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Artificial Intelligence and Virtual Reality as Tools for Inclusion: Legal Profiles and Regulatory Perspectives

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Abstract

Artificial Intelligence (AI) and Virtual Reality (VR) are transformative technologies that can advance the principle of substantive equality enshrined in Article 3(2) of the Italian Constitution. When responsibly integrated into educational, cultural, healthcare, and occupational contexts, they can remove structural and communicative barriers limiting the participation of persons with disabilities or specific needs. However, their deployment must comply with national, European, and international legal frameworks to ensure innovation promotes inclusion rather than new forms of discrimination. The United Nations Convention on the Rights of Persons with Disabilities (CRPD) and the European Accessibility Act (Directive 2019/882/EU) provide the legal basis for universal access to digital and emerging technologies. Accordingly, AI and VR systems must follow accessibility-by-design principles and non-discrimination obligations. Projects such as CARESSES—developing culturally adaptive social robots—and various therapeutic or anti-isolation initiatives illustrate their inclusive potential. Nonetheless, immersive systems raise serious concerns regarding the processing of sensitive and biometric data, including facial expressions, gaze tracking, and physiological indicators, all within the "special categories" protected by the GDPR. Article 35 mandates Data Protection Impact Assessments (DPIA) for technologies posing high risks to individual rights and freedoms. Further, liability issues arise in cases of algorithmic discrimination, malfunction, or harm. The proposed AI Act and AI Liability Directive introduce a risk-based framework assigning responsibility to providers and deployers while easing victims' evidentiary burden. This reflects a broader commitment to transparency and fairness, upholding human dignity and equality before the law.

Keywords: Artificial Intelligence, Virtual Reality, Accessibility, GDPR, Human Rights.

Introduction

The Multilevel Legal Framework for Technological Inclusion

The governance of inclusive technologies operates across multiple legal levels: international, european and national[1]. At the international level, the UN Convention on the Rights of Persons with Disabilities (CRPD), ratified in Italy by Law N. 18 of 2009, represents the cornerstone of a human-rights-based approach to technology.

Article 9 of the CRPD[2] explicitly recognizes access to information and communication technologies as a condition for full inclusion and requires States to promote universal design: a proactive principle whereby products, services and environments must be conceived to be usable by all, without the need for subsequent adaptation. In other words, Article 9 asks governments to remove any obstacles that make life harder for people with disabilities. It says that everyone should be able to use buildings, transport, information, and communication systems – in-

cluding digital tools and the internet – just like anyone else. It also requires countries to set clear accessibility standards, train profesionals to understand these issues, and make sure that new technologies are designed to be accessible from the very beginning. Accessibility, in this way, becomes an essential part of making sure everyone can take part fully in society. Within the European Union, this principle materializes through a coherent regulatory ecosystem [1-5]. The European Accessibility Act (Directive 2019/882/EU)—effective from 2025—obliges economic operators to ensure the accessibility of digital goods and services, including e-commerce, self-service terminals and software interfaces[3]. Complementing it, the Directive 2016/2102/EU[4] mandates accessibility for public-sector websites and mobile applications. Both directives have been transposed into Italian law through Legislative Decree N. 106/2018. The General Data Protection Regulation (GDPR) provides a second foundational pillar, ensuring that inclusion does not come at the expense of individual autonomy and privacy: its principles of lawfulness, transparency, data minimization, and purpose limitation apply with particular force to adaptive and biometric technologies[5]. The emerging AI Act (Regulation EU 2024) adds a further layer, adopting a risk-based classification of AI systems and imposing specific obligations for those deployed in education, healthcare, and public services—contexts where algorithmic bias could directly affect access to fundamental rights[6]. Together, these instruments trace the contours of an accessibility by design legal model: inclusion is not a corrective measure but a design imperative. Finally, soft-law initiatives—such as UNESCO's Recommendation on the Ethics of Artificial Intelligence (2021) and the OECD AI Principles—reinforce a global convergence toward responsible innovation, framing inclusion as both a normative requirement and a development goal aligned with the UN's Sustainable Development Agenda. In particular, the UNESCO Recommendation on the Ethics of Artificial Intelligence (2021) places a strong emphasis on inclusion and accessibility, recognizing that AI technologies can either empower or marginalize people with disabilities. It calls for AI systems to be designed with diversity and human dignity at their core, so that technological innovation does not reproduce existing barriers or create new ones. The document reminds policymakers and developers that persons with disabilities often face "algorithmic invisibility," when systems fail to account for their specific needs or treat them as statistical outliers. By promoting accessibility, fairness, and universal design, the Recommendation envisions an AI ecosystem where technology becomes a tool for participation and autonomy, rather than a new source of exclusion. At the same time, OECD AI Principle 1.1, on inclusive growth, sustainable development and well-being, emphasizes that the true value of artificial intelligence lies not merely in its capacity to drive innovation or economic efficiency, but in its potential to enhance human flourishing and social equity[7]. A trustworthy AI, as envisioned by the OECD, should actively contribute to expanding human capabilities and supporting the inclusion of groups that have traditionally been marginalized or underrepresented. This principle urges policymakers, developers and institutions to see AI as a shared resource for humanity—one that can help reduce economic, social and gender inequalities while protecting the natural environment. In essence, it reframes technological progress as a collective endeavor, where the goal is not simply smarter machines, but a fairer, more sustainable world in which technology serves both people and the planet.

