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# AI Governance, Interoperability, and Good practices

## Discussion Paper

### 1. Introduction

Development and uptake of artificial intelligence (AI) is proliferating at an unprecedented pace and across sectors. A concerted effort in governing AI is vital to harness the opportunities while managing the challenges and risks the new technology brings. **Interoperable systems and interoperable governance frameworks that effectively address emerging risks become imperative.** As AI is increasingly embedded in our society, it is critical that global governance frameworks encourage interoperability to promote a safe, secure, fair and innovative AI ecosystem.

Interoperability is often understood as the ability of different systems to communicate and work seamlessly together. Our multistakeholder group's **definition of interoperability is broader and includes the ways through which different initiatives to regulate and govern AI across the world could work together** and through that become more impactful.

In this paper we **assess the current landscape of AI interoperability governance and give actionable recommendations.** Fostering interoperability among AI systems and governance frameworks will be key to enhancing collaboration and building consensus among diverse global stakeholders. Building on the 2023 work on global AI governance by the Policy Network on AI (PNAI)<sup>1</sup>, we strengthen the multistakeholder voice in the global dialogue on AI and provide critical analysis with local evidence from both the Global North and South.

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<sup>1</sup>Policy Network on AI, [Strengthening multi-stakeholder approach to global AI governance, protecting the environment and human rights in the era of generative AI - A report by the Policy Network on Artificial Intelligence](#), 2023

## 2. AI governance and interoperability - highlights in 2024

Numerous AI policies, frameworks, guidelines, workbooks, standards and regulations are being developed and implemented in different parts of the world and on global level in 2024. We observe a strategic blend of innovation-driven and regulation-focused approaches to AI governance, and increasing emphasis on interoperability, ethical standards, and international cooperation. In this section we review existing AI interoperability governance policies and examine common governance issues that would be best addressed at the global level. Building on October 2023 PNAI report on AI governance<sup>2</sup>, we focus on new developments that took place in the last months of 2023 and in 2024.

See the 2024 highlights in Appendix 1.

## 3. AI governance and interoperability policies - patterns and gaps across jurisdictions

As we scanned the existing AI governance and interoperability policies, we observed similar patterns across jurisdictions. We noted **a surge of national and regional AI governance interventions in 2024**, perhaps due to the recent advances in generative AI. There is an increasing emphasis on interoperability and international cooperation to address the challenges posed by AI. Interoperability interventions we identified were mainly from the private sector, the UN, regional organizations, OECD, national governments, increasingly including initiatives from the Global South.

The interoperability efforts focus on exchange of standards across various standards bodies; data framework for AI training data, cybersecurity, privacy and personal data protection; mitigating existing and emerging risks; and; transparency obligations of AI system developers and deployers. In addition, establishing oversight bodies<sup>3</sup> is a growing trend. Building consensus on global AI governance and strengthening multistakeholder forums, such as the Internet Governance Forum, are scarcely mentioned. Large parts of the world, mostly countries and regions in the Global South, have been left out of international AI governance conversations<sup>4</sup>.

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<sup>2</sup> Ibid.

<sup>3</sup>Such as an International scientific panel, the Arab AI Council (does not have enforcement power), and EU AI office and ASEAN Working Group on AI Governance and (have enforcement power)

<sup>4</sup>UN AI Advisory Body, [Governing AI for Humanity](#), September 2024

### 3.1. Gaps

There are many regional and multilateral AI interoperability frameworks, but **a comprehensive global interoperability framework to coordinate different AI frameworks is missing**. There is not enough global solidarity and resource-sharing to make sure AI leaves no one behind. National and regional efforts driven by local priorities, have led to fragmented and divergent requirements that are likely to create friction, undermine governmental objectives, and result in interoperability barriers.

Cohesive and responsive governance frameworks are critical for tapping into the full benefits of AI to society and managing AI-related risks effectively. **Significant gaps remain in the current efforts that target effective interoperability in AI governance**. Identifying the gaps and reflecting on best ways to close them is the foundation for recommendations for effective international cooperation. Key gaps our team has identified include (for details see Appendix):

1. Lack of a globally accepted reference framework for harmonizing regional and multilateral efforts
2. Lack of AI integration across the ethical, legal, technical and policy issues
3. Lack of input from the Global South
4. Lack of coordination among regulatory approaches
5. Lack or active collaboration of multiple key stakeholder groups
6. Risk of further technical incompatibilities
7. Risk of ethical inconsistencies
8. Risk of stifling innovation and eroding public trust in AI systems

## FRAMEWORK FOR COMPARING AI INTEROPERABILITY INITIATIVES

Building on our findings, **three critical aspects of interoperability** warrant further consideration:

**Legal frameworks** - We need to strengthen the existing world-wide AI regulatory ecosystem: enhance coordination and align legal and regulatory frameworks across regions.

**Technical standards and interfaces** - We need to ensure that world-wide AI systems are compatible across platforms and regions, with a focus on aligning technological standards.

**Global data frameworks** - We need to develop a unified world-wide data framework to facilitate sharing AI training data, while ensuring robust protections for personal data and privacy.

In addressing these key aspects, critical questions arise: *What elements of the existing interoperability policies are effective, and which aspects are lacking? What tensions exist within current interoperability models?* This angle to interoperability explores the friction between different frameworks, standards, and regulatory approaches that may hinder effective interoperability.

**We adopt a framework to compare interoperability policies and models effectively.** The framework builds on recurring patterns that we have observed across different initiatives<sup>5</sup>. These patterns provide a structured approach for identifying differences between them.<sup>6</sup>

The **key patterns for comparison** include: 1) Objectives of interoperability; 2) Principles and values of interoperability; 3) Top-down vs. bottom-up approaches; 4) Binding nature; 5) Level of integration; and; 6) Components of interoperability frameworks. (See Appendix for more information on the patterns.<sup>7</sup>)

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<sup>5</sup>Cedric (Yehuda) Sabbah, [Framework Interoperability: A New Hope for Global Digital Governance](#), 2024

<sup>6</sup>It is important to note that the framework can be adapted during the analysis to fit the specific context under consideration.

<sup>7</sup>See definitions in Appendix

## 3.2. Interoperability framework – Key requirements

In the following pages we analyse **legal, technical and data interoperability** and present **effective interoperability instruments, barriers and tensions** under these three areas. These findings are based on our analysis of existing AI interoperability regulations, strategies and initiatives in different parts of the world.

### 3.3.1 Legal Interoperability

**Legal interoperability** ensures that AI systems operating under different legal frameworks, policies and strategies can work together. This can be achieved for example through clear agreements on managing differences in legislation, or by introducing new legislation<sup>8</sup>. A legal interoperability framework can be the common denominator of interoperability policies in different jurisdictions.<sup>9 10</sup>

Legal interoperability frameworks define the scope of interoperability, particularly regarding data exchange and privacy and data protection requirements. Legal framework interoperability is the ability of different frameworks to coexist and communicate with one another, reducing regulatory friction between jurisdictions, advancing common policy goals and balancing global integration with domestic regulatory autonomy<sup>11</sup>. “Interoperability checks” by policy makers and regulators are key in formulating regulatory interoperability frameworks. The first step in addressing legal interoperability is screening existing legislation to identify interoperability barriers<sup>12</sup>. The second step is evaluating compatibility between the enabling legislation of different organizations and countries to ensure there is coherence between legislations. This will facilitate interoperability between AI systems at lower levels (semantic and technical) and reduce cost and implementation time.

