

# The Politics of Standardising Ethics. The IEEE Initiative and the Governance of AI

by **Simone Casiraghi and Niels van Dijk** \*

**Abstract:** Although scholars have discussed the role of both ethics and technical standards in AI regulation, the recent creation of technical standards on AI ethics has been under-discussed. We explore this gap by asking two related questions: 1) How does ethics change through standardisation? 2) What should be the mutual roles for risk producers, assessors and bearers in the use of ethical standards for governing AI risks? Our case study is the Institute for Electrical and Electronic Engineers (IEEE) 7000-2021, part of the IEEE 7000 series, and its potential interplay with the AI Act requirements (AIA; Art. 40-41). We follow approaches from Science and Technology Studies (STS) and social sciences studies of risk, which allows us to study standards 1) as an exemplary case of the phenomenon of the AI ethicisation and institutionalisation of ethics, 2) which is increas-

ingly framed in terms of (ethical or value) risks to be minimised and managed. We aim to show that ethics standards, while they promise to offer a more responsible way to govern AI, transform ethics into an engineering requirement modelled on the procedures, language and logic of operationalisation of standardisation. As a result, IEEE ethics standards suffer from traditional challenges related to representation, accountability, and enforcement. We, therefore, argue that there is a need for 1) a division of powers between risk producers and “ethical” assessors of risk who define acceptable “ethical” thresholds; 2) alternative, dissenting voices in standardisation working groups, especially civil society or consumer organisations that are often de facto excluded from these exercises.

**Keywords:** Technical standards; ethics; artificial intelligence; representation; risk governance; AI regulation

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## A. Introduction: Standards and the Governance of the EU

- 1 “Soft law” or non-binding initiatives have been gaining momentum since at least 2018 as more flexible alternatives to traditional ways of regulating AI technologies. At least two examples of non-binding initiatives have played a central role in the AI debate: 1) ethics, as self-regulation, in the form of guidelines, lists of principles or frameworks and 2) technical standards. Both instruments are claimed to play a role beyond, on top of or in alternative to the law, allowing to boost innovation while at the same time preventing harm to individuals and benefiting society at large.
- 2 Resorting to ethics or technical standards as “soft law” or non-binding initiatives in the governance

of digital technologies is not a new phenomenon.<sup>1</sup> The combination of these two tools, however, with the creation of standards on the ethical aspects of AI systems, is unprecedented.<sup>2</sup> The resort to ethics in

\* Simone Casiraghi is Guest Professor and Postdoctoral researcher at the Law, Science, Technology and Society Group (LSTS) at the Vrije Universiteit Brussel (VUB). Niels van Dijk is Associate Professor of Legal Philosophy and Legal Sociology at VUB-LSTS.

1 Mariachiara Tallacchini, ‘Governing by Values. EU Ethics: Soft Tool, Hard Effects’ (2009) 47 *Minerva* 281; Annalisa Volpato, ‘The Legal Effects of Harmonised Standards in EU Law: From Hard to Soft Law, and Back?’ *The Legal Effects of EU Soft Law* (Edward Elgar Publishing 2023).

2 While standards of ethics are new, they can be considered a sub-type of process-oriented standards and share similarities with standards intended to have social benefits, e.g. the ISO 26000:2010 or ISO 14000 series on environmental management. In fact, the ethics involved in these standards

AI governance has already been largely criticised by scholars,<sup>3</sup> while the novelty of Standard Developing Organisations (SDOs) influencing how ethical aspects of AI (including values and fundamental rights) are understood and operationalised has so far been under-discussed.

- 3 In this article, we focus on the Institute for Electrical and Electronic Engineers (IEEE) 7000-2021 standard, part of the IEEE 7000 series which is claimed to be the first series on ethical standards in history, and on its potential interplay with the AI Act (AIA) requirements (Art. 40-41). The AIA follows the logic of the New Legislative Framework (NLF) in relation to high-risk AI systems (Chapter III),<sup>4</sup> a regulatory technique in EU Law that stemmed from the difficulty in achieving the internal market and removing technical barriers to trade within the EU. Since the adoption of directives intended to harmonise technical requirements in the 1980s was too slow, the European Commission opted for a system in which technical requirements would be created by standardisation bodies rather than being included in legislation. This can be considered a case of co-regulation where market actors are entrusted with the implementation of EU law, i.e. rulemaking is outsourced to the private sector, which creates and approves these regulatory instruments, by EU institutions.<sup>5</sup> Following this logic, the AIA is meant to leave “broad principles” of legislation (e.g. the essential requirements for high-risk AI systems) to EU institutions while assigning technical issues

regarding the implementation of the law to standardisation bodies.