Artificial Intelligence as a Tool for Removing Inequality

The inclusive potential of AI is most evident in its ability to adapt to diversity rather than suppress it. Unlike traditional assistive technologies, which simply compensate for deficits, AI systems can dynamically adjust their behavior to individual, cultural or emotional contexts. The CARESSES project (Culture-Aware Robots for Elderly Support), funded by the European Commission under Horizon 2020, exemplifies this paradigm. It developed socially assistive robots capable of recognizing users' cultural identities and adapting speech, gestures and relational cues accordingly[8]. One case involved a Sri Lankan woman living in Genoa, who interacted with a culturally aware robot that helped her learn Italian, provided context-sensitive information, and guided her participation in local community activities. This approach—rooted in diversity awareness—embodies a model of technological inclusion consistent with Articles 8 and 21 of the EU Charter of Fundamental Rights, which protect personal identity and prohibit discrimination[9]. Yet such sophistication entails.

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[2]*Article 9 of the Convention on the Rights of Persons with Disabilities (United Nations, 2006) enshrines the right to accessibility as a precondition for the enjoyment of all other human rights and fundamental freedoms by persons with disabilities. It imposes on States Parties both negative and positive obligations: the former requiring the removal of existing barriers that hinder access to the physical environment, transportation, information, and communication systems; the latter mandating the adoption of proactive measures, such as the development of accessibility standards, training of relevant actors, and the promotion of accessible technologies from the design stage. The provision reflects the principle of universal design, codified in Article 2 of the CRPD, which demands that environments, products, and services be conceived to be usable by all people, without the need for subsequent adaptations. As such, Article 9 operationalizes the broader aims of the Convention— equality, inclusion, and participation—within the legal framework of accessibility. United Nations. (2006). Convention on the Rights of Persons with Disabilities. Treaty Series, 2515, https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf*

ropean Union, this principle materializes through a coherent regulatory ecosystem. The European Accessibility Act (Directive 2019/882/EU)—effective from 2025—obliges economic operators to ensure the accessibility of digital goods and services, including e-commerce, self-service terminals and software interfaces[3]. Complementing it, the Directive 2016/2102/EU4 mandates accessibility for public-sector websites and mobile applications. Both directives have been transposed into Italian law through Legislative Decree N. 106/2018. The General Data Protection Regulation (GDPR) provides a second foundational pillar, ensuring that inclusion does not come at the expense of individual autonomy and privacy: its principles of lawfulness, transparency, data minimization, and purpose limitation apply with particular force to adaptive and biometric technologies5. The emerging AI Act (Regulation EU 2024) adds a further layer, adopting a risk-based classification of AI systems and imposing specific obligations for those deployed in education, healthcare, and public services—contexts where algorithmic bias could directly affect access to fundamental rights6. Together, these instruments trace the contours of an accessibility by design legal model: inclusion is not a corrective measure but a design imperative. Finally, soft-law initiatives—such as UNESCO's Recommendation on the Ethics of Artificial Intelligence (2021) and the OECD AI Principles—reinforce a global convergence toward responsible innovation, framing inclusion as both a normative requirement and a development goal aligned with the UN's Sustainable Development Agenda. In particular, the UNESCO Recommendation on the Ethics of Artificial Intelligence (2021) places a strong emphasis on inclusion and accessibility, recognizing that AI technologies can either empower or marginalize people with disabilities. It calls for AI systems to be designed with diversity and human dignity at their core, so that technological innovation does not reproduce existing barriers or create new ones. The document reminds policymakers and developers that persons with disabilities often face "algorithmic invisibility," when systems fail to account for their specific needs or treat them as statistical outliers. By promoting accessibility, fairness, and universal design, the Recommendation envisions an AI ecosystem where technology becomes a tool for participation and autonomy, rather than a new source of exclusion. At the same time, OECD AI Principle 1.1, on inclusive growth, sustainable development and well-being, emphasizes that the true value of artificial intelligence lies not merely in its capacity to drive innovation or economic efficiency, but in its potential to enhance human flourishing and social equity.7 A trustworthy AI, as envisioned by the OECD, should actively contribute to expanding human capabilities and supporting the inclusion of groups that have traditionally been marginalized or underrepresented. This principle urges policymakers, developers and institutions to see AI as a shared resource for humanity—one that can help reduce economic, social and gender inequalities while protecting the natural environment. In essence, it reframes technological progress as a collective endeavor, where the goal is not simply smarter machines, but a fairer, more sustainable world in which technology serves both people and the planet [6-8].