#### Effective interoperability instruments

**Regional and international frameworks** provide a degree of policy consistency and governance coherence. Legal AI interoperability efforts in the Global South developing countries including in the regions of Latin America, Southeast Asia and China are increasingly influenced by regional or international regulations and standards.<sup>13</sup> The

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<sup>8</sup>European Commission, [New European Interoperability Framework: Promoting seamless services and data flows for European public administrations](#), 2017

<sup>9</sup>The Regulatory Review, [Improving International Regulatory Cooperation](#), 2022

<sup>10</sup>See Appendix

<sup>11</sup>Cedric (Yehuda) Sabbah, [Framework Interoperability: A New Hope for Global Digital Governance](#) article in Lawfare, 2024

<sup>12</sup>Such as sectoral or geographical restrictions in the use and storage of data and AI systems, different and vague data or AI licence models, over-restrictive obligations to use specific digital technologies or delivery modes to provide service, contradictory requirements for the same or similar business processes, outdated security and data protection needs etc.

<sup>13</sup>Particularly the OECD, EU, CoE, UNESCO, ISO and U.S. NIST.

reasons for this include concentrated regulatory leadership, soft power and diplomatic forces, economic power, and asymmetry of influence between the Global North and South in shaping international norms. Singapore and Malaysia align with the OECD AI Principles, many countries in Latin America refer to the EU AI Act, IOS and U.S. NIST as guidelines and benchmarks. African AI governance initiatives consider best practices both within the region and globally<sup>14</sup>. China's AI standards are based on analysis of domestic and foreign AI laws, and strategies<sup>15</sup>. The UN strengthens international cooperation in AI, promotes inclusive AI development, and coordinates interoperability efforts.

**Unified AI regulators** are set up or proposed in national, regional and global levels to coordinate AI governance effectively. For example, Singapore has designated its Personal Data Protection Commission (PDPC) as a key regulator for AI, The EU has set up its AI Office and The Arab AI Council coordinates AI initiatives across Arabic member states. The African Union is building intra-African coordination and cooperation mechanisms.

Different jurisdictions have established **shared understanding of principles and terms** that are central to AI governance.

**Collaboration in AI safety Governance.** 2024 saw increased coordination in promoting AI safety. The Seoul Declaration established an international network of publicly backed AI Safety Institutes to work on complementarity and interoperability between technical work and approaches to safety.<sup>16</sup> U.S and EU worked on shared understanding of AI safety and working together on research, standards and testing to promote safe, secure, responsible and trustworthy AI. China set up AI Safety and Governance Institutes and as a platform for dialogue, interoperability, and collaborations within and beyond China.<sup>17</sup>

### Interoperability barriers

**Regulatory fragmentation and divergent requirements.** The international, regional and national efforts to develop AI interoperability principles and regulations are driven by varying priorities and principles, leading to fragmented and divergent requirements that are likely to create frictions in AI development and deployment, barriers in using AI systems, and undermine governmental objectives<sup>18</sup>.

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<sup>14</sup>For example EU AI Act, Canadian AI and Data Act, UK AI Regulation, UNESCO's Ethical Impact Assessment etc. See: AU, [Continental Artificial Intelligence Strategy](#), August 2024

<sup>15</sup>Policy Network on AI, [Strengthening multi-stakeholder approach to global AI governance, protecting the environment and human rights in the era of generative AI - A report by the Policy Network on Artificial Intelligence](#), 2023

<sup>16</sup>UK, [Global leaders agree to launch first international network of AI Safety Institutes to boost cooperation of AI](#), May 2024

<sup>17</sup>Chinese AI Safety Network, [Chinese AI Safety Network](#) information website

<sup>18</sup>World Economic Forum, [ChatWTO: An Analysis of Generative Artificial Intelligence and International Trade 2024](#), 2024

**Inadequate multistakeholder involvement.** Data and AI governance plans in the Global Digital Compact are not clear on how a truly multilateral and democratic process will be achieved, raising concerns on diverse stakeholder representation and representation of Global South countries. UN initiatives have been criticized for not adequately considering the already existing multistakeholder frameworks, such as the Internet Governance Forum, and assessing their learnings, current shortcomings and ways to improve to realize effective multistakeholder involvement in global AI governance.

**Lack of details on implementing interoperability.** We see an increase in concrete and specific interoperability measures, models and legislations in 2024, but most frameworks stay at abstract level and offer little concrete details on how suggested actions (for example international collaboration, best practice sharing, capacity building) can be realized and implemented.

### Tensions

**Differences in AI governance maturity level** create disparity in enforcing of international and regional frameworks. For instance, while there is broad agreement on guiding principles for AI governance (such as fairness, transparency, accountability, or protection of human rights), the level of detail and enforcement varies and some countries offering more robust guidance than others. This disparity can impact the interoperability of AI governance, particularly when principles are interpreted or applied differently in different countries.

**Differences in the nature of enforcement** - binding or non-binding frameworks. Most interoperability frameworks are non-binding, soft law approach in the form of declarations, guideline, mutual recognition agreements provides flexibility and lower implementation costs but of course also reduces the enforcement power .

**Differences in regulatory approaches.** Responsibilities and powers of regulators differ from country to country. Lack of a consistent regulatory approach complicates efforts to achieve legal interoperability. In ASEAN, Singapore's PDPC is the key regulator for AI, Malaysia and Thailand rely on existing agencies (such as data protection authorities and sector-specific regulators) to oversee AI-related issues, while the Philippines's National Privacy Commission largely oversees AI governance. The EU has been criticised for inconsistency in AI regulations for example on fragmented decisions by national Data Protection Authorities regarding data that can be used to train AI models. AI companies

emphasise the need for “harmonized, consistent, quick, and clear decisions” on data privacy regulation<sup>19</sup>.

**Differences in risk categorization.** Countries are beginning to diverge in the ways they assign risk levels to of AI systems. Absence of a unified and widely accepted, international or cross-industry risk categorization framework presents a challenge. Disagreements can arise if AI risks are defined vaguely<sup>20</sup>. AI systems are often classified and regulated differently in different countries, leading to inconsistencies in compliance requirements and audits. Objective and legally tenable standards for deciding when an AI system is determined to pose a risk are needed<sup>21</sup>. Within Southeast Asian countries, Singapore categorizes AI risk systems based on their potential impact on individuals and society. China’s AI risk framework is based on characteristics of AI technology and its applications.

**Global cooperation and local autonomy.** Global initiatives foster global AI governance collaboration. Regional frameworks, such as ASEAN’s Guide on AI Governance and African Union’s AI Strategy, emphasize local priorities, which may not always align with global frameworks. Latin America’s Santiago Declaration emphasizes the region’s aspiration to influence global AI governance, but also highlights local challenges and notes that dependence on foreign technologies may create friction.

