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# Who leads AI standardization? Geopolitics in a Fragmented Standards Landscape

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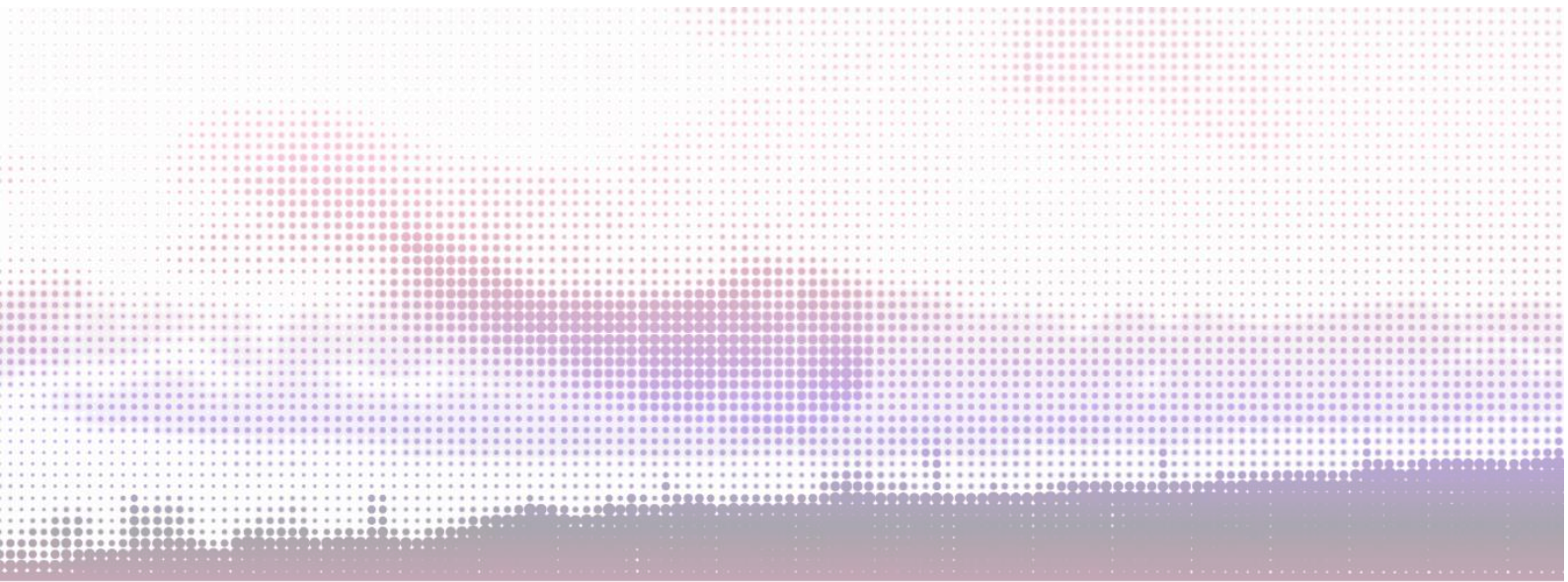
## Abstract

As artificial intelligence governance increasingly relies on technical standardization, understanding who shapes these standards has become central to AI governance around the globe. This article provides the first cross-organizational empirical study of leadership in AI standardization, across six major standards bodies— CEN-CENELEC, ETSI, IEEE, IETF, ISO/IEC and ITU-T. Using a longitudinal dataset of 819 leadership positions (2023-2025), interviews with 13 standards developers, and social network analysis, we map the individuals and organizations occupying positions of authority in AI standardization. Our results challenge prevailing assumptions that leadership positions matter more than long-term reputation and resources for strategic influence. Major AI labs (OpenAI, Meta, Google) are largely absent from leadership roles, contradicting "Big Tech capture" narratives, while Chinese telecommunications companies dominate ITU-T, evidencing deliberate coordination. In contrast, European and North American actors prioritize venues producing legally binding standards under the EU AI Act, although there is no evidence to support a coherent U.S.-led strategy for standards' engagement. Overall, the AI standards landscape is fragmented with minimal cross-SDO collaboration and stark geopolitical divisions. These findings challenge current narratives about power in standardization and highlight the need to scrutinize AI standards development as it increasingly underpins emerging regulatory regimes.

**Keywords:** Artificial intelligence, AI, AI Act, standards, standards development organizations, SDO, technical standardization, CEN-CENELEC, ETSI, ISO, IEC, ITU, IETF.

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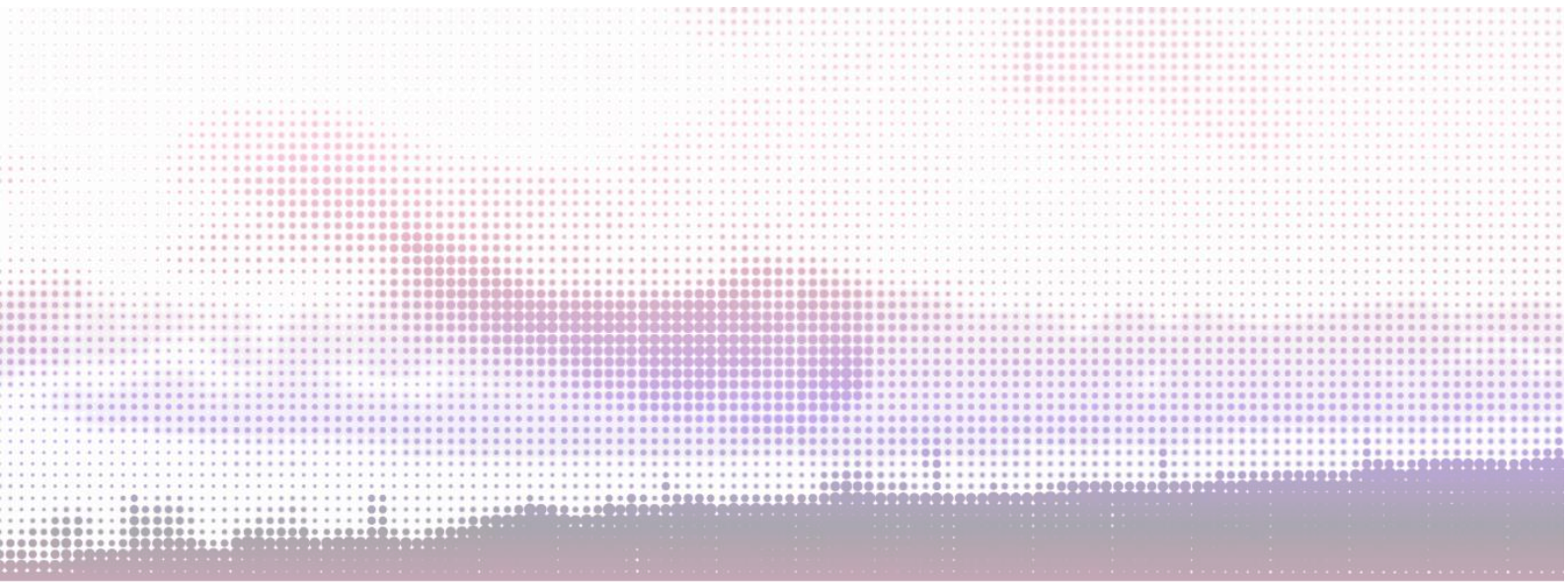
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# 1. Introduction

Artificial Intelligence (AI) governance and regulatory frameworks increasingly rely on technical standards to help ensure that AI technologies are safe, effective, and ethical. With work on AI standardization beginning in 2017, there are now over 800 technical standards related to AI, either published or under development (Hennessy & Mügge, 2026). The need for such standards is both market driven, and government driven. Technical standards propose solutions to shared problems, and in AI they cover topics such as technical definitions, concepts, hardware and software specifications, issues related to cybersecurity, smart networks and interoperability. In line with the socio-technical nature of standards (Yates & Murphy, 2019), AI standards also have ethical and social dimensions, delving into fundamental rights issues such as system safety, data governance, and trustworthiness (including algorithmic bias and discrimination). Against the backdrop of heightened geopolitical tensions, understanding who writes these standards—and who is absent—becomes a central question of global AI governance.

As many governments hasten to regulate AI—with the most notable example being the European Union’s Artificial Intelligence Act (AIA)—technical standards have acquired a regulatory function that moves them beyond soft governance tools and into the realm of *de facto* or even *de jure* rulemaking. Rather than being seen as apolitical or neutral, standardization is increasingly politicized. Competition and contestation within these private entities are rife, as a plurality of actors vie to shape rules to suit their interests (Rühlig, 2021, Lee et al. 2022). While states have the ability to influence or orchestrate standard setting to a certain degree (Abbott et al. 2021), they have become wary of standard setters on two fronts: firstly, that they may become overly dominated or captured by commercial actors (European Commission, 2022); secondly, there is also an increasing awareness of geopolitical rivalries playing out in SDOs, in particular as the US and EU recognize China’s growing footprint in the sector (The White House, 2023, 2025, Rühlig, 2021, Teleanau, 2021).

Yet the institutional setup for defining these foundational norms is fragmented, opaque, lacking transparency and accountability (Smuha & Yeung, 2024; Ebers, 2022; Harcourt et al., 2020). A growing literature argues that leadership positions in standard-setting organizations can offer strategic advantages (Ingvarson, 2025; Cantero-Gamito, 2023, Wu and De Vries, 2022; Baron & Kanevskaia, 2021; Rühlig, 2021). Working Group chairs, convenors, rapporteurs, and editors guide meeting agendas, adjudicate consensus, shape the drafting of technical text, and manage disputes. Scholarship suggests that states and firms actively compete for such roles to influence outcomes (van de Kaa & de Bruin, 2015; Baron et al. 2019),

steer policy trajectories, and embed national or commercial priorities into ostensibly neutral technical rules (Fägersten & Rühlig, 2019). Existing work on leadership in AI standardization is nascent; to date based on case studies or focused on single organizations (Barrett, 2024, Cantero-Gamito, 2023). To the best of our knowledge, no empirical research has examined leadership across the ecosystem of AI standardization, compared leadership patterns across SDOs, or analysed how influence is distributed over time.

This article seeks to investigate the interactions of the most influential SDOs in AI standardization, including the interactions both *within* and *between* the different SDOs involved. We ask a series of interrelated questions: Who leads AI standardization? How is influence exercised by public and private actors? And how does geopolitical competition shape regulatory outcomes?

To answer these questions, we build on theories of transnational business governance interactions literature (Eberlein et al. 2014, Fransen et al. 2019) which investigates how various schemes apply non-state authority to govern business conduct across borders. Cross-institutional research on AI standardization is nascent, and empirical information on individual and organizational membership is difficult to find. In the absence of full membership lists of people and organizations participating in international AI standardization, we construct a unique longitudinal dataset of 819 leadership positions across the six dominant AI SDOs, capturing the 2023 and 2025 periods. We identify not only who holds these roles, but also their organizational affiliation and geographic distribution. To understand the dynamic interactions amongst SDOs involved in AI standardization, we employ social network analysis to examine how leaders and organizations are connected across SDOs. We triangulate these findings with 14 semi-structured interviews with standards developers, committee chairs, and participants across Europe, North America, and Asia.

Our findings challenge several prevailing assumptions. First, while leadership positions are often assumed to confer strategic advantage, our data suggest a more complex picture. Interviews with standards developers reveal that formal titles may matter less than long-term reputation, technical expertise, and the resources to sustain continuous participation. Second, the organizational composition of AI standardization leadership defies simple narratives of "Big Tech capture." Major AI labs developing frontier models—OpenAI, Anthropic, Meta, Google—are largely absent from working group and committee leadership roles, while Chinese telecommunications companies dominate certain venues, such as ITU-T. Third, the landscape is characterized not by convergence or coordination but by fragmentation and forum-shopping, with minimal overlap in participation across SDOs and clear patterns of geopolitical concentration. This fragmented eco-system can create opportunities for institutional bias with standards reflecting the interests of those involved (Genschel, 1997).