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[3]The European Accessibility Act (Directive (EU) 2019/882) represents a significant step toward a more inclusive internal market by harmonizing accessibility requirements for products and services across the European Union. Its objective is to remove regulatory fragmentation among Member States, thereby facilitating the free movement of accessible goods and services. The Act benefits businesses by introducing common accessibility standards that reduce compliance costs and promote cross-border trade, while also expanding market opportunities. For persons with disabilities and older people, it ensures broader access to affordable and accessible products and services, contributes to greater inclusion in transport, education, and employment, and fosters new job opportunities in the accessibility and assistive technology sectors.

[4]Directive (EU) 2016/2102 of the European Parliament and of the Council establishes a common framework to ensure that public sector websites and mobile applications are accessible to all, including persons with disabilities. Under Article 4, Member States are required to make these digital interfaces perceivable, operable, understandable, and robust, reflecting the key principles of accessibility. However, Article 5 introduces a proportionality clause, allowing for exemptions when compliance would impose a "disproportionate burden" on a public sector body. This assessment must consider factors such as the size, resources, and nature of the entity, as well as the balance between implementation costs and the expected benefits for persons with disabilities. This approach seeks to promote accessibility while maintaining practical feasibility and proportionality in implementation.

[5]Under Article 9 of Regulation (EU) 2016/679 (GDPR), data concerning disability fall within the "special categories" of personal data, namely data revealing an individual's health status. The processing of such data is permitted only under specific conditions of lawfulness, for instance for purposes of medical care, for reasons of substantial public interest, or in the field of public health, pursuant to Legislative Decree No. 196/2003, as amended by Legislative Decree No. 101/2018. In Italy, the Data Protection Authority (Garante per la Protezione dei Dati Personali) has repeatedly emphasized the need to adopt organizational and technical measures ensuring the confidentiality of data relating to persons with disabilities—particularly in employment and educational contexts—prohibiting the unnecessary disclosure of information that may reveal an individual's health status (see Italian DPA Decisions No. 313/2014; No. 290/2022; No. 606/2024; Guidelines of 2 March 2011; Decision of 21 November 2023; and the "Privacy-Proof School" Handbook, 2023).

al states and modulating behavior in real time[11]. In Spain, an "intelligent radio" chatbot for elderly users provided companionship by reading news and engaging in short, mood-adaptive dialogues, mitigating social isolation. Each of these examples reveals the same principle: technology becomes inclusive when it learns from human diversity rather than forcing humans to adapt to technological rigidity. However, it also underscores the urgency of legal certainty—particularly regarding liability. The AI Liability Directive (COM 2022/496) addresses this by easing the burden of proof for victims in cases of algorithmic harm or discrimination, thereby strengthening the enforceability of the fundamental right to equality in the digital sphere.