- 4 However, the NLF has focused, so far, primarily on developing standards for the protection of health and safety, while the AIA also seeks to protect fundamental rights, requiring a broader understanding of the rule of law and human rights law,<sup>6</sup> and more generally politically charged and value-laden issues. According to the European Commission, the idea of the NLF is to draw a line between political and technical tasks. On the one hand, the legislator makes political choices, i.e. the EU defines “essential requirements” as precise as possible in legislation, to ensure products traded in the EU meet high-level health, safety, and environmental requirements. On the other hand, standard organisations provide high-quality technical specifications and are not given any political powers.<sup>7</sup> However, this distinction in practice is not that neat. Essential requirements in the AIA leave many open questions about how to operationalise fundamental rights and other ethical principles or values to standard organisations, whose members, organisational infrastructure and procedures differ from traditional rulemaking.
- 5 Aiming to explore the novelty and consequences of standards on ethics, we ask the following research questions:
- How does ethics change through standardisation? How are ethical values transformed through the standardisation process?
  - What should be the mutual roles for risk producers, assessors and bearers in the use of ethical standards for governing AI risks?
- 6 To answer these questions, we follow approaches from Science and Technology Studies (STS) and social sciences studies of risk, which allow us to study standards from two interrelated viewpoints. First, we consider AI ethics standards as a case study of the broader phenomenon of “ethification”.<sup>8</sup> STS scholars have studied ethics not as an academic discipline or philosophical endeavour (i.e. what ethics is), but in

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is not really about the ethical behaviour of those who make the system, i.e. engineers and policy makers who act ethically in their profession. The goal is not to define ethical actions per se, but to help an organisation manage ethical issues, through a series of checklists in the design and development phase.

- 3 Niels van Dijk, Simone Casiraghi and Serge Gutwirth, ‘The “Ethification” of ICT Governance. Artificial Intelligence and Data Protection in the European Union’ (2021) 43 *Computer Law & Security Review* 105597; Paul Nemitz, ‘Constitutional Democracy and Technology in the Age of Artificial Intelligence’ (2018) 376 *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 1; Ben Wagner, ‘Ethics as an Escape from Regulation: From Ethics-Washing to Ethics-Shopping?’ in Mireille Hildebrandt (ed), *Being Profiled. Cogitas Ergo Sum* (Amsterdam University Press 2018).
- 4 However, other chapters of the Act depart from this model, introducing different regulatory approaches for prohibited, limited-risk, and general-purpose AI. These parts of the Act will be out of the scope of this article.
- 5 Carlo Colombo and Mariolina Eliantonio, ‘Harmonized Technical Standards as Part of EU Law: Juridification with a Number of Unresolved Legitimacy Concerns?: Case C-613/14 *James Elliot Construction Limited v. Irish Asphalt Limited*, EU:C:2016:821’ (2017) 24 *Maastricht Journal of European and Comparative Law* 323, 324.

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- 6 Mélanie Gornet and Winston Maxwell, ‘The European Approach to Regulating AI through Technical Standards’ (2024) 13 *Internet Policy Review*; Alessio Tartaro, ‘Value-Laden Challenges for Technical Standards Supporting Regulation in the Field of AI’ (2024) 26 *Ethics and Information Technology* 72.
- 7 European Commission, ‘Vademecum on European Standardisation in Support of Union Legislation and Policies. Part I: Role of the Commission’s Standardisation Requests to the European Standardisation Organisations’ (2015) 9.
- 8 Niels van Dijk and Simone Casiraghi, *Law, Morality and Digital Ethics* (Edinburgh University Press 2025); van Dijk, Casiraghi and Gutwirth (n 3).

its institutionalised form.<sup>9</sup> This concerns what (self) proclaimed ethicists claim ethics is (discursive angle) and what ethicists do in specific sites that are set up to deal with ethics-related tasks (institutional angle).<sup>10</sup> Standards on ethics are a fascinating case because ethics, for the first time, enters the arena of technical standards, with its procedures, language and engineering-like logic of operationalisation.