Moreover, as regulatory frameworks like the EU AI Act increasingly rely on technical standards for implementation, understanding who shapes these standards—and who is absent—becomes essential for assessing the legitimacy, inclusiveness, and effectiveness of AI governance itself.

This article proceeds as follows: the following section provides a brief overview of the literature on transnational business governance and approaches to study the interactions between actors within this space (Eberlein et al. 2014, Fransen et al. 2019). We then provide the empirical background of international AI standardization. Section three outlines our methodological approach detailing case selection, data, and research methods. Section four outlines our findings and section five concludes.

## 2. Private governance in the shadow of public interference

Technical standard-setting can be a particularly important form of rulemaking in the context of transnational governance (Brunsson et al. 2012). Developed by private actors and in the absence of globally agreed regulation, (technical) standards might often be the only rule available and adhered to internationally (Ahrne & Brunsson, 2006; Djelic & Sahlin-Andersson, 2006). This can be especially salient in sectors facing significant global governance challenges – such as AI governance – or in the face of heightened geopolitical tensions where there is a lack of international agreement on governance problems and solutions. SDOs and the standards they produce can fill “institutional voids” (Doh et al., 2017; Khanna and Palepu, 2013) and provide governance frameworks in the absence of government regulation. For firms, this may help to organize markets and reduce costs and uncertainty (Akerlof, 1970, Büthe & Mattli, 2011) while for legislators, SDOs and standards can often provide the expertise and agility which traditional legislative processes lack (Cihon, 2019).

In an increasingly globalized and interdependent world, these transnational institutions are sites of contention for a multiplicity of actors (Farrell & Newman, 2016), with standardization regimes having previously been characterized as fragmented (Genschel, 1997) and lacking convergence (Fransen, 2007). Furthermore, SDOs produce a multiplicity of standards or “standards markets” (Reineke et al. 2012) which might compete, compliment or overlap with one another. In a polycentric regulatory sphere, then, a multiplicity of actors might be seen as positive and complimentary, where actors share information and learn from one another to produce better standards (Overdevest, 2010). In technical standardization

Genschel (1997) argued that fragmented regimes might be as or more efficient than centralised regimes due to smaller and less diverse groups which helps to speed up decision-making.

However, scholarship on international standards more generally highlights the negative effects of such multiplicity, where confusion and uncertainty arise (for both industry and the end-consumers which they affect) due to competing standards (Fransen, 2015; Fransen et al. 2019, Marx, 2013). In fragmented regimes, SDOs can be characterized by institutional bias (Genschel, 1997) where neither individuals nor organizations will have the resources or capacity to participate everywhere and therefore will strategically choose where to engage (Genschel, 1997). Actors will then exploit this diversity to pursue their own goals and may engage in forum shopping, regulatory shifting or other strategic actions (Overdeest & Zeitlin, 2012). At committee level, studies have shown that the internal politics of committees can be co-opted by vested interests and undermine legitimacy (Cargill & Bolin, 2007; Simcoe, 2007)

The nascent field of AI standardization is characterized by fragmentation with multiple SDOs, – as we shall see below – competing and cooperating to shape AI standards and norms. However, the institutional setup for defining these norms at both organization level and committee level is opaque, lacking transparency and poorly understood. For example, membership lists of sub-committees aren't public, nor are meeting minutes. The standards themselves are often held behind paywalls while information on cooperation amongst different SDOs working on the same topic is severely limited. In order then to understand potential for institutional bias or how power is concentrated, we must first understand which actors are present in these organizations. Only then can we start to interrogate influential actors and the strategies used to shape outcomes, and ultimately to shed light on the performance of individual private governance approaches to AI and their ability to design effective interventions (Eberlein et al. 2014).

## 2.1 The fragmented AI standards regime

In AI, six bodies dominate this ecosystem:<sup>1</sup> the International Standards Organisation, the International Electrotechnical Commission (often jointly known as ISO-IEC), the International Telecommunication Union's Telecommunication Standardization Sector (known as ITU-T), the Institute of Electrical and Electronics Engineers Standards Association (IEEE), and the Internet Engineering Task Force (IETF), alongside European bodies, the European

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<sup>1</sup> As recognized by European Commission Joint Research Centre (ECJRC, 2021) in its AI standardization landscape report, cross-referenced with NIST's summarized landscape of AI standardization (NIST, 2025) and the AI standards exchange database <https://aiforgood.itu.int/ai-standards-exchange/>. See section 3 below.

Committee for Standardization and the European Committee for Electrotechnical Standardization (jointly known as CEN-CENELEC) and the European Telecommunications Standards Institute's (ETSI). Each one has complex hierarchical governance structures in which standards work is delegated to various sub-committees and working groups. In ISO-IEC, work on AI is undertaken by the Joint Technical Committee (JTC) 1 and its sub-committee SC 42 (hereafter "SC 42"). It consists of 51 participating members and 26 observing members, including national standards bodies representatives from the US, China, Saudi Arabia, the Russian Federation, and European countries. Its work focusses on foundational, engineering and governance aspects of AI systems. In the ITU, standardization is carried out by ITU-T Study Groups (SGs), which produce the ITU-T Recommendations, who organize their work primarily in the form of "Study Questions." Work on AI currently spans eight (out of ten) SGs, covering operational aspects of AI systems as well as sector specific issues such as Environmental, Sustainability and Healthcare AI. However, the majority of work on AI is carried out in SG13 – Future networks. In CEN-CENELEC, meanwhile, those with overall responsibility for AI standards involve Joint Technical Committee (JTC) 21 on AI and its five sub-working groups (hereafter "JTC 21"), which focus on operational aspects, engineering aspects, foundational and societal aspects, and cyber-security. Both ISO-IEC and CEN-CENELEC have nation-based membership, where each paying country has a single standards body that represents their nation as a National Committee. ITU operates through a hybrid membership model comprising nation states alongside over 950 private-sector, academic, and organizational entities, with countries participating both through governments and private industry rather than national standards bodies.

On the other hand, the IEEE and the IETF have open membership models, meaning anyone (an individual or organization) can join. IEEE was one of the first SDOs to begin work on AI standards in 2017/18 as part of its autonomous and intelligent systems (AIS) portfolio. Standards are then developed through a series of working groups, committees, and societies, which are overseen by the IEEE SA Standards Board. The IETF only recently began work on AI standards in its working group AI Preferences (AIPREF), established in November 2024 to standardize the expression of preferences about how "content is collected and processed for AI model development, deployment, and use."<sup>2</sup>

Similarly, the European Telecommunications Standards Institute (ETSI) follows an open membership model whereby different types of entities-including private companies, research entities, academia, government, and public bodies and civil society organizations-can all participate. Of the six SDOs under study here, ETSI arguably has the most complex governance framework, with AI standardization projects scattered across 15 sub-groups, including

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<sup>2</sup> See <https://datatracker.ietf.org/wg/aipref/about/>

technical committees (TCs), special committees (SCs), partnership projects, industry specification groups (ISGs), and an operational coordination group (OCG),<sup>3</sup> each containing different working-groups.

## 2.2 Varieties of standards

Amongst these SDOs, standards work is highly unevenly distributed. As of August 2025, there were 805 AI-related standards developed by international SDOs either published or under development. ITU-T leads this work by a significant margin, accounting for 57.5% of all standards, followed by IEEE with 20.3%, and ISO/IEC with 10.2%. The European standards bodies—CEN-CENELEC and ETSI—together represent roughly 12% of the total, while the IETF remains a recent entrant to the AI field with only one identified standard (see Table 1).

SDO	# of standards	% of total standards
ITU-T	463	57.52%
IEEE	163	20.25%
ISO/IEC	82	10.19%
ETSI	56	6.96%
CEN-CENELEC	40	4.97%
IETF	1	0.12%
<b>Total</b>	<b>805</b>	<b>100.00%</b>

**Table 1. Proportion of international AI standards published or under development in international SDOs as of August 2025.<sup>4</sup>**

<sup>3</sup> As described in Appendix 8.1 below.

<sup>4</sup> This breakdown of standards is based on information provided in the [AI standards exchange database](#), cross-referenced with SC 42’s website (<https://www.iso.org/committee/6794475.html>), on the current available workplan from [JTC 21](#) (and this workplan was also cross-referenced with a detailed dashboard provided by the Chair of JTC 21 in late 2024 (see [https://www.linkedin.com/posts/sebastianhallensleben\\_status-dashboard-jtc21-european-ai-standardisation-ugcPost-7235665871937970177-VuUG/](https://www.linkedin.com/posts/sebastianhallensleben_status-dashboard-jtc21-european-ai-standardisation-ugcPost-7235665871937970177-VuUG/))). While ETSI standards were downloaded from ETSI’s open-source catalogue using the keyword “Artificial Intelligence,” ([etsi.org/standards-search](https://etsi.org/standards-search)). All totals are

As alluded to above, these standards come in various shapes and sizes, being voluntary, providing technical reports and guidance, being *de facto* imposed by market leaders or even becoming mandatory, effectively *de jure*, when mandated as part of a legislative process. In the latter case, (at present) 31 AI standards developed by the ESOs will become Harmonized European Standards (known as hENs) as part of the Artificial Intelligence Act (AIA), which is due to come into effect in 2027. These standards are developed through close collaboration between CEN-CENELEC and ISO-IEC through the Vienna and Frankfurt agreements. So, while ISO-IEC’s and CEN-CENELEC’s contributions are smaller in scale, they are strategically critical, particularly in the case of CEN-CENELEC. Furthermore, CEN-CENELEC’s focus lies heavily on AI ethics, governance, and trustworthiness, supported by work on foundational terminology and engineering. This gives CEN-CENELEC a distinctive regulatory role among SDOs: it functions not only as a technical body but also as a legislative enabler, translating ethical principles and risk management obligations into enforceable conformity assessment mechanisms.

SDO	Governance Model	Sub-committee/WG	Primary Focus Areas
CEN-CENELEC	National membership model	JTC 21	Ethics, Foundational, Compliance
ETSI	Open membership	15+ sub committees	Cybersecurity, Infrastructure
IEEE	Open membership	Multiple sub-committees under AIS	Engineering, Ethics, Data Standards
IETF	Open membership	AIPREF	Foundational (nascent activity)
ISO/IEC	National membership model	JTC1/ SC42	Foundational Concepts, Governance
ITU-T	Hybrid membership model	Multiple SGs, e.g. SG 13	Infrastructure, Engineering, Sectoral AI

**Table 2. AI-related focus areas across 6 SDOs**

It is important to note that all six of these organizations are intertwined to varying degrees, but very little is known about their inter-connectedness. In Europe, Regulation No 1025/2012, which governs European standardization, formally recognizes CEN, CENELEC and

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approximations based on publicly available information and any errors are the authors own. A more detailed analysis & methodology will be available in Hennessy (forthcoming) “Varieties of (AI) Standards” available in 2026.

ETSI as the three bodies responsible for developing European Standards.<sup>5</sup> Under this regulation, ISO, IEC, and ITU – are also recognised and prioritized for international standards cooperation. Furthermore, ISO and IEC benefit from additional tie-ins to EU policy through the Vienna Agreement and the Frankfurt Agreements, enabling closer collaboration between ISO/IEC and CEN/CENELEC. In addition to formal recognition, the work of SC 42 (ISO/IEC) and JTC 21 (CEN-CENELEC) is highly aligned and includes overlap of national experts. Both WGs also have liaisons and observer members in ITU-T to keep up to date with ongoing work. However, beyond these ties, it is difficult to understand the levels of connectivity these organizations have with one another, particularly in the case of IEEE and IETF.