Virtual Reality and the New Spaces of Participation

If AI enhances adaptability, Virtual Reality redefines presence: it allows users to transcend physical constraints and participate in spaces that were once inaccessible, transforming inclusion from a matter of access into a matter of experience. In educational settings, immersive VR can reproduce laboratories, cultural sites, or collaborative classrooms in ways that enable participation by students with motor, cognitive, or sensory impairments. Studies have shown that VR environments can serve as safe spaces for individuals with autism to practice social interactions, or for mobility-impaired learners to explore simulated environments designed for active learning[12]. In healthcare, VR therapy supports pain management, cognitive rehabilitation, and trauma recovery, often in combination with AI systems that personalize stimuli and monitor progress. From a legal perspective, these uses challenge existing frameworks in several respects. First, they blur the distinction between physical and digital environments: if participation in a virtual classroom or museum constitutes a form of citizenship, then accessibility in VR becomes a legal right rather than a design preference[13]. The European Accessibility Act[14] and the CRPD[15] both support such an interpretation, promoting inclusive participation in cultural and educational life. Second, immersive technologies generate vast amounts of behavioral and biometric data: gaze tracking and even emotional responses. Under the GDPR, these data are highly sensitive and require explicit consent, rigorous security measures, and purpose limitation. The law thus faces a delicate balance: enabling innovation while protecting the individual's informational self-determination. A third challenge is distributive: the digital divide risks transforming VR into an elitist technology, available only to institutions with the resources to implement it. Public policy must therefore ensure that inclusion does not depend on geography or wealth. Legal instruments such as the EU Digital Education Action Plan (2021–2027) aim to address this imbalance, but implementation remains uneven[16]. Ultimately, VR represents a laboratory for testing how the law conceives of participation itself—whether as access to spaces or as the capacity to act within them.

The Principle of Technological Non-Discrimination

At the core of inclusive innovation lies the principle of technological non-discrimination, which extends the traditional equality framework into the algorithmic domain. It requires that AI and VR systems neither reproduce nor amplify the structural biases of the societies from which their data originate. In practice, this means ensuring that datasets are representative, that training procedures include fairness testing, and that outputs are explainable to human oversight. Legal systems are beginning to codify these requirements: the AI Act mandates documentation and transparency for high-risk systems[17]; the GDPR guarantees the right not to be subject to purely automated decisions (Article 22)[18]; and the EU Charter and the European Convention on Human Rights safeguard equality before the law and protection against discrimination (Articles 20–21 Charter, Article 14 ECHR)[19]. Yet compliance remains challenging. Bias can enter through data selection or even deployment contexts and its detection often requires interdisciplinary auditing involving law, ethics, and computer science. The principle of fairness must therefore evolve from an abstract moral aspiration into a concrete legal standard, supported by technical measures such as algorithmic audits, impact assessments and certification schemes. Moreover, technological discrimination extends beyond the algorithm itself to issues of accessibility and affordability. A system that is perfectly fair in design but financially inaccessible to marginalized users still perpetuates exclusion. Thus, equity in digital access must accompany equity in algorithmic treatment. The ultimate goal is to establish a digital public order where inclusion is not an optional feature but an infrastructural right, enforceable through both ex ante obligations and ex post remedies.

From Reactive Law to Anticipatory Governance

The cases and principles discussed reveal a decisive shift in the legal paradigm: from a reactive logic— where law intervenes after harm—to an anticipatory governance model, in which legal norms co-design technological ecosystems before risks materialize. Anticipatory governance entails a convergence of regulatory, ethical, and participatory instruments. It includes ex ante impact assessments, independent algorithmic audits and the establishment of ethical labels and certification schemes to guide consumers and institutions toward trustworthy systems [9, 10].

In this regard, emerging frameworks for ethical and safety certification in artificial intelligence mark a profound transformation in how accountability and legitimacy are conceived in the digital age. Rather than relying solely on post-hoc enforcement or liability mechanisms, these frameworks embed normative expectations directly into the design, deployment, and management of AI systems. The EU Artificial Intelligence Act (Regulation (EU) 2024/1689) exemplifies this shift by introducing manda-

[6] The EU Artificial Intelligence Act (2024) takes a risk-based approach to ensure that AI systems are developed and used responsibly. It classifies AI into four levels of risk and sets stricter rules for systems used in sensitive areas like education, healthcare, and public services, where unfair or biased algorithms could have real consequences for people's rights. The Act also bans some particularly harmful uses of AI, such as biometric categorization that tries to infer protected traits (for example, ethnicity or sexual orientation) and real-time remote biometric identification for law enforcement in public spaces.

