convergences and divergences

⁶⁴ For a more detailed overview of the CoCEAL research, and how the AutAD research conducted here fits into it, see the introductory chapter to this volume, esp. § 3 and *supra* note 9.

are not mutually exclusive – they coexist. Faced with decision-making automation, legal systems react in different ways, reflecting different legal traditions, institutional structures and political sensibilities; however, from beneath these divergences, a shared core of procedural requirements continues to emerge as a common point of reference. Even when a decision is mediated – or partially made – by an algorithm, legal systems bring administrative actions back within familiar parameters: the need to make the decision intelligible, to ensure its clarity, justification, and ability to be challenged, to guarantee its traceability, and to maintain some degree of human oversight.

The solutions adopted are varied and sometimes vastly different, but comparison reveals that they address recurring and structurally similar issues. In this sense, algorithmic administration does not represent a break from traditional comparative administrative law; rather, it is a new variation within the field – one in which administrative law continues to demonstrate its dual nature: both common and diverse, capable of adapting to profound technological changes while upholding its fundamental principles.