### 3.3.2. Interoperability among technical standards

Technical interoperability enables machine-to-machine communication, systems have to adopt the same technology standards for software, physical hardware components, and systems and platforms<sup>22</sup>. The Open Systems Interconnection (OSI) model created by ISO standardizes communications to ensure interoperability between diverse computing systems<sup>23</sup>. In 2024, several AI initiatives have established standard interoperability frameworks focusing on sustainable development, safety, human rights, and responsible governance of AI systems.

#### Effective interoperability instruments

**International collaboration.** The UN AI resolutions and EU AI Act encourage Member States to facilitate the development and deployment of internationally interoperable technical tools, standards or practices to seize the opportunities of AI for sustainable

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<sup>19</sup>EU needs AI, [Europe needs regulatory certainty on AI](#) open letter (Accessed in September 2024)

<sup>20</sup>AI Risk Repository, [The AI Risk Repository](#) information web page (Accessed in September 2024)

<sup>21</sup>[Check reference] Costanza-Chock et al., 2022

<sup>22</sup>World Bank, [Interoperability frameworks](#)

<sup>23</sup>[Check reference] UK CMA, [Joint statement on competition in generative AI foundation models and AI products](#), July 2024. ISO/IEC 2382:2015 - Information Technology Vocabulary. ISO/IEC 24765:2010 - Systems and Software Engineering Vocabulary.



development. The Global Digital Compact and the UN High-Level AI Advisory Body emphasize inclusive international collaboration and ensuring AI standards are adaptable and globally applicable. The first international network of AI Safety Institutes boosts common understanding of AI safety. Additionally, International Electrotechnical Commission (IEC), International Organization for Standardization (ISO), and International Telecommunication Union (ITU), have cooperated to map AI/machine learning standardization activities to facilitate coordination, mitigate overlaps, and prevent duplicating efforts.<sup>24</sup> Additionally, organizations such as ISO and IEC have developed robust vocabularies to standardize terminology, helping to enhance interoperability across regions and sectors.<sup>25</sup>

**Regional and National Variations.** The US-Singapore Dialogue on Critical and Emerging Technologies (CET Dialogue) is a platform for information-sharing and consultations on international AI standards development between the two countries, interoperability of the countries' frameworks was achieved through a joint mapping exercise between Singapore IMDA AI Verify and US NIST AI RMF.<sup>26</sup> China has set a goal to participate in the formulation of more than 20 international standards by 2026<sup>27</sup>. US NIST released a plan for global engagement on AI standards. The (draft) Kenya AI standard -Code of Practice for AI Applications respects internationally recognized human rights and labour practices.

**Technical Industry Self-Regulation and Technical Integration.** The US AI Safety Institute Consortium has brought together over 280 organizations (including for example OpenAI, Google, Anthropic, Microsoft, Meta, Amazon and Nvidia) to develop science-based and empirically backed guidelines and standards for AI measurement and policy. The widespread adoption of machine learning and natural language processing technologies has improved interoperability through better data exchange and better understanding across platforms. These technologies allow systems to interact at multiple levels (both technical and semantic) enhancing communication and data usability.<sup>28</sup>

## Barriers and Tensions

**The absence of widely adopted standards and shared frameworks for AI interoperability** creates friction between different approaches. Challenges include inconsistent data quality, lack of standardization, and integration difficulties that can hinder implementation.

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<sup>24</sup>See [World Standards Cooperation](#) information page and [AI/ML landscape of ISO/IEC/ITU-T](#) document (August 2024)

<sup>25</sup>See for example ISO/IEC 2382:2015 and ISO/IEC 24765:2010.

<sup>26</sup>[Reference]

<sup>27</sup>[Check reference] <https://www.tc260.org.cn/upload/2024-09-09/1725849192841090989.pdf>

<sup>28</sup> See Appendix

**Inconsistencies in the adoption of AI standards across regions.** The EU AI Act provides strict binding regulations, while other regions focus mostly on non-binding standards. The Global South faces challenges with infrastructure and connectivity that can limiting their ability to meet AI standards.

**Disparity between top-down and bottom-up models of AI standard frameworks.** Top-down approaches may lack flexibility, especially in accommodating rapidly advancing technologies. Bottom-up approaches are more flexible but can create governance gaps, particularly concerning ethical and human rights issues.

**Difference between binding and non-binding standards.** Binding standards provide stronger regulatory enforcement but may conflict with more voluntary frameworks in other regions. However, the two approaches can complement each other: non-binding standards can serve as a foundation for innovation and initial alignment, while binding standards ensure accountability and adherence to essential ethical and regulatory requirements

**Unequal Distribution of AI technology.** All countries are not developing AI applications at the same rate, this situation creates "AI haves" and "have-nots" further complicating burden-sharing and interoperability efforts.

### 3.3.3 Data and Privacy Interoperability

While data offers immense benefits for innovation and economic growth, privacy concerns are a major challenge. Collecting personal data brings risks of unauthorized access and misuse, data security has become a critical issue as especially large data repositories attract cybercriminals. High-profile data breaches have resulted in legal and financial consequences for affected companies, highlighting the need for strong interoperable security protocols and shared incident response strategies.

Shared interoperable privacy standards can ensure that as personal data is processed it adheres to a common set of privacy principles everywhere in the world. AI training data often comes from diverse sources (different countries, industries, or formats) and must be usable across multiple AI models and platforms. Standardized data formats, consistent labelling practices, and data quality controls that allow AI systems to learn from the same datasets regardless of origin. Lack of interoperability presents obstacles to efficient data sharing and collaboration. The regulatory environment adds another layer of complexity through varying data protection laws across jurisdictions. Organizations must navigate a complex compliance landscape. Inconsistent privacy standards create barriers that must be overcome to allow global operations.

**Data interoperability** ensures that data can be shared and reused across different systems while maintaining consistency, quality, and security. The key requirement for setting up a data interoperability framework is the adopting common data formats, metadata standards, and protocols that enable seamless data exchange across platforms. It also requires the establishment of data governance models that define the rules for data access, sharing, and protection, particularly regarding privacy and security concerns. Furthermore, the framework must ensure semantic interoperability (data that is exchanged between systems is understood in the same way) regardless of systems or organizations involved. This can be achieved by developing common ontologies and taxonomies. Finally, the framework should promote compliance with international data protection regulations and ensure that data interoperability supports cross-border data flows while respecting privacy and security requirements<sup>29</sup>.

AI systems have to adopt the same technology standards for software, physical hardware components, and systems and platforms to enable machine-to-machine communication<sup>30</sup>. Technical interoperability focuses on ensuring AI systems can communicate and work together by adopting uniform standards across software, hardware components, and platforms. The key requirement for establishing a technical interoperability framework is adopting common standards across jurisdictions and sectors<sup>31</sup>. Another critical aspect is alignment between international standardization organizations (ISO, IEC, IEEE, and ITU), and ensuring the framework is flexible and adapts to future technological developments. Regular third-party testing, certification, and validation processes are also needed to guarantee that systems from different providers meet these technical interoperability standards.