These bodies do not merely produce technical specifications. They shape conceptual, value-laden definitions such as “trustworthiness,” “safety,” and “risk,” (Meijer et al. 2023, Tartaro, 2024) and provide authoritative guidance on organizational practices, testing, auditing, and system governance (Wiarda et al. 2025). As AI governance increasingly relies on standardization to translate ethical or legislative principles into enforceable procedures, the individuals and organizations within these bodies matters. Furthermore, CEN-CENELEC and ISO-IEC occupy a strategically critical role in AI standardization whereby a number of standards will become quasi-law as part of the AIA. Therefore, who writes standards and who wields political power both within and between these organizations is important, particularly as geopolitical tensions continue to bear down on the sector and those attempting to govern it.

## 2.3 The geopolitics of standard-setting

Geopolitical tensions have prompted states to pay more attention to standardization processes (Zúñiga et al. 2024). China, in particular, has made technical standardization a political priority (Seaman, 2020), with the Xi administration quietly pushing for Chinese nationals to occupy key leadership positions and vote as a block on standards proposals (Russel & Berger, 2021). The explicit aim of the Chinese government is to ensure that China moves from being a rule taker to a rule maker in technical standard setting (Gong & Zhang, n.d.). Thus, the Chinese leadership has decreed that third-tier companies make products, second-tier companies make technologies, and first-tier companies make standards (Ferreira

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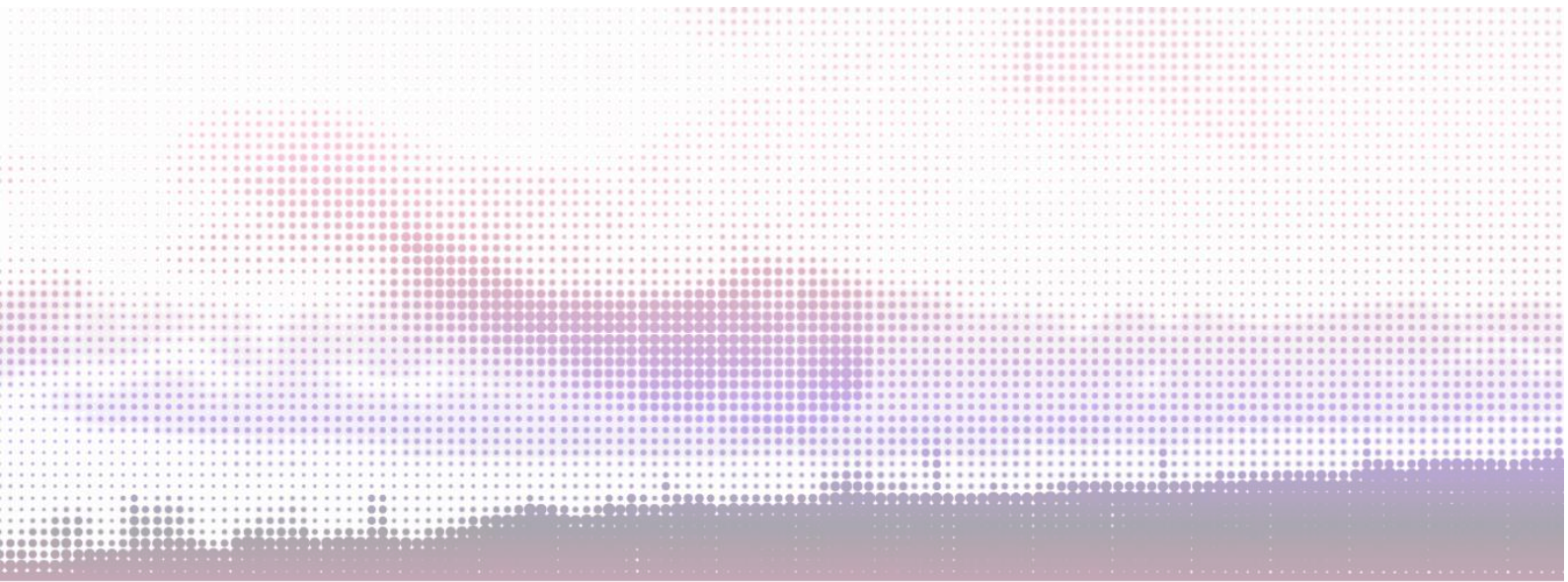
<sup>5</sup> REGULATION (EU) No 1025/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council. <https://eur-lex.europa.eu/eli/reg/2012/1025/oj/eng>

Gomes et al. 2025). In the past, China has made use of national champions (including Huawei) to shape global standards in sectors such as 5G, solar, and rail (Gong & Zhang, n.d.).

The United States and the European Union, who are traditional leaders in technical standard setting, have responded by approaching standard setting more strategically as well, increasing scrutiny and monitoring (Zúñiga et al. 2024). In 2023, the U.S. government identified challenges to its longstanding leadership in technical standardization and to the core principles of international standard setting – pinning the responsibility for these challenges on China (The White House, 2023). Wariness of geopolitical manipulation remains a pressing concern for the Trump administration, which has explicitly acknowledged that technical standards matter for geopolitical advantage and specifically for who wins the AI race (The White House, 2025). Both the National Institute of Standards and Technology (NIST) and American National Standards Institute (ANSI) have issued plans for global, strategic engagement in standardization (NIST, 2024) with the latter calling for “robust” U.S. engagement in international standardization to prevent any manipulation of the system (ANSI, 2025, pp.3-7.).

The European Commission has also set out to become more assertive in the way it participates in standardization (Hennessy & Mügge, 2026), with its 2023 standardization strategy proposing a series of actions aimed at “ensuring European leadership in global standards,” (European Commission, 2022, February 2, p.7). The strategy came in response to the EU’s heightened awareness of state coordination in standardization (European Parliament, 2021) and uneven interference from “corporate interests” (European Commission, 2022), particularly in ETSI. More recently, European standardization has been dogged by allegations of capture by Big Tech (Corporate Europea Observatory, 2025) culminating in an ongoing inquiry at the European Ombudsman into transparency, inclusiveness and accountability in AI standards (European Ombudsman, 2025).

AI standardization specifically has been highlighted as a sector particularly bedeviled by geopolitical tensions and in-fighting (Bertuzzi, 2025) but there is little to no empirical evidence to support these claims. Furthermore, while states have the ability to influence or orchestrate standard setting to a certain degree (Abbott et al. 2021), they have no formal voting role in SDOs and therefore must rely on alternative strategies to influence standards outcomes. In such a contested space therefore, the puzzle remains as to how both states and corporate interests wield influence in AI standards committees and how successful these strategies are in practice.



## 2.4 Leadership positions

At an organization level, SDOs and the sub committees that work on developing and drafting AI standards are made up of technical experts who are private actors, often individuals representing corporations, or geopolitical rivals, with very little democratic or judicial oversight, or participation from academics or civil society (Ebers, 2022, Cuccuru, 2019). With governments' increased interest in AI standardization, one strategy to gain influence is to ensure that domestic companies hold leadership positions within SDOs, which is reflected in national AI strategies. China's New Generation Artificial Intelligence Development Plan (2017) makes this link explicit, instructing national firms to "participate in and lead the formulation of international standards" for AI technologies. The policy treats standardization as a key vector of technological sovereignty and export competitiveness, positioning leadership in SDOs as a national goal. Similar ambitions appear in the United States, where the National Standards Strategy for Critical and Emerging Technologies (2023) and the earlier NIST Plan for Federal Engagement in AI Standards (2019) call for removing barriers to private-sector participation and expanding U.S. leadership roles in international AI standards bodies.

At committee level, the power and influence of those holding leadership positions have often been interrogated in standardization literature (c.f. Ingvarson, 2025, Cantero-Gamito, 2023, Wu and De Vries, 2022, Baron & Kanevskaia, 2021, Ruhlig, 2021). While each organization has its own rules and procedures for leadership elections, appointments and term limits, the common thread is the individual's neutrality and commitment to consensus. For instance, CEN-CENELEC's internal regulations state that the chair of a technical committee is subject to "strict impartiality and must divest themselves of their national point of view," in their duties conducting meetings (CEN-CENELEC, 2025, p.14). In ETSI's "*Chair's Guide*," the chair's roles and responsibilities are to promote an efficient working of the project group, cooperation with co-leaders, in adherence with ETSI's directives and policies, working with impartiality and the commitment to consensus.<sup>6</sup>

In theory, therefore, committee chairs and working group leaders are seen as neutral arbiters of consensus. In practice however, it has been argued that they hold considerable influence: they are responsible for the overall management and administration of the committee concerned, serve as the first stage of appeal or investigation processes into breaches of SDOs' procedural rules, and take decisions as to whether consensus has been achieved or a vote should be conducted (Baron & Kanevskaia, 2021). They can set the agenda of meetings and also delay or stall discussions. (Harcourt et al., 2020). These formal and

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<sup>6</sup> This list has been summarized for brevity, but the full list is available online at [https://portal.etsi.org/Portals/0/Chairs\\_Guide.pdf](https://portal.etsi.org/Portals/0/Chairs_Guide.pdf). ETSI (n.d.) Chair's Guide.

structured decision-making procedures can be instrumentalized to achieve certain political interests (Bütthe & Mattli, 2011; Lazanski, 2019). Scholarship suggests that states and firms actively compete for such roles to influence outcomes (van de Kaa & de Bruin, 2015; Baron et al. 2019), steer policy trajectories, and embed national or commercial priorities into ostensibly neutral technical rules (Fägersten & Rühlig, 2019).

AI standards are generated by a complex constellation of national, regional, and international standard-setting bodies, each with its own governance structures, membership models, and political dynamics. Despite standards' growing policy relevance in transnational governance and their role in hardening risk management obligations into binding conformity requirements, little empirical evidence exists at the macro level about who leads this process, how influence is exercised, or how geopolitical competition shapes outcomes. In the absence of broader membership lists, leadership positions can therefore act as a useful proxy to firstly map the actors who are present in these forums and to shed light on how influence is wielded in day-to-day AI standards development. Depending on which stakeholders are involved, this has an important bearing on the outcome of the final standard and whose interests that standard might reflect.

## 3. Methodological approach

### 3.1 Building a comprehensive AI standards leadership dataset

Longitudinal data on 819 working group chair and leadership positions was hand-collected from primary sources from the websites of ETSI, IEEE, ISO/IEC and ITU from March to May 2023 and two years later from March to May 2025, when CEN-CENELEC and IETF were added (see Table 3). Following the methodology of (Baron & Kanevskaia, 2021), we identify the *primary* affiliation, considered to be the most likely primary employer of the individual, giving priority to companies over membership organizations or voluntary positions (such as Board memberships, etc.). In the majority of cases, this was the affiliation as listed on the SDO website: particularly the ETSI members' portal and ITU workplan area, which lists all names and affiliations. In the case of IEEE, information is taken from available project authorization request (PAR) documents<sup>7</sup> including the domain of the e-mail address to identify the affiliation

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<sup>7</sup> The IEEE website states, "The first step in beginning a standards development project, whether an individual or entity/corporate activity, in the IEEE SA is the submittal of the Project Authorization Request (PAR)." IEEE SA (n.d.) Submitting a Project Request. <https://standards.ieee.org/develop/initiating-project/par/>

combined with information available in the IEEE explore digital library.<sup>8</sup> SC 42 committee members’ affiliations were the most difficult to source as their organizational affiliation was always listed as the national standards body. In this case, we used speaker bios from recent SC 42 plenary conferences<sup>9</sup> and LinkedIn profile pages, or in a small number of cases a broader Google search.