[7] OECD, inclusive growth, sustainable development and well-being (Principle 1.1): "This Principle highlights the potential for trustworthy AI to contribute to overall growth and prosperity for all – individuals, society, and planet – and advance global development objectives. Stakeholders should proactively engage in responsible stewardship of trustworthy AI in pursuit of beneficial outcomes for people and the planet, such as augmenting human capabilities and enhancing creativity, advancing inclusion of underrepresented populations, reducing economic, social, gender and other inequalities, and protecting natural environments, thus invigorating inclusive growth, well-being, sustainable development and environmental sustainability."

[8] C. Papadopoulos, N. Castro, A. Nigath, R. Davidson, N. Faulkes, R. Menicatti, A. Khaliq, C. Recchiuto, L. Battistuzzi, G. Randhawa, L. Merton, S. Kanoria, N. Chong, H. Kamide e D. A. Hewson, «The CARESSES Randomised Controlled Trial: Exploring the Health-Related Impact of Culturally Competent Artificial Intelligence Embedded Into Socially Assistive Robots and Tested in Older Adult Care Homes,» International Journal of Social Robotics, vol. 14, n. 1, pp. 245-256, 2022.

tory conformity assessments and a CE marking for high-risk AI systems—mechanisms that translate abstract ethical principles into enforceable technical obligations[20].

At the same time, the growing ecosystem of international standards reinforces this anticipatory logic. The ISO/IEC 42001:2023 standard on AI management systems and ISO/IEC 23894:2023 on risk management provide structured methodologies for embedding accountability, transparency, and human oversight throughout the AI lifecycle. Likewise, the IEEE 7000 series on ethically aligned design operationalizes values such as fairness, privacy, and explainability through concrete engineering practices. These instruments collectively signal a broader epistemic shift: ethics and law are no longer external correctives to technology, but intrinsic components of its governance architecture.

Ultimately, the proliferation of certification schemes and standardization initiatives reflects an evolving legal consciousness in which anticipation replaces reaction as the core principle of regulation. By promoting harmonized benchmarks for responsible AI, the European and international frameworks seek not only to prevent harm but also to cultivate a culture of accountability and public trust. In this anticipatory governance model, legal norms act as a design force. They can shape technological trajectories in alignment with fundamental rights and the collective good. It also requires fiscal and policy incentives for companies that invest in inclusive design and accessibility. Public procurement—an often-underestimated tool—could integrate social clauses rewarding inclusivity and transparency in digital solutions.

Institutions such as data protection authorities, standardization bodies and ethics councils should collaborate in a coordinated governance architecture capable of monitoring compliance and fostering innovation simultaneously. Furthermore, inclusion should be recognized as a strategic asset for sustainable development, aligned with the UN's Sustainable Development Goals (particularly SDG 10 on reducing inequalities and SDG 16 on strong institutions). In this model, the law does not oppose innovation but channels it toward collective values. It assumes a formative function: shaping technological evolution in accordance with human rights and constitutional principles, rather than merely correcting its excesses [11, 14].

Conclusion

Shaping Technolog Around Human rights Artificial Intelligence and Virtual Reality have the power to redefine what it means to participate in society. They can extend the reach of education, healthcare, and culture, but they can also deepen exclusion if left unregulated or poorly designed. The legal and ethical imperative of our time is to ensure that innovation aligns with the architecture of rights. Inclusion must be the measure of legitimacy of technological progress, not its by-product. The European model—rooted in dignity, equality, and fundamental rights—offers a unique framework for achieving this balance. Anticipatory governance shifts regulation from reacting to harm toward proactively embedding ethical and legal norms in AI design. The EU AI Act and emerging international standards, such as ISO/IEC 42001:2023 and the IEEE 7000 series, institutionalize "ethics by design" through conformity and risk management systems. These frameworks turn abstract ethical principles into auditable technical requirements. Together, they promote accountability and the alignment of innovation with fundamental rights.

[9] C. Papadopoulos, T. Hill, L. Battistuzzi, N. Castro, A. Nigath, G. Randhawa, L. Merton, S. Kanoria, H. Kamide, N.-Y. Chong, D. Hewson, R. Davidson e A. Sgorbissa, «The CARESSES study protocol: Testing and evaluating culturally competent socially assistive robots among older adults residing in long term care homes through a controlled experimental trial,» Archives of Public Health, vol. 78, n. 1, 2020.