We have identified five objectives to address the challenges of global data privacy and interoperability: Prevent Data Protection Disparities and Legal Arbitrage; Harmonize Regulatory Environments; Enhance Transparency; Improve Consumer Redress Mechanisms; and Cross-Border Interoperability for AI Training Data Sharing.<sup>32</sup>

### Current tensions<sup>33</sup>

**Operational Burden of Data Compliance.** Strict data privacy regulations impose significant compliance costs, which can be particularly challenging for Micro, Small, and Medium Enterprises (MSMEs). As a result, MSMEs may be excluded from global AI ecosystems or face non-contextualized regulations. This can hinder innovation,

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<sup>29</sup>GDPR.EU, [What is GDPR, the EU's new data protection law?](#) information page (Accessed in September 2024)

<sup>30</sup>World Bank, [Interoperability frameworks](#)

<sup>31</sup>Ibid. Use of open protocols, APIs, and system architecture that enable machine-to-machine communication and data exchange.

<sup>32</sup> See Appendix

<sup>33</sup> See Appendix

particularly in sectors where AI could contribute to SDG initiatives (such as healthcare, education, or agriculture) and where data sharing is essential, but privacy regulations add operational constraints.

**Absence of Data Protection Laws.** Many countries, particularly in the Global South, lack comprehensive data protection laws. This creates a barrier to interoperability. AI training data from these regions may not meet the standards required for cross-border data flows with countries that have stricter laws. The absence of international or national legal frameworks limits these countries' ability to participate in global AI research, undermining trust in international data sharing initiatives. This situation prevents these regions from fully leveraging the benefits of AI-driven innovation.

**Disproportionate Influence of AI Powerhouses.** Countries with major AI research hubs may exert disproportionate influence over global standards and frameworks for AI data interoperability. This situation can result in interoperability standards favouring technological capabilities and regulatory frameworks of powerful nations, potentially at the expense of smaller countries or the Global South. The imbalance of influence might also result in data governance policies that prioritize the commercial and innovation interests of the Global North over global ethical concerns or privacy needs of countries with fewer resources. This dynamic may risk creating an unequal AI ecosystem where only the most powerful nations set the terms for data flows and privacy protections. Some countries struggle to adopt advanced data and privacy standards or regulations due to limited resources and differing legal infrastructures. This creates a challenge for interoperability in AI data flows, leading to fragmented global data sharing practices. The imposition of one-size-fits-all regulations may also overlook the specific needs of these countries, stifling AI innovation and hindering the progress toward reaching SDGs, where flexible data usage is critical.

**Siloed Data and Resource Limitations.** Many organizations lack the infrastructure and expertise to implement interoperability solutions, leading to siloed data and inadequate resources. This limits the overall effectiveness of AI systems<sup>34</sup>. Countries face difficulties in developing interoperable AI systems and sharing the data that underpins the technology. Data sharing is often politically sensitive, countries are reluctant to share sensitive information.

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<sup>34</sup>[Check reference] Artificial Intelligence for Interoperability in the European Public Sector

## 4. Recommendations

A combination of concrete regulatory, technical, and data interoperability mechanisms is needed to support AI interoperability. Here are the recommendations of our multistakeholder group:

### General recommendations

- **Define priority interoperability needs on global level.** Define and agree which interoperability risks need to be addressed on the global level. Develop a concrete plan to tackle them<sup>35</sup>, focusing on areas such as AI safety, risk governance, technical standards, data privacy, ethics, AI training datasets and capacity building.
- **Consider effective interoperability mechanisms** identified in this report<sup>36</sup>. Use these already existing mechanisms to create a foundation for more cohesive global AI governance.
- **Establish compatibility mechanisms.** Establishing compatibility mechanisms can help to reconcile divergence in regulation<sup>37</sup>. These mechanisms can include mutual recognition of regulatory outcome agreements; reliance on international standards; recognition of comparable protection afforded by domestic law or certificate; and; joint AI safety testing or aligning mandates<sup>38</sup>. They can involve harmonising regulatory frameworks and creating a shared understanding of AI principles and terminology.<sup>39</sup>
- **Meet Local Needs and establish cross-regional partnerships.** Ensure that AI interoperability frameworks are inclusive, adaptable and address specific local challenges. The UN should work in close collaboration with regional bodies,

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<sup>35</sup> This could include current and emerging safety or security risks related to AI, data and privacy protection, sharing AI training datasets, capacity building etc, focused on issues that have occurred or been observed in practice, and providing specific, consistent, clear mechanisms and methodology to address regulatory gaps, disparities and facilitate inclusiveness, certain, fair and a level playing field for all to benefit from AI. See PNAI's 2023 report.

<sup>36</sup>Such as inclusive multilateral platforms at the UN for data governance discussions, where all countries have equal representation and decision-making power, ensuring that the concerns of smaller under-resourced nations are addressed with regards to data flow; interoperability with widely accepted global and international "meta-frameworks"; creation of unified AI regulators; international collaboration in AI safety Governance; technical industry self-regulation and technical integration etc.

<sup>37</sup>Yik-Chan Chin and Jingwu Zhao, [Governing Cross-Border Data Flows: International Trade Agreements and Their Limits](#), 2022

<sup>38</sup>Marta Ziosi, Claire Dennis, Robert Trager, Simeon Campos, Ben Bucknall, Charles Martinet, Adam L. Smith, Merlin Stein, [AISIs' Roles in Domestic and International Governance](#), 2024. Jane Drake-Brockman et al., [Digital Trade and the WTO: Negotiation Priorities for Cross-Border Data Flows and Online Trade in Services](#); 2021

<sup>39</sup>For best practices see Appendix

especially those at the Global South, to develop interoperable mechanisms that support regional collaboration and prevent reinforcing existing disparities<sup>40</sup>.

- **Combine soft-law and hard law approaches.** Introducing the co-regulation model involves both approaches.<sup>41</sup> Combining multistakeholder participatory coregulation with technical AI solutions is the preferred approach for AI governance.
- **Commit to diverse and open global multistakeholder engagement** in all processes to develop and adopt AI ethics, regulation and standards in all global platforms. Decentralised multilateralism complemented by multistakeholderism should be enforced to achieve inclusive, transparent and accountable dialogue that can deliver legitimate and effective outcomes<sup>42</sup>.
- **Strengthen the Internet Governance Forum.** The IGF, and its multistakeholder structures and mechanisms, should be fully utilized as a platform to support and facilitate discussion on the implementation, monitoring and follow up of the Global Digital Compact<sup>43</sup> This should be done in collaboration with all UN agencies active in AI governance. To maximize IGF's potential for delivering concrete outcomes<sup>44</sup>, long-term sustainability needs to be ensured through increased financial, technical and human resources support.
- **Enhance capacity building in countries that lack resources or expertise.** Implement capacity-building programs that provide training and resources to countries and organizations with limited AI development capabilities. This will help ensure that all regions can participate in and benefit from AI interoperability efforts. Strengthen UN capacity-building initiatives, especially for the Global South. Create a global capacity-building initiative focused on data governance to help under-resourced countries develop robust data protection frameworks.<sup>45</sup>

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<sup>40</sup>Following the examples of those between the ASEAN countries under ASEAN Guide on AI Governance and Ethics and the EU and US Trade and Technology Council.