In cases where we could not find the individual related to a particular standard or could not be sure it was the correct individual, the missing data is coded “not found.” This was the case for 2.44% (n=20) of leadership positions. Additionally, in the case of ITU-T, 0.73% (n=6) of individuals names were listed, but the website did not include their affiliation. In this case, the missing data was coded “not specified,” to differentiate between missing data which we could not find, as opposed to information which the SDO did not provide. In total, the dataset contains less than 4% (n=26) missing values.

	2023	2025	Change #	Change %
Total observations	302	517	215	71.19%
Total (unique) individuals	245	405	160	65.31%
Total (unique) organizations	133	232	99	74.44%

**Table 3. Breakdown of working groups, individuals and organizations across international SDOs in 2023 and 2025**

In the case of organizational affiliation, we standardized the names of organizations to full titles and for companies, we used the most commonly recognised trade names and standardized the affiliation to the level of the global ultimate owner (GUO).<sup>10</sup> Finally, in order to understand geographic spread, individuals’ organizational affiliation was standardized based on the location of the headquarters of the GUO, this was then aggregated to a national level. Due to the overwhelming dominance of seven regions (China, Europe, Japan, Korea,

<sup>8</sup> Almost all IEEE working group leaders had authored or co-authored publications within this digital library. According to the IEEE explore website: See <https://ieeexplore.ieee.org/Xplorehelp/author-center/author-details>

<sup>9</sup> For example, from the 2022 and 2021 plenaries, *ISO/IEC AI workshop sessions on 24 and 25 May*. ISO/IEC (n.d.) <https://jtc1info.org/technology/subcommittees/ai/workshops/w1/>, and *ISO/IEC AI workshop sessions on 29 and 30 November*. ISO/IEC (n.d.) <https://jtc1info.org/technology/subcommittees/ai/workshops/w2/#speakers>

<sup>10</sup> This is in line with Baron & Kanevskaia’s (2021) methodology and follows the standard assumption in economic research that firm conduct is determined at the GUO level.

North America -which includes the US and Canada – and the UK), the remaining countries (N=36) are categorised as “rest of world.”<sup>11</sup>

Our longitudinal data reveals a significant increase in the number of working groups dedicated to AI across the six SDOs, with the number of observations increasing by more than 70% between 2023 and 2025 (Table 3). This is due not only to the increase in standards output in the previous two years but also changes to the availability of (public) leadership information. Finally, in order to understand the network dynamics at work in AI standardization, we constructed a (bimodal) social network based on the database of SDO AI leadership positions, using the software Gephi (version 0.10.1) and the Force Atlas 2 layout, the results of which are further detailed in section 4.4 below.

## 3.2. Qualitative interviews and data

To compliment the quantitative analysis, a total of 13 semi-structured interviews were undertaken between June - August 2025, with participants from all SDOs represented except ITU-T. Interviews ranged from 30 minutes to 77 minutes long and all interviews were hand-coded using the software Atlas.Ti. All interviewees were sent a detailed ethics overview prior to the interview and participants themselves chose their level of anonymity. Where participants have assented, we have included their identifying details. In cases where the quote is simply “Anon X”, this person has requested total anonymity and in some cases information in the quote itself has been redacted to prevent disclosure of the person’s identity. As a final measure, all quotes which have been used verbatim were signed off by participants.

# 4. Findings

## 4.1. Leadership positions across six SDOs

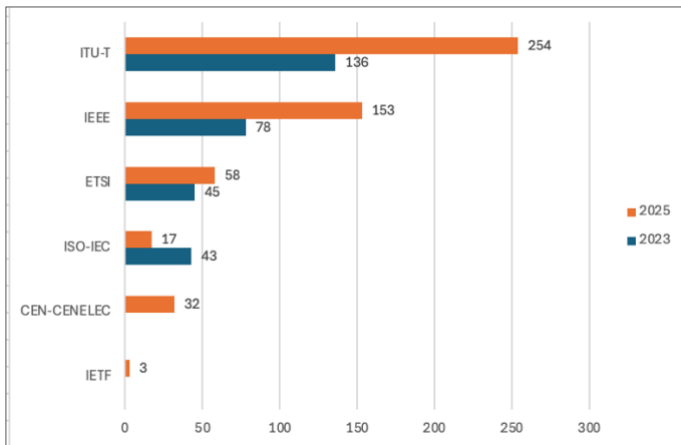
Of the total 819 leadership positions analysed (approx. 36% relate to 2023 and 64% relate to 2025), 528 are held by unique individuals representing 270 (unique) organizations, meaning that many individuals hold multiple leadership positions – for instance as a working group chair and editor – either in the same or different working groups. However, this is most

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<sup>11</sup> The total from 2023-2025 (n=36) is comprised of leadership roles from African organizations (n=11), South American organizations (n=8), Australia (n=5), India (n=4) and Russia (n=1). The majority of these roles are held in ITU-T (n=24), followed by IEEE (n=9) and ISO-IEC (n=3).

often *within* the same SDO. Just 11 individuals hold leadership positions in different SDOs, and of these, none holds a leadership position in more than two different SDOs. Furthermore, the sector is not static, with only 122 individuals and 89 organizations appearing in both the 2023 & 2025 cohorts, meaning that in 2025 we observe mostly new individuals holding these positions.

Across the six cases a total of 25 categories of leadership positions were observed. In CEN-CENELEC the five working groups are led by convenors or co-convenors, and standards work is supported by 24 editors. Within ETSI, the 103 leadership positions are spread across 15 different WG groups, with the role of chair and vice-chair being most common. The information on leadership positions for SC 42 is lower in 2025 than in 2023 and information is available for just 17 roles across five WGs (down from 43 roles in 2023), including the overall sub-committee chair and committee manager, joint working group (JWG) “co-convenors,” WG convenors, and one “secretariat” position. Both the IEEE and the ITU-T have significantly more leadership positions, with 231 and 390 roles in total. This is due to the differing governing structures in the standards development process compared to the other SDOs in the sample. The IEEE has over 150 AI standards projects listed, and each of these projects will have a WG chair and/or vice-chair. In ITU-T, on the other hand, work on standards takes place in study groups where individuals work on specific questions. The questions will be led by rapporteurs and vice-rapporteurs, and each question will often list upwards of four editors involved.



**Fig. 2: Summary of total leadership positions in AI standardization in CEN-CENELEC, ETSI, IEEE, IETF, ISO/IEC and ITU (n=819).**

Immediately there are some noticeable changes compared to when the data was first collected in 2023. Firstly, the level of publicly available information has greatly increased for CEN-CENELEC JTC 21, while it has decreased for SC 42. For example, there was no publicly available information on leadership positions in 2023 for JTC 21. Now there is a periodic AI standardization inclusiveness newsletter and a website dedicated to JTC 21, which includes the individuals holding leadership positions and a dashboard of all ongoing AI standards work<sup>12</sup>. In contrast, the information available for SC 42 has decreased from 43 positions down to 17 positions in 2025.<sup>13</sup> The AI standards work ongoing in IEEE and ITU has also increased substantially from 2023 – 2025, as demonstrated by increased numbers of standards and therefore the chairs and vice-chairs leading this work.<sup>14</sup> Finally, IETF is added to the dataset in 2025 considering the ongoing work in the AIPREF WG, which began in November 2024.

In the literature, we find that there is often agreement that first, holding leadership positions in standardization is advantageous (Baron and Kanevskaia, 2021, Wu & De Vries, 2022, Ruhlig, 2021), and second, that this is a strategy actively pursued by organizations and states to wield influence (Baron et al, 2019, van de Kaa & de Bruin, 2015). However, this is not borne out in our quantitative analysis, nor is there any agreement on these hypotheses based on our qualitative interviews. In some cases, participants remark that the benefits of a leadership position can depend on the individual involved or the SDO. “That you not only let's say, manage the meeting, but you give also some strategic direction. Of course, you need the buy in of your group but, you know, you need to somehow show the way, right?” (Anon. J, ETSI). Others, however, have said that in fact experience matters over WG role. Three participants highlighted the influential role of “greybeards” who have worked in standardization for decades (Anon. F, Anon. H, Anon. I), and this was a theme across multiple SDOs. “I mean, usually if it's not an officer role, then it's someone with a lot of experience. And sometimes editors are the ones who are running things more than convenors or vice-versa. It depends.” (Anon G). Some have also said that perhaps holding a leadership role was advantageous in the past, but this is no longer the case. “It was pretty clear that it was advantageous to have leading positions, and they belonged to Big Tech. They were pushing the agenda really hard, but our secretary and chairman has been working really hard to mitigate this problem and I think they have succeeded,” (Anon. K, JTC 21, SC 42).

A surprising finding was that others offered the counterargument: That those holding leadership positions are often under more scrutiny and that if anyone holding a leadership role

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<sup>12</sup> See [https://www.linkedin.com/posts/sebastianhallensleben\\_status-dashboard-jtc21-european-ai-standardisation-ugcPost-7235665871937970177-VuUG/](https://www.linkedin.com/posts/sebastianhallensleben_status-dashboard-jtc21-european-ai-standardisation-ugcPost-7235665871937970177-VuUG/)

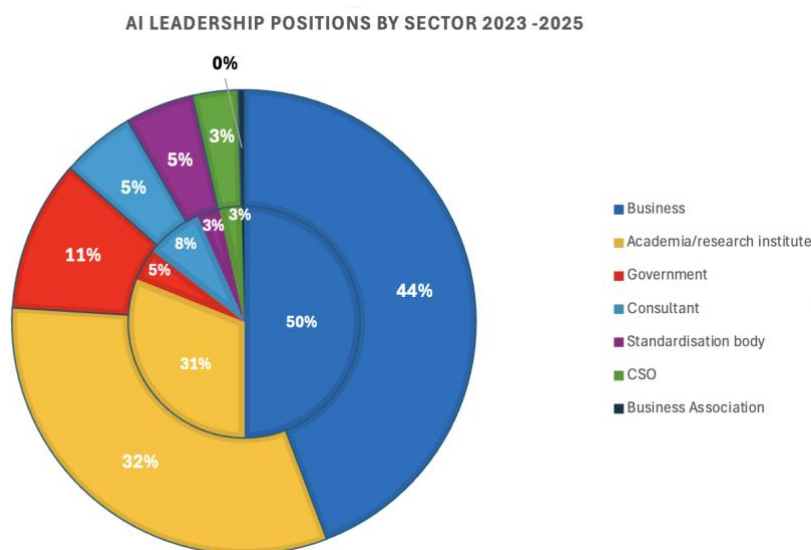
<sup>13</sup> The authors contacted the SC 42 secretariat on 30/6/2025 & 15/01/2026 but did not receive a response.

<sup>14</sup> This chimes with ITU-T as the SDO developing the most AI standards.

was seen to be pushing the discussion in a particular direction they would be reprimanded by other members (Anon. D, Anon. H). “It’s about consensus. So, if I’m not listening to everyone equally, I’m not doing my job and the committee will pull me up on that,” (Anon. D). Therefore, due to increased scrutiny and the potential to diminish your own personal reputation, it was better not to hold a leadership role, particularly since you can still wield a lot of influence on the margins of the discussion. “It’s better to be a sniper! It’s better to be in the back, to be behind” (Anon. C).

### 4.2 Patterns of organizational influence in leadership appointments

Our data shows that leaders overwhelmingly represent business (n=419) followed by academia or research institutions (n=254), the latter of which can also be public research institutions. Others’ primary affiliation includes their national standards body (NSB’s employees) and independent consultants. The results are summarized in Figure 3 below.