[10]Article 4(14) of the General Data Protection Regulation (GDPR) defines biometric data as personal data resulting from specific technical processing of physical, physiological, or behavioural characteristics that allow or confirm the unique identification of a natural person, such as facial images or dactyloscopic data. This definition implies that biometric data arise not merely from observation, but from a technological process aimed at identification. Article 9 GDPR further classifies such data among the special categories of personal data, whose processing is in principle prohibited, save for limited exceptions grounded in explicit consent, public interest, or healthcare purposes. Together, these provisions reflect the legislator's intent to prevent the normalization of biometric surveillance and to ensure that any use of biometric identifiers complies with the principles of lawfulness, proportionality, and data minimization.

[11]The humanoid robot NAO, developed by SoftBank Robotics, has been successfully employed in several European research projects focusing on children with Autism Spectrum Disorder (ASD), including a pilot program conducted in Turin, Italy. Within this initiative, NAO acted as a socially assistive tool capable of recognizing emotions, adapting its speech and gestures, and facilitating structured interaction between children, therapists, and educators. The project demonstrated improvements in social engagement and emotional responsiveness, confirming the potential of AI-driven robotics in inclusive therapeutic contexts. See Stefania Brighenti, Cristina Gena, Federico Buratto, Claudio Mattutino, Fernando Vito Falcone, and Matteo Nazzario, "Social Assistive Robotics for Autistic Children," in CAESAR'20: Proceedings of the Workshop on Cognitive Architectures for Social and Assistive Robotics, Cagliari, Italy, March 2020

[12]Kourtesis et al. (2023) examined the use of virtual reality to train social skills in adults with autism spectrum disorder. The study found the VR program to be highly acceptable and usable, with meaningful links between participants' performance in social scenarios, executive functions, and overall functioning. Working memory and planning skills emerged as key predictors of social performance, supporting the potential of adaptive, error-free VR interventions tailored to individual needs.

[13]Sanz-Prieto, De Pablo González, and De Pablo Sánchez (2024) describe the ART Project, which integrates virtual reality into global citizenship and arts education. Developed in response to the limitations on mobility during the COVID-19 pandemic, the project seeks to make art and culture accessible through immersive VR experiences. It aims both to engage students in exploring global themes creatively and to empower teachers to design and share innovative educational materials on the platform.

[14]The European Accessibility Act (Directive (EU) 2019/882) establishes common accessibility requirements for products and services across the European Union, aiming to ensure equal access and participation for persons with disabilities in the internal market.

[15]The Convention on the Rights of Persons with Disabilities (CRPD), adopted by the United Nations in 2006, is an international human rights treaty that promotes the f

[16]Ensuring equitable inclusion in education requires addressing persistent disparities in access to digital infrastructure and resources between regions and socio-economic groups. While EU initiatives such as the Digital Education Action Plan (2021– 2027) aim to reduce these gaps by promoting inclusive and high-quality digital learning, their impact depends heavily on national implementation and investment, which remain uneven across Member States

[17] The AI Act (Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024) establishes transparency and documentation obligations for high-risk AI systems to ensure accountability and public trust, requiring providers to maintain detailed technical records and risk management documentation.

[18]Article 22 of the General Data Protection Regulation safeguards individuals from decisions made solely through automated processing, including profiling, when such decisions have legal or similarly significant effects. This provision ensures that human oversight remains central in high-impact decision-making processes and grants individuals the right to obtain human intervention, express their views, and contest automated outcomes (Regulation (EU) 2016/679 of the European Parliament and of the Council of [27] April 2016, General Data Protection Regulation [GDPR], Art. 22).

Principles into auditable technical requirements. Together, they promote accountability and the alignment of innovation with fundamental rights. But the effectiveness of those tools will depend on its ability to anticipate, not merely to regulate. The goal is not to adapt human beings to machines, but to design machines—and the laws that govern them—around human beings. In the age of intelligent and immersive systems, this is what it means for law to remain faithful to its original vocation: to transform power into protection and innovation into inclusion.

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[19] Both the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights enshrine the principles of equality and non-discrimination. Articles 20–21 of the Charter affirm that everyone is equal before the law and prohibit discrimination on any ground, while Article 14 of the ECHR guarantees the enjoyment of rights and freedoms without discrimination (Charter of Fundamental Rights of the European Union, 2012/C 326/02; European Convention on Human Rights, Rome, 4 November 1950, Art. 14).

[20] Through its layered approach to risk, the Act institutionalizes the notion of "ethics by design," making compliance not merely a legal requirement but a constitutive dimension of trustworthy innovation.