<sup>41</sup>OECD, [Regulatory reform](#). It involves the private sector developing and administering its own rules while the government provides legislative backing to enable these rules to be enforced. Or regulators form general rules and laws, the private sector can monitor the operation of their application, subject to oversight from government regulators and lawmakers.

<sup>42</sup> The UN process of the Global Digital Compact with its open consultations model can serve as best practices.

<sup>43</sup> United Nations, [Pact for the Future, Global Digital Compact, and Declaration on Future Generations](#), September 2024

<sup>44</sup> For example evidence-based policy recommendations, best practice guidelines and pilot projects.

<sup>45</sup>This could be funded by a coalition of governments, international organizations, and private sector partners or the proposed GDC AI Fund.

## Recommendations on legal interoperability

- **Leverage global and international regulatory interoperability principles.** Policymakers should promote the use of global and international regulatory principles in bilateral, regional, and multilateral agreements. Local regulations need to be able to adapt to cross-border challenges and opportunities, ensuring alignment with global standards. Local rulemaking needs to take in to account international solutions, allowing policymakers to learn from each other and find common approaches to shared problems.
- **Increase international regulatory cooperation.** Strengthening international regulatory cooperation can help regulators address cross-border policy challenges at the right level of governance, limit unnecessary frictions and divergences among regulatory frameworks, and broaden the evidence base for regulation<sup>46</sup>. National regulators should strengthen cross-border and pan-industry cooperation. Unnecessary costs and barriers due to different regional requirements should be avoided, this could create impetus to strengthen regulatory quality and coherence.
- **Develop global standards for categorizing AI risks.** Develop a unified and widely accepted risk categorization framework across jurisdictions to jointly define risk levels for different types of AI systems<sup>47</sup>.

## Recommendations on technical interoperability

- **Promote global alignment on AI standards.** The alignments need to be scientifically grounded and respect international law. Internationally interoperable technical tools, standards or practice need to be developed and deployed through joint international agreements or treaties.
- **Use AI technologies in initiatives to increase interoperability.** Use AI technologies to standardize, clean, and structure data to significantly improve interoperability. AI can facilitate better data integration and sharing, making it easier for different systems to communicate effectively. Develop interoperable platforms that allow different AI systems to work together seamlessly to reduce siloed data and incompatible technologies.

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<sup>46</sup>[Check reference] (OECD, 2013[11]. Long-standing of such efforts to address transboundary air pollution provide a good example of this (OECD, 2020[9])

<sup>47</sup>DFRLab, [User in the Middle: An Interoperability and Security Guide for Policymakers](#), 2024

## Recommendations on data and privacy interoperability

- **Global Data Framework and International Data Sharing.** Develop a global data framework, drawing on existing international and regional data and privacy protection guidelines, to facilitate the sharing of AI training data, while ensuring robust protections for personal data and privacy. Develop International data commons for AI research where countries agree to share anonymized, sector-specific datasets (for example in healthcare, transportation) under secure conditions. Mechanisms such as data trusts, trusted research environments, and multi-party computation can ensure secure sharing of training data between jurisdictions.
- **Interoperability between national data protection legal frameworks and AI governance:** strengthen support to all countries to develop effective and interoperable national data governance frameworks. Develop consistency and interoperability between national data protection legal frameworks and AI governance efforts through mandating transparency obligations of AI system developers and deployers, data protection impact assessments, respect to data subjects' rights, enable data to flow with trust to mutual benefit, and lawful grounds for processing personal data as training data for AI systems.
- **International organizations' role in data protection regulation.** International organizations could lead in developing data protection laws that countries can adopt or adapt, coupled with technical and financial support for implementation. Alternatively, regional or multilateral organizations could pool to create cohesive data governance strategies.<sup>48</sup>
- **Contextualize solutions for data privacy.** Current data protection frameworks often fail to consider the unique needs and contexts of different regions and industries. More flexible and adaptive approaches are needed to ensure that data protection does not hinder innovation, particularly in sectors that are vital for development, for example in AI for SDG initiatives.

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<sup>48</sup> For example, the dedicated working group on data governance at the UN's Commission on Science and Technology for Development proposed in the GDC to provide recommendations towards equitable and interoperable data governance arrangements.



## 5. Conclusions

While various regulatory frameworks and technical standards exist, significant discrepancies in their requirements, adoption and implementation continue to create challenges. To ensure effective AI interoperability, a set of mechanisms for international compatibility, alignment and coordination is essential. This includes developing universal guidelines that can be reviewed, updated, and endorsed by international organisations, encouraging contextualised regional collaboration, aligning global, international, regional and national standards, creating compatible instruments, and strengthening multistakeholder engagement and capacity building.

Global multistakeholder cooperation and input are crucial for promoting inclusive governance frameworks and coordinating and AI interoperability efforts across different regions and parts of the world. This discussion paper emphasizes the importance of multistakeholder cooperation: open and accessible global initiatives like the IGF Policy Network on AI can help identify regulatory and standards gaps, provide inclusive policy recommendations and best practices, and support responsible AI development that prioritizes innovation, interoperability and human rights. Strengthening international cooperation and focusing on shared goals will be vital as we build an interoperable, safe, and sustainable global AI ecosystem.

# Appendix

## KEY CONCEPTS

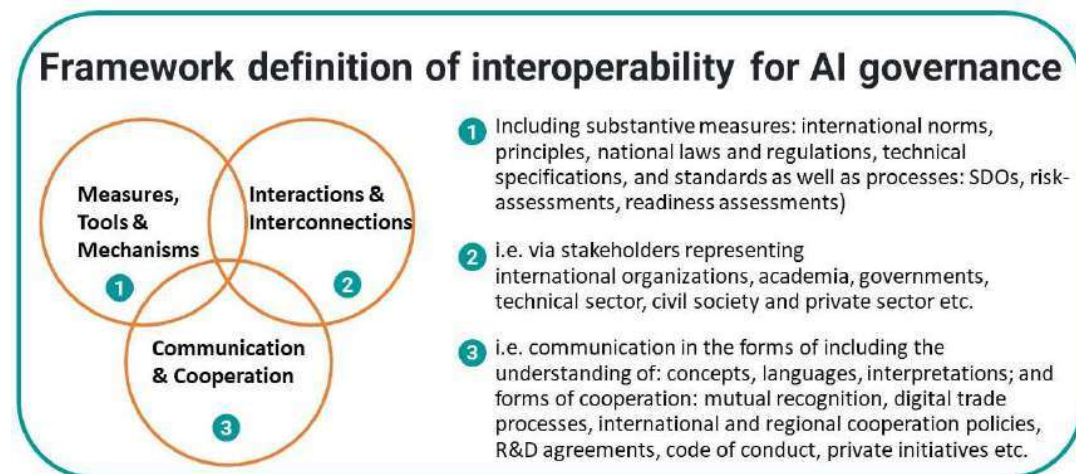
**AI Governance:** Processes, policies, regulations, and standards that govern the development, deployment, and operation of AI technologies to ensure their ethical, secure, and effective use.