**Fig. 3: Categories of leaders’ organizational affiliation 2023-2025.**

We find a very limited representation by civil society organizations, with no more than 2% (n=18) of leaders affiliated with these groups – consistent with previous studies concluding

that NGOs were distinctly under-represented in international standard-setting bodies (Cuccuru, 2019, Perry and Nolke, 2006). This is also borne out in our qualitative analysis, as our interviewees often remark that they simply do not have the resources (time or financing) to keep on top of all the ongoing work. Leaders stress that standardization is a “full time job” (Anon. A, Anon H, Anon G. Anon C, Anon F.). “Even the people that I know that are doing this full time – like really full time – don't have enough time to follow absolutely everything,” (Anon. G.). For a role which is voluntary, this obviously benefits larger organizations who can pay full-time employees, or consultants, to undertake this work. “And of course [...in ] most SMEs [...] there's so few employees that you can't pull out a person because that person is more or less critical for your operations,” (Anon. K, JTC 21, SC 42).

In addition, those working in standardization can often be self-employed. The hiring of consultants was one of the most contentious topics that interviewees raised and emerged organically from the interviews. In some cases, standards developers lamented the difficulty in understanding consultants' affiliations, and who their end clients really were. “And then someone in like some country like you've never heard of shows up and all of a sudden, oh, they're pushing a certain position too. [And you're thinking] Who are they? That's interesting. What are they doing here? And you know, who did they work for? What's their affiliation? (Anon G.). “But if a private consultant turns up to me and there's no clear knowledge of who's backing them, who's behind the private consultant?” (Anon. R, ETSI). In other cases, the consultants' affiliation is transparent, but their hiring is a deliberate strategy on the part of organizations or states seeking to influence standards outcomes. “I guess one of the more interesting things is that they regularly hire older consultants, you know those post-career, very experienced, usually US based [redacted SDO] participants who understand the organisation deeply. They are often hired by the Chinese companies to go in.” (Anon H). Another participant remarked, “like for instance one of the most powerful grey eminences of the whole [redacted standards committee], was hired by [big tech] last year. With all the influence [that comes with that], you know? (Anon. I., JTC 21, SC 42).

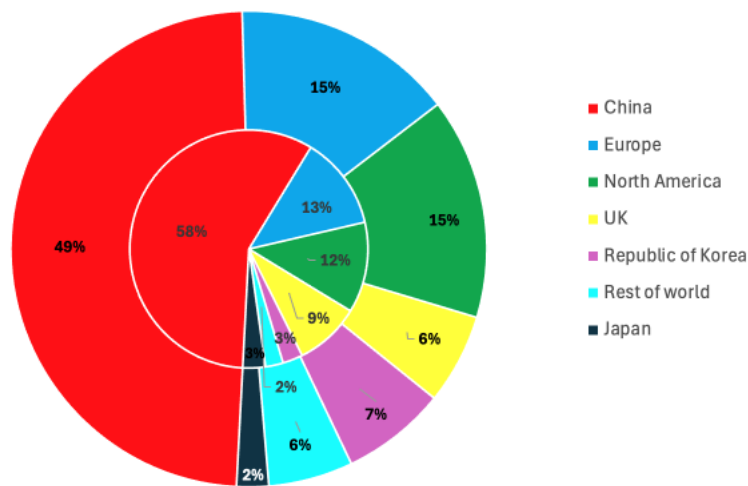
### 4.3 Patterns of regional and geopolitical influence in leadership appointments

Across the six cases, individuals affiliated with Chinese organizations are disproportionately represented, with 52% (n=415) holding leadership positions in AI SDO working groups and committees. North American and European organizations are almost evenly represented with 14% (n=113; 112) and this is followed by British, Korean and Japanese organizations with 7% (n=57), 6% (n=44), and 3% (20) positions respectively (Fig. 4). In

assessing how leadership positions have evolved over time, certain considerations should be taken into account. First, the exponential growth in AI standards output has led to more working groups and therefore more leadership roles across all six SDOs. Second, the changes in the availability of information greatly impact this data, with more availability in CEN-CENELEC and significantly less for ISO-IEC.

These caveats notwithstanding, some important patterns stand out. Overall, organizational representation broadly mirrors the geopolitical dynamics in the sector: that is, the regions that are home to the worlds’ leading AI labs and those taking an active interest in AI standardization – i.e. the US, China, the UK, and to a lesser extent Europe, Korea, and Japan – are those most represented in leadership positions. Interestingly, there does not appear to be any representatives of organizations from the Middle East, either from Saudi Arabia, the UAE or Qatar for instance. However, such participants may be active at the member level.

Leadership positions by (organization HQ) region 2023-2025



**Fig. 4. Change in leaders’ regional representation 2023-2025.**

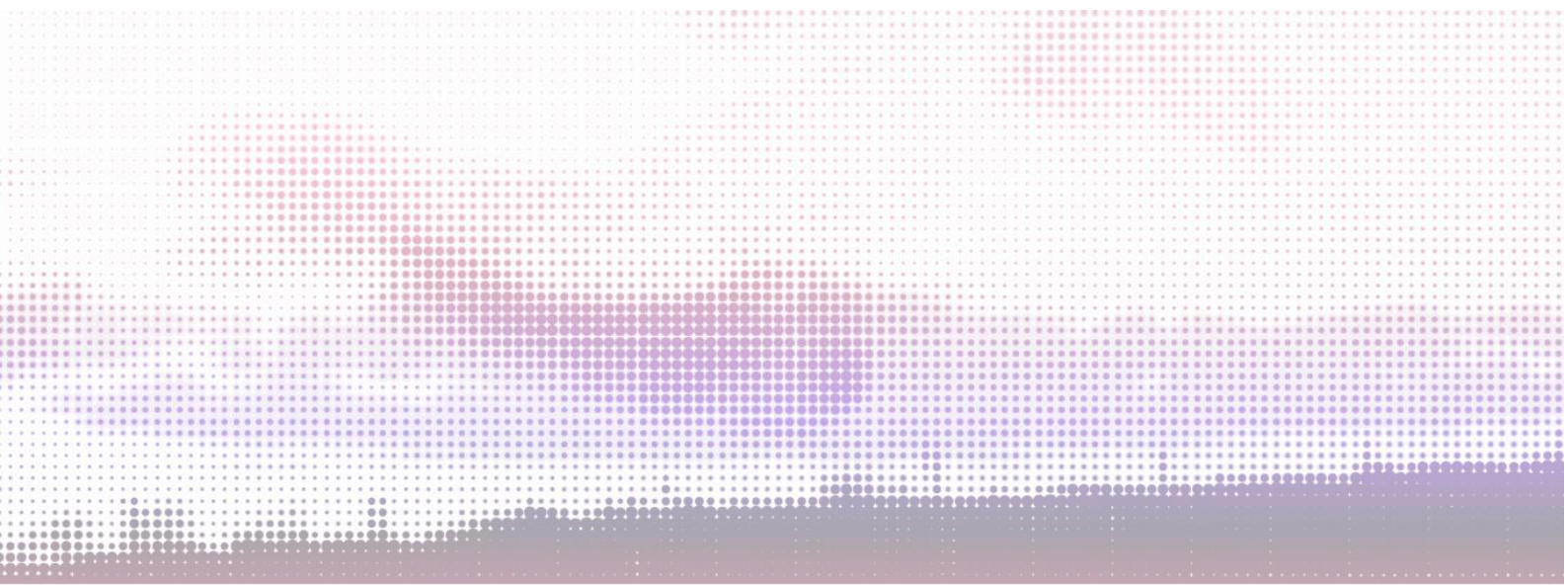
While it is apparent that individuals affiliated with Chinese organizations dominate SDO leadership positions, it is equally apparent that the distribution of organizations amongst SDOs falls along clear geopolitical divisions. Even bearing in mind ITU-T’s asymmetrical size in the dataset, it should be highlighted that of the total 415 leadership positions held by

individuals representing Chinese organizations, 315 are observed in ITU-T (see table 4). In addition, (and in contrast to the other SDOs in our dataset) European and North American organizations are not well represented in leadership positions in ITU-T. In fact, there is not one US or Canadian individual holding a (co-)rapporteur or editor role.<sup>15</sup> We must conclude therefore on the empirical analysis of leadership positions in ITU-T’s AI related work items, there is evidence to support regulatory capture or co-optation by Chinese organizations and this is likely a deliberate, coordinated strategy undertaken in-line with the Chinese government’s stated goals, due to the overwhelming dominance of Chinese affiliated entities, particularly compared to the other SDOs in the sample. Furthermore, this seems to be a recent phenomenon as, taking the example of SG 16, in the study periods from 1997 – 2004 China did not have any representative as chair, rapporteur or editor, while in the last study period (2022 – 2024) it held 86% (n=118) of SG 16’s leadership positions (Cantero-Gamito, 2023).

Org_Region GUO_HQ	2023	2025	Grand Total
<b>CEN-CENELEC</b>		<b>32</b>	<b>32</b>
Europe		27	27
Japan		1	1
North America		1	1
UK		3	3
<b>ETSI</b>	<b>43</b>	<b>55</b>	<b>98</b>
China	11	12	23
Europe	16	21	37
Japan	2		2
North America	3	11	14
UK	11	11	22
<b>IEEE</b>	<b>74</b>	<b>150</b>	<b>224</b>
China	23	44	67

<sup>15</sup> Although it is likely that regional representation becomes more diverse in the upper governance structures such as SGs Chairs/Co-chairs and even the Advisory Group (TSAG) and Standardization Assembly.

Europe	12	19	31
Japan	1	4	5
North America	24	57	81
Republic of Korea	2	5	7
Rest of world	3	6	9
UK	9	15	24
<b>IETF</b>		<b>3</b>	<b>3</b>
Europe		1	1
North America		2	2
<b>ISO-IEC</b>	<b>39</b>	<b>16</b>	<b>55</b>
China	7	3	10
Europe	8	2	10
Japan	6	2	8
North America	9	5	14
Republic of Korea	2		2
Rest of world	1	2	3
UK	6	2	8
<b>ITU-T</b>	<b>136</b>	<b>249</b>	<b>385</b>
China	128	187	315
Europe	1	6	7
Japan		4	4
Republic of Korea	4	31	35
Rest of world	3	21	24
<b>Grand Total</b>	<b>292</b>	<b>505</b>	<b>797*</b>



**Table 4. Leadership positions in AI SDOs based on organization HQ.** \*Filtered to remove not found, not specified.

We can also perhaps attribute China’s prioritization of ITU-T to its relevance for WTO agreements and the hostility from the EU towards Chinese interference in standardization – particularly as it relates to the ESOs. For instance, leadership positions in CEN-CENELEC JTC 21 are overwhelmingly held by European nationals, working for organizations headquartered in Europe, with no Chinese representation (despite representation from US, UK and Japanese organizations). As recognized ESOs, this is deliberate on the part of CEN-CENELEC and in line with Regulation 2022/2480 (the Amendment to Regulation 1025/2012 governing European standardization), which explicitly highlights the need for representatives from national bodies to represent EU member states (European Regulation, 2022). Similarly, while the number of individuals representing Chinese organizations in leadership roles in ETSI has not decreased, neither has it increased proportionate to the increase in positions in 2025. Again, this is likely in deference to the European Commission, which has previously reprimanded ETSI for over-representing non-European organizations, particularly when developing European harmonized ENs (European Commission, 2022). While the US and EU are preoccupied with what will ultimately become *de jure* standards as part of the AIA and applicable to all models deployed within the European Union, China is steadily prioritizing the *de facto* ITU-T standards, which have a propensity to be taken up more broadly by developing nations (Erie & Streinz, 2021).

Delving more deeply into patterns of organizational influence, Table 5 illustrates the top 25 organizations represented in AI standardization leadership positions in multiple SDOs. Given ITU-T’s (and therefore China’s) influence, the top organizations are predominantly Chinese.

Organizations_multi_SDOs	2023	2025
<b>China Telecommunications Corporation</b>	<b>25</b>	<b>44</b>
ETSI	2	4
IEEE	1	1
ITU-T	22	39
<b>China Unicom</b>	<b>15</b>	<b>32</b>
ETSI	1	

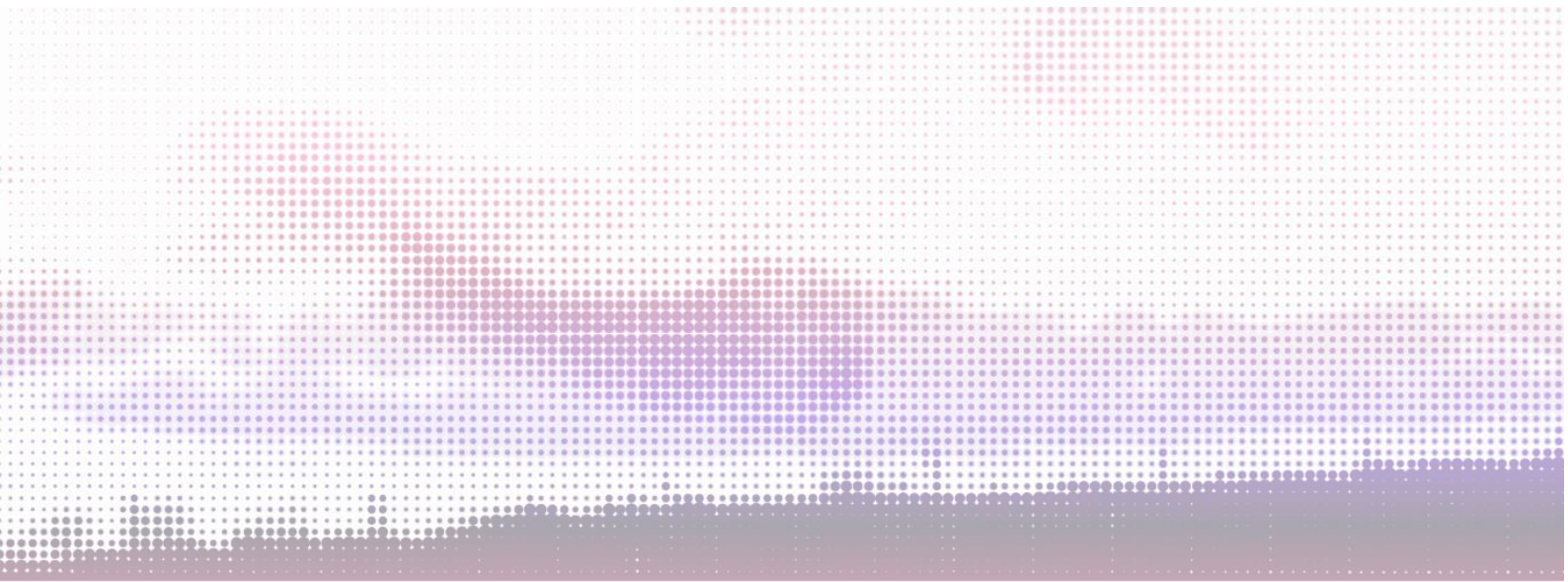
ITU-T	14	32
<b>China Academy of Information and communication Technology (CAICT)</b>	<b>19</b>	<b>20</b>
IEEE		1
ITU-T	19	19
<b>Korea Electronics and Telecommunications Research Institute (ETRI)</b>	<b>6</b>	<b>26</b>
IEEE	1	4
ISO-IEC	1	
ITU-T	4	22
<b>China Mobile Communications Co. Ltd.</b>	<b>13</b>	<b>14</b>
ITU-T	13	14
<b>Huawei</b>	<b>13</b>	<b>12</b>
ETSI	7	6
IEEE	1	1
ISO-IEC	4	3
ITU-T	1	2
<b>ZTE Corporation</b>	<b>7</b>	<b>11</b>
ETSI	1	2
ITU-T	6	9
<b>Alibaba Group</b>	<b>7</b>	<b>6</b>
IEEE		1
ITU-T	7	5
<b>China Electronics Standardization Institute (CESI)</b>	<b>4</b>	<b>4</b>
IEEE	3	4
ISO-IEC	1	
<b>IBM</b>	<b>2</b>	<b>4</b>
IEEE	1	3

ISO-IEC	1	1
<b>Accenture</b>	<b>2</b>	<b>3</b>
CEN-CENELEC		1
ETSI	1	2
ISO-IEC	1	
<b>Orange</b>	<b>4</b>	<b>1</b>
ETSI	3	
ITU-T	1	1
<b>Ant Group</b>	<b>2</b>	<b>2</b>
IEEE	2	1
ITU-T		1
<b>Baidu Inc.</b>	<b>3</b>	<b>1</b>
IEEE	1	1
ITU-T	2	
<b>Microsoft</b>	<b>3</b>	<b>1</b>
CEN-CENELEC		1
ISO-IEC	3	
<b>Numalis</b>	<b>1</b>	<b>3</b>
CEN-CENELEC		3
ISO-IEC	1	
<b>Intel Corporation</b>	<b>2</b>	<b>2</b>
ETSI	2	1
IEEE		1
<b>Inria</b>		<b>3</b>
CEN-CENELEC		2
ISO-IEC		1

<b>Nokia Corporation</b>	<b>3</b>
ETSI	1
IETF	1
ITU-T	1
<b>Council for Scientific and Industrial Research (CSIR)</b>	<b>2</b>
ISO-IEC	1
ITU-T	1

**Table 5: Top 20 organizations holding leadership roles in *multiple* SDOs represented in AI SDO leadership positions 2023-2025**

In line with previous research (Atkinson & Becha, 2025, Cihon, 2019), we find that leading Western players are conspicuously absent and *not* represented in AI SDO leadership positions – for example, some of the world’s leading AI tech companies. Of the eleven organizations that have dominated model development over the years, (as of spring 2024) seven were US-based: Google, Meta, OpenAI, Anthropic, DeepMind (formerly an independent UK-based company, now part of Google), Nvidia, and Hugging Face, three are Chinese: Alibaba, Tsinghua, and the Beijing Academy of Artificial Intelligence, with Mistral AI the only European entity (Rachman et al. 2024). Yet of these companies, only Microsoft holds leadership positions in AI SDO working groups and has chosen the strategically critical SC 42 and JTC 21 to do so. Standards development in JTC 21 and SC 42 (to a lesser extent) has previously been accused of being captured by Big Tech (Corporate Europe Observatory, 2025) however this is not borne out in relation to leadership positions, at least. Lastly, it is perhaps also surprising that U.S and Canadian organizations have not increased in leadership positions at all since 2023. This also contradicts US government statements, which have singled out standards bodies for prioritization, but perhaps is more reflective of a lack of coherent strategy to coordinate and achieve influential positions, ultimately resulting in more unpredictable, undirected (chaotic) interactions. It also stands in contrast to the Chinese approach in ITU-T where a coherent, deliberate strategy to occupy leadership positions with Chinese organizations and nationals is apparent.

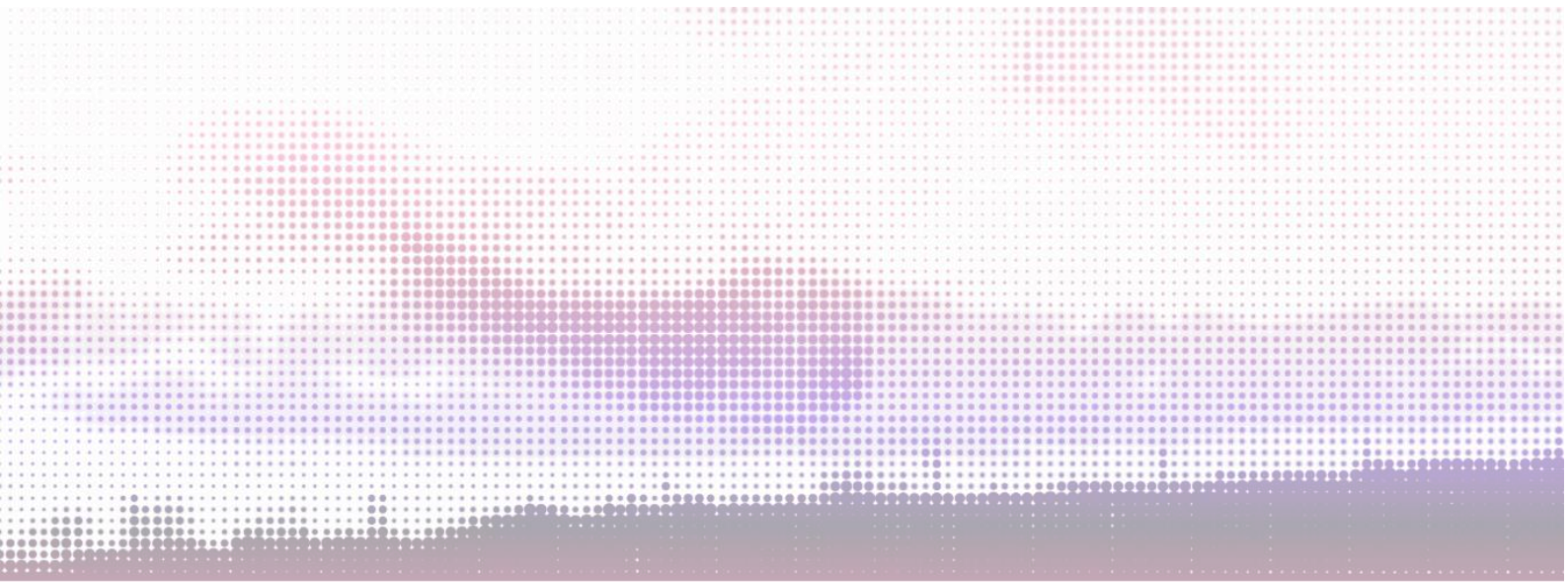


## 4.4 A siloed AI standards ecosystem

In our bi-modal network, the nodes are organizations, and the edges are individuals who hold leadership positions in AI SDO working groups and sub-committees. We deemed the relationship between nodes and edges to be undirected and dichotomous and based on the available data; no weighted value is attributed to the strength of the relationship. A couple of things are important to note about the network. Firstly, node size is scaled to capture how many times each organization is linked to other organizations because they each had leadership roles in one of the six SDOs. This supports the descriptive analysis above, which highlights the most dominant organizations, i.e. the Chinese telecommunications companies, ETRI, and Huawei. Secondly, organizations have been color-coded according to their national headquarters, China is represented in red, the US in dark blue, Europe in green, and the UK in cyan blue. The color coding helps to visualize states' concentrations in particular venues.

### 4.4.1 Network density

What's striking about the AI standardization network is its sparseness: in 2025 the density is reported as 0.014, meaning the proportion of possible relationships within the network is low. Related to this, organizations' positions within the network are also sparse, with very few organizations (such as Huawei, Intel, and Orange) occupying central positions. As in the descriptive analysis above, this underlines the fragmented nature of AI standardization and supports the hypothesis of forum-shopping within AI standardization, whereby actors will prioritize particular SDOs to participate in. This does not necessarily bode well for information flows within the network, as network theory posits that information flows more freely in densely populated networks (Knocke & Yang, 2014). And it appears that collaboration across SDOs is unlikely, with very few actors occupying central positions within the network.