**Global AI governance:** The process through which diverse interests that transcend borders are accommodated, without a single sovereign authority, so that cooperative action may be taken in maximizing the benefits and mitigating the risks of AI.

**Good Practices:** Practices that ensure AI systems are developed and used in ways that are ethical, responsible, and beneficial to society. For example: guidelines and strategies that mitigate risks.

**Interoperability:** Ability of both different AI systems to operate together as well as ability of AI governance frameworks to work together. For example, alignment and coordination of standards, policies and regulations across various jurisdictions. Key factor in ensuring seamless collaboration and data sharing between AI systems, platforms, and components.

Our group's definition of interoperability in AI governance brings together three key aspects: (1) the foundational tools, resources, measures and mechanisms involved in developing and implementing AI, (2) multistakeholder interactions and interconnections and (3) defining a consensus about the mechanisms to communicate and cooperate. All three are necessary to support a common understanding, interpretation and implementation of transborder governance of AI.



## AI governance and interoperability - highlights in 2024

**United Nations (UN) General Assembly** adopted two resolutions on AI in 2024. The resolution on international cooperation on AI capacity building<sup>49</sup> emphasises that AI should benefit humanity. The resolution encourages international cooperation in strengthening AI capacity building in developing countries. Another landmark resolution<sup>50</sup> promotes development of a regulatory and governance framework to ensure safe, secure and trustworthy AI. A symbiotic relationship between innovation and regulation is emphasised: AI development and application should be safe, reliable, serve the collective interest and protect human rights. Governance measures must be interoperable, flexible, adaptable, inclusive, and based on international law, meet the needs and capabilities of different countries, and ensure fair benefits worldwide.

**United Nations' Global Digital Compact (GDC)**<sup>51</sup> interoperability related measures and proposals include: collaboration between standards development organizations in interoperable AI standards; cooperation in developing representative high quality data sets, affordable compute resources, and local solutions; increasing access to open AI models and systems, opening training data and compute; facilitating AI model training and development; promoting interoperability between national, regional and international data policy frameworks. GDC proposes establishing a dedicated working group on data governance under the Commission on Science and Technology for Development, a multidisciplinary Independent International Scientific Panel on AI, and a Global Dialogue on AI Governance.

**UNESCO** has mapped Emerging Regulatory Approaches for AI across the world.<sup>52</sup>

**United Nations High Level Advisory Body on AI** has emphasised inclusivity, public interest, and alignment with established international norms and framework in global AI governance<sup>53</sup>. It proposes to enhance “Common Understanding” of AI capabilities and risks, “Common Ground” to establish interoperable governance approaches and “Common Benefits” referring for example to AI’s contribution in reaching the Sustainable Development Goals (SDGs). The High-Level Advisory Body proposes for example setting up a light and agile AI Office in the UN Secretariat to work as “glue” to unite AI initiatives as well as establishing an International Scientific panel on AI<sup>54</sup>.

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<sup>49</sup> The 78th session on [Enhancing international cooperation on capacity-building of artificial intelligence](#), July 2024

<sup>50</sup> [Reference] The resolution discusses AI in non-military fields.

<sup>51</sup> United Nations, [Pact for the Future, Global Digital Compact, and Declaration on Future Generations](#), September 2024

<sup>52</sup> UNESCO, [UNESCO launches open consultation to inform AI governance](#) news article, August 2024

<sup>53</sup> UN, [AI Advisory Body](#) information website, Accessed in September 2024

<sup>54</sup> UN AI Advisory Body, [Governing AI for Humanity](#), September 2024

**The African Union.** The Continental AI Strategy and the African Digital Compact<sup>55</sup> were endorsed in 2024, final approval is expected in early 2025. The Strategy emphasizes ethical AI use, minimizing risks, and leveraging opportunities for digital advancement. Key components of the AU's AI regulatory landscape include: AU Convention on Cybersecurity and Data Protection<sup>56</sup>; AfCFTA Digital Trade Protocol adopted in 2024; Collaborative frameworks through the Network of African Data Protection Authorities (NADPA) and other initiatives to harmonise data protection and build public trust in AI. National AI Frameworks (including Tanzania, Ghana, Egypt, Rwanda, Kenya, Nigeria, South Africa, and Mauritius) align with each nation's social and economic contexts and ethical standards. AU Digital ID Framework<sup>57</sup> aims to establish a unified and secure digital identity for African citizens to facilitate access to services and enhance socio-economic development.<sup>58</sup> Introducing AI technologies in low-resource environments could perpetuate current inequalities and further entrench the already skewed power from global socio-technical systems. The Continental AI Strategy highlights that effective and robust governance is crucial for ensuring that AI technologies serve the interests and development needs of African societies<sup>59</sup>. A robust governance regime for Africa will align with existing relevant national legislation and continental framework<sup>60</sup>.

**ASEAN.** The Association of Southeast Asian Nations (ASEAN) Guide on AI Governance and Ethics was published in 2024 and focuses on comprehensive alignment within ASEAN and fostering interoperability of AI frameworks across jurisdictions. The key components of alignment include Internal governance structures and measures; Determining the level of human involvement in AI-augmented decision-making; Operations management; and; Stakeholder interaction and communication.<sup>61</sup> A template for AI Risk Impact Assessment (AI RIA) is recommended to promote interoperability between ASEAN Member States in conducting AI RIA. An ASEAN Working Group on AI Governance will drive and oversee the alignment and interoperability in the region. Guides will be produced by it to address the governance of generative AI on developing a shared responsibility framework. One goal is to gather use cases that demonstrate practical implementation of the Guide.

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<sup>55</sup>AU, [African Ministers Adopt Landmark Continental Artificial Intelligence Strategy, African Digital Compact to drive Africa's Development and Inclusive Growth](#) press release, June 2024

<sup>56</sup>Malabo Convention. Less than 20 countries in the African continent have ratified it.

<sup>57</sup>AU, [AU Interoperability Framework for Digital ID](#)

<sup>58</sup>AU Interoperability Framework for Digital ID provides standards and protocols for different digital identity systems to communicate and work seamlessly together. It enables exchanging data securely and integration of ID systems across borders and sectors.

<sup>59</sup>AU, [Continental Artificial Intelligence Strategy](#), August 2024

<sup>60</sup>Ibid.