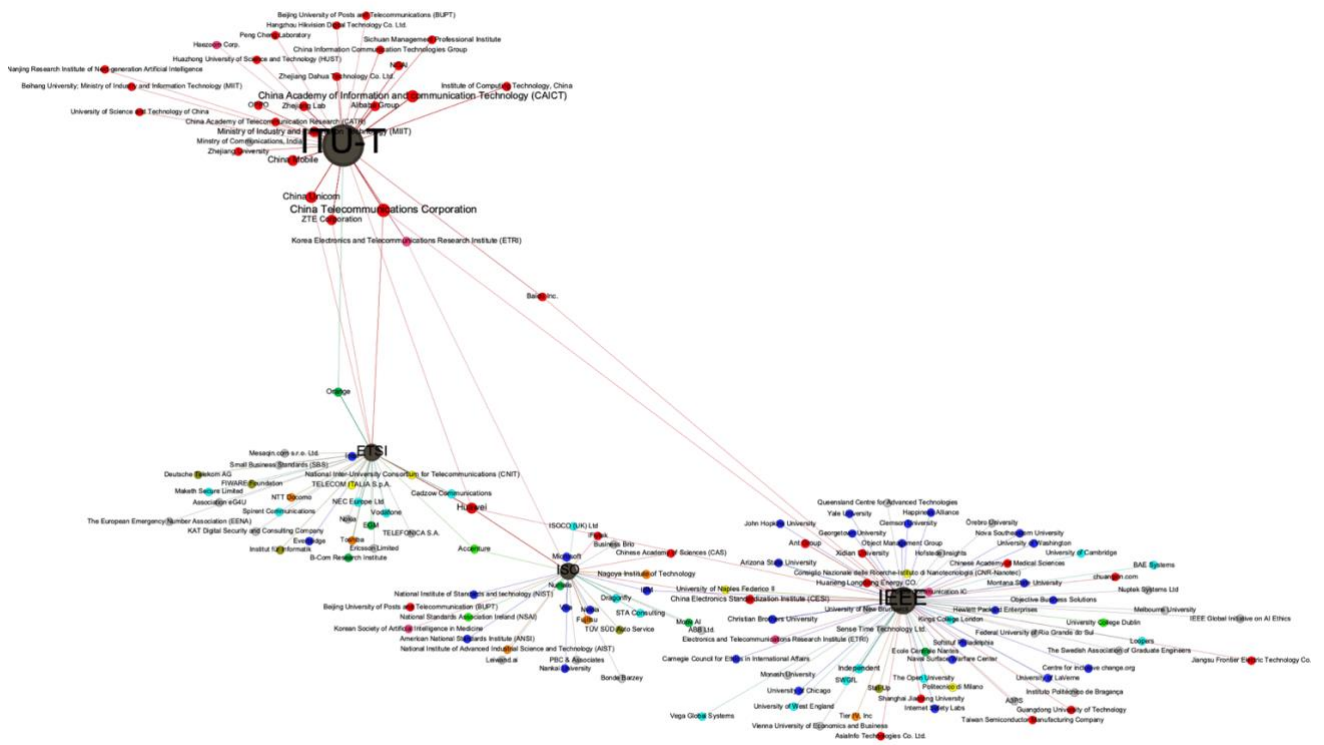
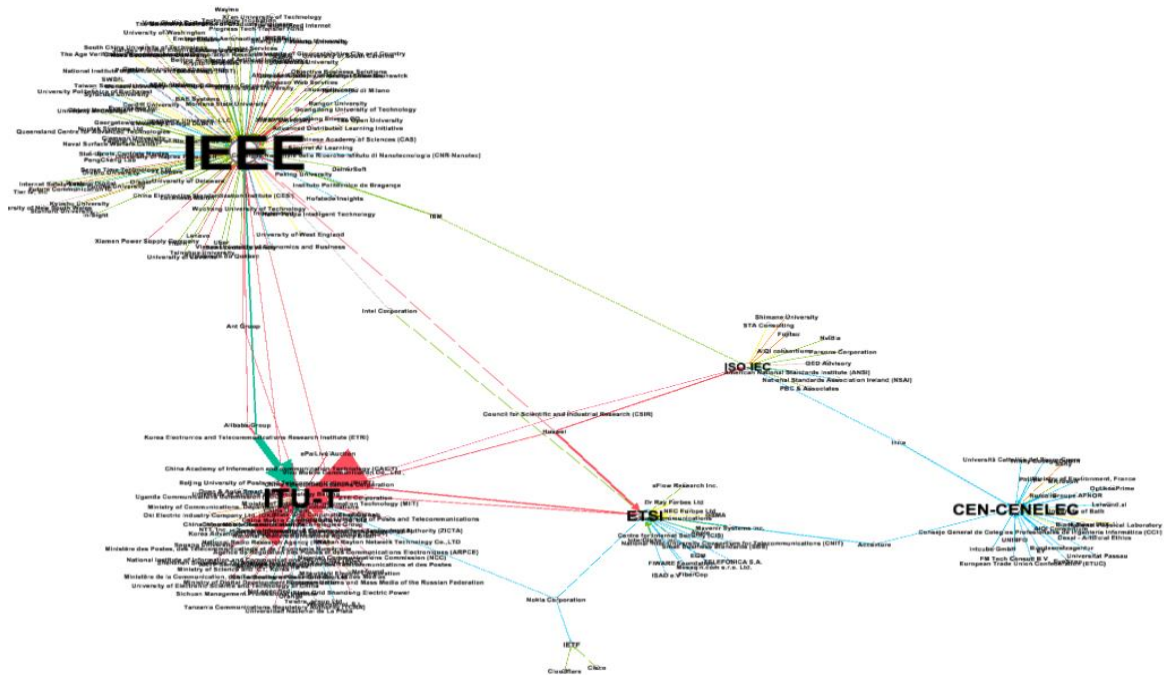


Fig. 9. Network of organizations with employees holding leadership roles in AI standardization, 2023.



**Fig. 10. Network of organizations with employees holding leadership roles in AI standardization, 2025.**

Our network analysis reveals the fragmentation and lack of connectivity amongst standards developers and even SDOs in AI standardization. This demonstrates the siloed nature of AI standards development and the higher propensity for actors to engage in both regulatory capture and forum shopping, whereby standards outcomes are shaped by those present and active in working group meetings. In our interviews, participants said they often weigh up the costs and benefits of standards participation based on the importance of the issue being decided (and often this means the standards’ broader impact, whether through broad international uptake or legal weight), versus what is most effective and efficient for the organization. “It’s driven by immediate product needs, and you know risk management for our products. And at a certain point, you know you, you can’t devote resources to stuff that is too abstract or too far around or not directly you know affecting your products. We know that we have holes in what we watch. We’re in a process right now to try and improve our participation. But most companies, I think the vast majority of companies, do not put the amount of

resources into standards to track, you know, even a low fraction of what they should be,” (Anon H). Again, this was thought to be to the advantage of larger organizations. “That everyone, all of us, have to make some choices. But this is where organisations that have a coherent strategy for this, especially well-resourced organisations have an advantage here because they can,” (Anon. G). Another commented (Anon. I, JTC 21, SC 42) commented, “this is part of the game. You buy, you basically, you know, hire people and with that you basically buy the influence.” As Anon. L (JTC 21 and SC 42) summarized, “you know the core rule of standards is that standards are decided by the people who are in the room. You know the people who turn up.” Having the resources therefore to be active and present in standardization still remains one of the most simple and effective strategies to influence outcomes.

## 5. Conclusion

This article set out to examine who leads international AI standardization, how influence is concentrated, and how geopolitical competition shapes standards outcomes. Building on previous scholarship investigating transnational business governance interactions to understand institutional interplay, overlaps and fragmentation, we sought to investigate AI standardization at the aggregate level. Utilizing a unique longitudinal dataset that, for the first time, spans the six international SDOs leading AI standardization, we investigated leadership positions using network analysis to understand the interactions amongst actors, instances of power concentration and coordination amongst organizations and geopolitical actors. Across more than 800 leadership observations in six standardization bodies, our results show a sector that has not only grown rapidly but has also made some headway into becoming more transparent – particularly in Europe – albeit increasingly more scrutinized and geopolitically charged.

Despite this growth, leadership remains narrowly concentrated, with individuals siloed and fragmented. Only a small number of actors hold multiple leadership roles, cross-SDO participation is exceedingly rare, and the majority of organizations present in 2025 were not visible two years earlier. Across the six organizations, cooperation amongst actors appears to be rare, and interactions amongst or between AI standards committees and working groups are unpredictable and undirected.

Beyond our academic contribution, three additional findings stand out. Firstly, although the literature has often assumed that leadership positions offer advantages including strategic agenda-setting capacity, or heightened influence, our empirical data do not support

a universal causal link. Interviewees repeatedly described that formal titles offer only limited power, and that practical experience or long-term reputation—the “greybeards” of standardization—can outweigh official roles. In several SDOs, leaders portrayed themselves less as gatekeepers and more as procedural stewards tasked with balancing divergent interests and, where necessary, curbing dominance by powerful actors. These insights qualify existing claims that leadership appointments are straightforward instruments of strategic influence and instead suggest that power operates through expertise, continuity, and presence just as much as through formal hierarchy.

Secondly, both who is present and who is absent in AI standardization is striking. While AI standardization, in Europe especially, has been accused of being captured by Big Tech, this is not borne out in an analysis of leadership positions, with only Microsoft holding leadership roles in JTC 21 and SC 42. Furthermore, none of the world’s leading (US) AI labs developing frontier models – e.g. OpenAI, Anthropic, Meta, Google – hold leadership positions in AI standardization. Across the whole eco-system, their absence is notable, particularly compared to Chinese peers such as Baidu, Huawei, Tencent or Alibaba, which do. Currently, publicly available information for all committee membership is unavailable, so it is difficult to say with certainty whether these labs are absent altogether – this should be an area for future research.