<sup>61</sup>ASEAN, [ASEAN Guide on AI Governance and Ethics](#)

**The Middle East (Arab States)**<sup>62</sup>. The League of Arab States is establishing Arab AI Council to coordinate AI initiatives across Member States and to promote knowledge sharing and resources to boost AI development in the region.<sup>63</sup> Both the United Arab Emirates (UAE) and Saudi Arabia have adopted a soft law approach to AI, with focus on guidelines and principles that reflect best practices and interoperability across regions. The UAE developed its AI Strategy for 2031 and established UAE Council for AI and Blockchain, issued AI Ethics and Principles and Generative AI Guidelines.<sup>64</sup> Dubai created "Digital Dubai" for policy oversight in IT. The Kingdom of Saudi Arabia formed the Saudi Data & AI Authority (SDAIA) and the National Strategy for Data & AI, and aims to be a leading AI economy by 2030. Other Middle Eastern countries are also advancing their AI capabilities: Qatar focuses on AI applications in education and smart city development, while Egypt leverages AI for agricultural advancements.<sup>65</sup> Bahrain and Oman are enhancing their financial services and government efficiency through AI.<sup>66</sup> These initiatives, combined with significant investments in AI education and training aim to build a robust AI talent pipeline and drive economic diversification across the region.

**Latin America.** The Santiago Declaration<sup>67</sup>, forged during a crucial AI summit of high-level authorities from across Latin America and the Caribbean (LAC) in October 2023, underscores a commitment to not only participate in, but to also actively influence the global dialogue on AI. The Declaration highlights a concerted effort from LAC countries to develop governance and regulatory frameworks based on interoperability standards. Columbia chairs an UNESCO committee to implement UNESCO AI Ethics in Latin America. The region's integration into the international technical landscape, coupled with its dependence on foreign investment and technologies, highlights the need for a regulatory approach that is adaptable to both global standards and local realities. Most countries in Latin America are drawing inspiration for their AI bills from the EU AI Act. However, Latin America must consider adapting and refining these ideas to fit its own regulatory, economic and technological landscape. International standards<sup>68</sup> play a pivotal role by providing well-established guidelines and benchmarks to help ensure Latin American AI technologies are globally compatible.

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<sup>62</sup>University of York, [AI regulation and policy landscape in the Middle East](#) news item, March 2024

<sup>63</sup>[Reference]

<sup>64</sup>[Reference]

<sup>65</sup>[Reference]

<sup>66</sup>[Reference]

<sup>67</sup> Cumbre Ministerial y de Altas Autoridades de América Latina y el Caribe, [Declaracion de Santiago](#). Babl, [Unpacking the Declaración de Santiago: A New Dawn for AI Ethics in Latin America and the Caribbean](#)

<sup>68</sup>Set by organizations such as the International Organization for Standardization, see: [ISO/IEC JTC 1/SC 42 Artificial intelligence](#)

**The European Union (EU).** The European AI Office<sup>69</sup> was established to oversee AI development across the EU and implementation of the EU AI Act regulation that entered into force in August 2024. The AI Office has engaged stakeholders to help prepare the first General-Purpose AI Code of Practice.<sup>70</sup> It promotes the EU's AI approach internationally, fosters international cooperation, and supports the development of international agreements. Interoperability discussions include technical standards, transparency, and compliance.<sup>71</sup>

**Council of Europe (CoE) AI Treaty**<sup>72</sup>. Interoperability discussions include technical standards, transparency and accountability of AI systems and compliance. Other proposed efforts include international cooperation in exchanging relevant and useful information and strengthening cooperation to prevent and mitigate risks and adverse impacts on human rights, democracy and the rule of law.

**EU, UK & USA** have set up joint efforts to promote common understanding of competition risks and principles in generative AI foundation models and AI products.<sup>73</sup>

**The USA's** Executive Order on AI, published in October 2023, mandates increased AI engagement, accelerated AI standards development, and safe, responsible AI deployment. USA aims to lead global conversations and collaborate on critical infrastructure standards. National Institute of Standards and Technology (NIST) has developed Trustworthy and Responsible AI standards<sup>74</sup> that focus on terminology, developing metrics and measurements, digital content origins, risk management, security, privacy as well as incident response.

**China.** In 2024, China set up two AI Safety and Governance Institutes and Chinese AI Safety Network<sup>75</sup> as platforms for dialogue, mapping, interoperability, and collaborations. Newly published AI Safety Governance Framework<sup>76</sup> promotes broad consensus on a global AI governance system. It unveiled the AI Capacity-Building Action Plan for the Benefit of All<sup>77</sup>. China's AI domestic interoperability approach emphasizes technical standardization, open platforms and data sharing, and cross-domain application demonstrations in fields that often require interoperability between different systems and

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<sup>69</sup>European Commission, [Commission establishes AI Office to strengthen EU leadership in safe and trustworthy Artificial Intelligence](#) news item, May 2024

<sup>70</sup>European Commission, [The kick-off Plenary for the General-Purpose AI Code of Practice took place online](#), September 2024

<sup>71</sup>European Commission, [European AI Office](#) information web page (Accessed in September 2024)

<sup>72</sup>CoE, [The Framework Convention on Artificial Intelligence](#)

<sup>73</sup>CMA, [Joint statement on competition in generative AI foundation models and AI products](#), July 2024

<sup>74</sup>NIST, [A Plan for Global Engagement on AI Standards](#), July 2024

<sup>75</sup>Chinese AI Safety Network, [Chinese AI Safety Network](#) information website

<sup>76</sup>[Check reference] <https://www.tc260.org.cn/upload/2024-09-09/172584919284100989.pdf>

<sup>77</sup>Ministry of Foreign Affairs of China, [AI Capacity-Building Action Plan for Good and for All](#), September 2024



platforms, for example healthcare, education, and transportation.<sup>78</sup> International interoperability focuses on AI R&D and application; establishing open-source and inclusive AI communities to share best practices and knowledge; AI capacity-building programs tailored for developing countries; diverse AI language and data resources; developing data Infrastructure to fair and inclusive use of global data. AI policy synergy and joint risk management, shared mechanism for AI testing, evaluation, certification, and regulation<sup>79</sup>.

## PNAI Approach to AI Interoperability

Interoperability is often understood as the ability of different systems to communicate and work seamlessly together, this may require there are clear agreements about how to deal with differences across borders. Interoperability framework allows various regulatory frameworks to coexist and communicate, which is essential for cross-border AI applications. This concept is vital in balancing global integration with domestic regulatory autonomy. The development of international agreements, such as the Global Digital Compact highlights ongoing efforts to establish a common framework while accommodating diverse domestic approaches. Such communication includes different levels of integration (technical, conceptual, data format and structure, functionality, etc). We argue that more emphasis should be placed in analysing if and how the different initiatives to regulate and govern AI across the world could collaborate and through that become more impactful.

## Key Gaps of AI Interoperability

The rapid development of AI technologies has already begun to exert considerable influence across sectors, including, healthcare, justice, education, cyber-physical systems, autonomous vehicles, employment, and personal privacy. The need for AI integration across the ethical, legal, technical and public policy issues necessitate an examination of existing policies and mechanisms required to address common challenges on a global scale. Without effective governance, the societal implications of AI will only deepen as the technology continues to evolve. Despite current developments, significant gaps remain in achieving effective AI governance interoperability.