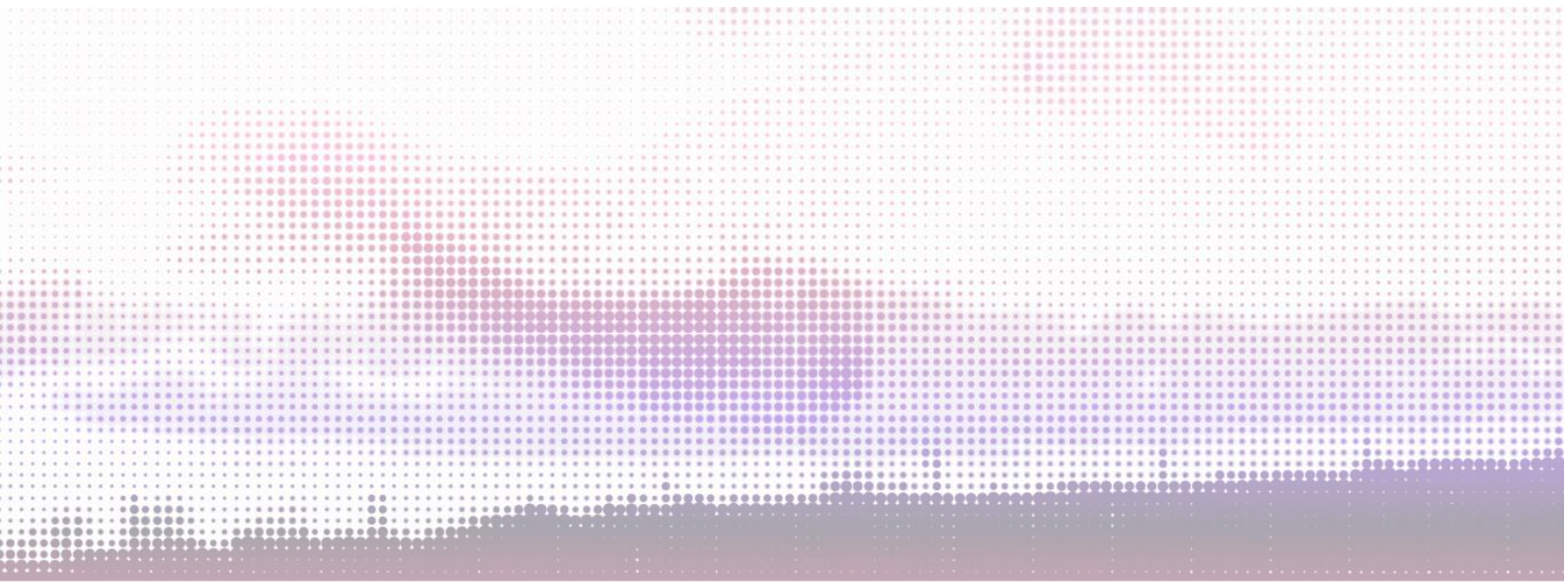
Finally, the geopolitical dimensions of AI standardization are evident. Within SDOs we find evidence to support more deliberate coordination by Chinese actors, particularly in ITU-T, perhaps demonstrating the success and coherence of China’s strategy to lead technical standardization activities on the global stage. Despite public statements to demonstrate increased leadership in global standardization, European and North American organizations remain active but are far less visible at leadership levels in ITU-T and appear to be concentrating their influence in venues aligned to strategically critical regional priorities, such as CEN-CENELEC’s JTC 21 and ISO/IEC’s SC 42. Neither is there any evidence to support a coherent competitive US strategy to dominate leadership roles in AI standardization despite assertive public rhetoric.

As regulatory frameworks such as the EU AI Act begin to rely on technical standards for implementation, these dynamics matter. A system in which a limited set of actors shape global technical norms raises familiar concerns about legitimacy, inclusiveness, and capture. Future research should examine how these patterns evolve once legally binding regimes begin to reference—and depend upon—AI standards. It will also be critical to understand whether participation becomes more diverse, whether civil society and middle-income economies can obtain meaningful representation, and whether coordination across SDOs emerges or continues to fracture along geopolitical lines. If standards are increasingly deployed as

instruments of global AI governance, then understanding who leads them, who is absent, and why will only become more important.

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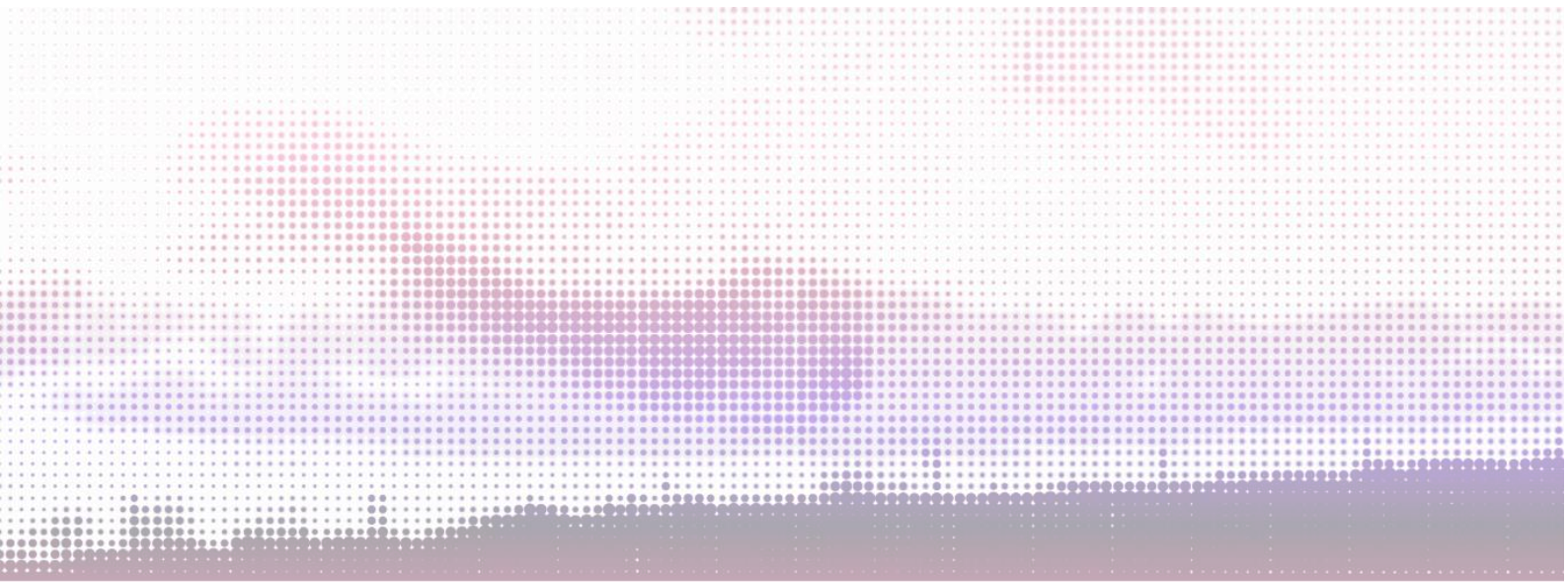
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**Appendices**

Appendix 1. Description of ETSI working groups on AI

ETSI Working groups	Description
OCG AI	Operational Coordination Group Artificial Intelligence
ISG SAI	Industry Specification Group – on securing artificial intelligence
ISG ZSM	Industry Specification Group - Zero-touch Network and Service Management
ISG NFV	Industry Specification Group - Network Function Virtualization
ISG ENI	Industry Specification Group - Experiential Networked Intelligence
ISG INT	Industry Specification Group - Core Network and Interoperability Testing
TC INT AFI	Technical Committee - Autonomic Management and Control Intelligence for Self-Managed Fixed & Mobile Integrated Networks
SmartM2M	Smart Machine to Machine Communications
ISG CIM	Industry Specification Group - cross-cutting Context Information Management
SmartBan	Smart Body Area Network
ISG ARF	Industry Specification Group - Augmented Reality Framework
SC EMTEL	Special Committee on Emergency Communications
EP eHealth	EtSI Project (EP) eHealth group is actively discussing the role of AI in health
TC MTS	Technical Committee - Methods for Testing & Specification
TC Cyber	Technical Committee – Cyber Security
3GPP RAN 3 ("R3")	Third Generation Partnership Project. AI is broadly referenced in the two main areas of Core Network capabilities (5G NG Core) and Radio Access Network (5G RAN).

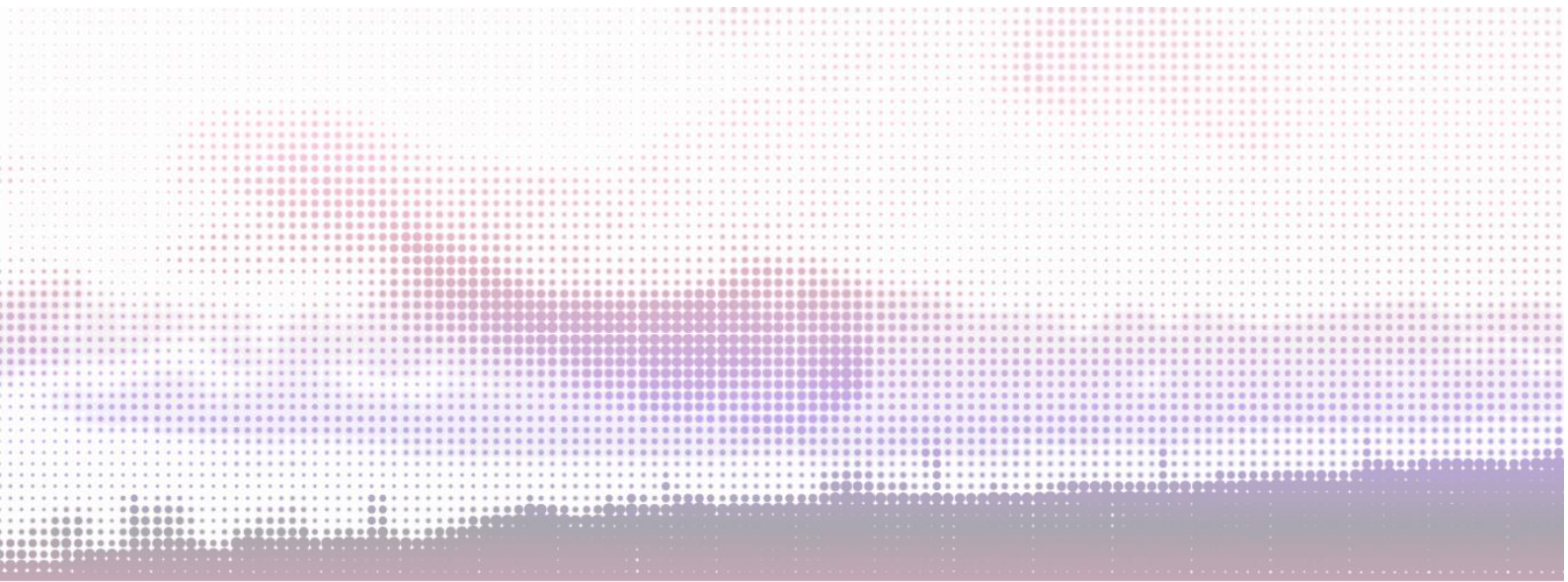


**Appendix 2: Summary of qualitative interviews**

<b>SDO</b>	<b>Pseud.</b>	<b>Pro. Affiliation Category</b>	<b>WG</b>	<b>Holds leadership position?</b>	<b>Mode</b>	<b>Date; time</b>	<b>Durati on</b>
IEEE	Anon. A	Academic	995*	Yes	Emailed written response	18/06/2025	N/A
CEN-CENELEC	Anon. B	NSB	JTC 21	Yes	Online	01/07/2025; 13:30	56 mins
ISO-IEC; CEN-CENELEC	Anon. I	995	JTC 21; SC 42	Yes	Online	02/07/2025; 11:00	77 mins
CEN-CENELEC	Anon. C	995	JTC 21	Yes	Online	03/07/2025; 09:30	44 mins
ETSI	Anon. J.	995	OCG AI	Yes	Online	07/07/2025; 09:30	49 mins
ISO-IEC; CEN-CENELEC	Anon. L	Academic	JTC 21; SC 42	No	Online	07/07/2025; 15:15	70 mins
ETSI; ITU	Anon. R	Self-employed	ISG ENI	Yes	Online	09/07/2025; 11:30	54 mins
ISO-IEC; CEN-CENELEC	Anon. D	NSB	JTC 21; SC 42	Yes	Online	09/07/2025; 14:00	30 mins
ISO-IEC; CEN-CENELEC	Anon. K.	Academic	JTC 21; SC 42	Yes	Online	10/07/2025; 10:00	60 mins

ISO-IEC; CEN- CENELEC	Anon. E	CSO	JTC 21; SC 42	No	Online	10/07/2025; 14:00	53 mins
CEN- CENELEC	Anon. F.	Governme nt	JTC 21	No	Online	16/07/2025; 14:00	52 mins
ISO-IEC; CEN- CENELEC	Anon. G	CSO	JTC 21; SC 42		Online	21/07/2025; 16:00	71 mins
IETF	Anon H.	995	AIPREF	995	Online	19/09/2025; 07:00	45 mins

\*995 = undisclosed to protect anonymity



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