One major challenge is the absence of a globally accepted reference framework that can harmonize regional and multilateral efforts. While individual states and global organizations have developed regional and multilateral frameworks, the lack of a unified global approach results in inconsistent policies and practices. This inconsistency is compounded by the content of many

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<sup>78</sup>[Check reference] **四部门关于印发国家人工智能产业综合标准化体系建设指南（2024版）的通知; Article 15, 科技部等六部门关于印发《关于加快场景创新以人工智能高水平应用促进经济高质量发展的指导意见》的通知\_国务院部门文件\_中国政府网**

<sup>79</sup>[Check reference] Article 4, **中华人民共和国和法兰西共和国关于人工智能和全球治理的联合声明** <https://english.cctv.com/2024/07/05/ARTIEe611WN5NQZQi3m7K9c1240705.shtml>

interoperability policies, which often lack clear definitions, frameworks, and measures, that are essential for practical implementation.

The challenge of interoperability is further complicated since many governance proposals originate from industrial, intergovernmental organisations and regional bodies (the UN, the EU, the US, China, and ASEAN governments) while lacking input from the global south. These initiatives often overlook the realities and challenges faced by the Global South. The results may increase disparity in how AI technologies and governance may develop globally, leading to an uneven distribution of benefits.

Additionally, the lack of coordination among regulatory approaches creates further obstacles. Global solidarity and resource-sharing mechanisms are not being adequately leveraged to ensure that AI's benefits are inclusive. Thus, regions that may lack the infrastructure or resources to fully engage in AI development and governance, may risk further marginalization in the global digital economy.

Effective AI interoperability requires the active collaboration of multiple stakeholders, including governments, the private sector, technical community and civil society. However, current initiatives often fall short in terms of comprehensive stakeholder involvement, particularly from underrepresented and marginalized groups. Increased engagement from these groups, supported by initiatives from global organizations like the UN, could help bridge these gaps through creating more inclusive and effective governance structures.

Significant risks associated with a lack of technical incompatibilities as AI systems develop based on different regional standards, platforms, and protocols. This divergence may inhibit cross-border data flows for algorithm training or technical collaboration, resulting in difficulties for international companies to navigate these varying standards. A model for addressing such challenges through providing a more unified approach to AI governance is provided by the Interoperable Europe Act<sup>80</sup>

Ethical inconsistencies may emerge due to the lack of a shared understanding of AI's societal functions and implications. Without a common framework, differing ethical principles may lead to fragmented approaches to the governance of AI systems. Similarly, the lack of semantic interoperability, which is essential for ensuring that different systems can consistently interpret and use data, poses a significant barrier. The development and adoption of common ontologies and taxonomies will be crucial in creating a shared language for AI applications and ensuring that systems can effectively communicate across borders.

The absence of comprehensive AI interoperability frameworks threatens to stifle innovation and erode public trust in AI systems. While interoperability is necessary for fostering regulations on transparency, explicability, and accountability, there is also a risk that efforts to achieve consensus may result in watered-down standards. This could compromise critical elements such as human rights if such considerations are not carefully integrated into the regulatory process.

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<sup>80</sup>[Check reference][Interoperable Europe act: Council adopts new law for more efficient digital public services across the EU - Consilium](#)



## **1. Methodology: framework for comparing AI interoperability Initiatives**

The key patterns for comparison include:

1. Objectives of interoperability: This refers to the intended goals of the interoperability framework, such as promoting cross-border data flows, enhancing regulatory coordination, or ensuring the ethical alignment of AI systems.
2. Principles and values of interoperability: This pattern focuses on the foundational principles and values underpinning each interoperability initiative. These may include transparency, accountability, inclusivity, fairness, and respect for human rights, which shape the design and implementation of the interoperability framework.
3. Top-down vs. bottom-up approaches: Interoperability can emerge through different pathways. A bottom-up approach may develop organically, as countries learn from each other and replicate best practices, often through multistakeholder collaborations. Conversely, a top-down approach may involve deliberate decisions by governments or international institutions, which establish a "meta-framework" to coordinate and support domestic frameworks.
4. Binding nature: Interoperability frameworks vary in their legal force. Some manifest as non-binding declarations, taxonomies, or mutual recognition agreements, while others take the form of binding treaties or standards.
5. Level of integration: Interoperability models differ in the degree of specificity they provide. Some frameworks, such as the Internet & Jurisdiction toolkits, offer highly detailed guidelines on how interoperability can be implemented. Others are more flexible and general, aiming for compatibility rather than strict alignment across jurisdictions.
6. Components of interoperability frameworks: Interoperability is not limited to technical standards. A comprehensive framework may include legal, organizational, semantic, and technical dimensions. Addressing all these components is essential to ensure the continued functionality of AI systems in a globally interconnected environment.

## **2. Primary Objectives States Want to Achieve for Data and Privacy Interoperability**

Five primary objectives have identified to address the challenges of global data privacy and interoperability:

**Prevent Data Protection Disparities and Legal Arbitrage:** Establish uniform standards to ensure consistent protection of personal data across all jurisdictions, eliminating vulnerabilities caused by regional differences.

**Harmonize Regulatory Environments:** Reduce fragmentation in global data privacy regulations by fostering alignment between regulatory bodies and promoting common standards, thereby simplifying compliance and enhancing protection.

**Enhance Transparency:** Ensure clear and accessible information about data collection, usage, and protection practices, empowering individuals to make informed decisions and hold organizations accountable.

Improve Consumer Redress Mechanisms: Implement and communicate clear processes for consumers to file complaints and seek resolutions when their data is mishandled, while also reporting on these issues to identify areas needing stronger protections.

Cross-Border Interoperability for AI Training Data Sharing: Create mechanisms that allow secure cross-border sharing of training data, particularly in high-risk AI systems (e.g., healthcare, financial systems), while respecting national data protection laws.<sup>4</sup> Best practices of compatibility mechanisms

Compliance with internationally recognized privacy protection standards

the Asia-Pacific Cooperation (APEC) Cross-Border Privacy Rules (CBPR). The participating companies abide by the personal data protection rules in the APEC Privacy Framework. This mechanism does not change the domestic personal data legislation of each country but requires the participating economies to sign the “Cross-Border Privacy Enforcement Agreement” to facilitate law enforcement.<sup>81</sup>

Sharing an understanding of principles and terminology by EU, UK and USA

The three jurisdictions developed a Joint effort on competition in generative AI foundation models and AI products in July 2024 to share concrete understanding on Risks to competition and Principles for protecting competition in the AI ecosystem<sup>82</sup>.

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<sup>81</sup> [APEC Cross-border Privacy Enforcement Arrangement \(CPEA\)](#)

<sup>82</sup> [Joint statement on competition in generative AI foundation models and AI products - GOV.UK](#)

## About the Policy Network on Artificial Intelligence

The Policy Network on Artificial Intelligence (PNAI) addresses policy matters related to artificial intelligence and data governance. It is a global multistakeholder effort hosted by the United Nations' Internet Governance Forum, providing a platform for stakeholders and changemakers in the AI field to contribute their expertise, insights, and recommendations. PNAI's primary goal is to foster dialogue and contribute to the global AI policy discourse. Participation in and contribution are open to everyone.

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