7 Secondly, social sciences studies of risk help us frame governance questions about risk, which are relevant to our case because institutionalised ethics, in its various forms, from research ethics protocols<sup>11</sup> to ethical guidelines, is also framed in terms of risks to be minimised and managed. These questions pertain to e.g. who gets to decide what the acceptable “ethical” level of risk of AI systems is, or how much bias such a system can have. Social sciences studies of risk have long criticised the notion of risk as an allegedly neutral scientific object, which instead presupposes several normative assumptions.<sup>12</sup> Beck argues that risk governance has become a central political issue that involves a triad of different kinds of actors. The main opposition is between the actors who generate the risks (“risk producers”) and those public or private bodies that are responsible for assessing and mitigating such risks (“risk assessors”). However, risks, much like wealth, are unevenly distributed in society. Their consequences often fall on more vulnerable and marginalised individuals or communities (“risk bearers”), who nonetheless tend to have little to no say about how the risks are assessed.<sup>13</sup>

8 Beck critically addresses the core logic of the NLF. While legislators describe the general program of dealing with risks, the power of determining risks and defining thresholds of acceptability is left to experts in standardisation bodies.<sup>14</sup> It is experts in these bodies who decide, and design accordingly in the standard, what constitutes a high or low risk, how severe certain harms to individuals and society should be considered, and also what are the thresholds after which a risk becomes unacceptable.

9 The separation assumed by the NLF between political and technical tasks hardly fits the content of essential requirements in the AIA that leave many open questions about how to “technically” operationalise politically charged matters such as fundamental rights and other ethical values. This separation<sup>15</sup> becomes even more problematic if there is no parallel division of power between those who produce (risk producers) and those who decide on how to evaluate risks (risk assessors). Both activities are left to standardisation bodies, which often lack robust mechanisms to ensure that the interests of industry do not prevail over those of the people affected by AI risks in society (risk bearers).

10 We focus on IEEE 7000-2021, now also adopted by ISO,<sup>16</sup> because, among the IEEE’s ethical standards, it is the one which makes the most explicit references to “ethics”, “ethical theories”, “ethical principles” or “ethical values”.<sup>17</sup> However, the scope of our analysis is not merely IEEE 7000-2021. We use this standard as an exemplar case<sup>18</sup> to make more

9 Simone Casiraghi, “Anything New under the Sun? Insights from a History of Institutionalized AI Ethics” (2023) 25 *Ethics and Information Technology*; Ulrike Felt and others, *Taking European Knowledge Society Seriously* (Publications Office of the European Union 2007); Nina Frahm and Kasper Schiølin, “Toward an ‘Ever Closer Union’” (2023) 15 *STS Encounters*; Kjetil Rommetveit, “(How) Can You Build Ethics into Artificial Intelligence?” (2025); Tallacchini (n 1) 281.

10 In this regard, ethics in its institutionalised form, e.g. in the case of ethics advisory groups, has been already criticised by us and other STS scholars, also in other fields like life sciences, as a form of “de-politicising” expertise, for its lack of representativeness and checks and balances.

11 Simone Casiraghi and Niels van Dijk, ‘Ethics Reviews in the European Union. Implications for the Governance of Scientific Research in Times of Data Science and Artificial Intelligence’ (2024) 16 *Law, Innovation and Technology* 101.

12 Felt and others (n 9).

13 In Beck’s writings, the most vulnerable risk bearers are low-income communities placed close to dangerous waste facilities, nuclear reactors or industrial plants. In the context of AI, vulnerable risk bearers are children, racial and ethnic minorities and individuals with disabilities. See Gianclaudio Malgieri and Maria-Lucia Rebrean, “Vulnerability in the EU AI Act: Building an Interpretation” [2024] SSRN Electronic Journal.

14 Ulrich Beck, ‘From Industrial Society to the Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment’ (1992) 9 *Theory, Culture and Society* 97, 107.

15 Sheila Jasanoff, *The Fifth Branch. Science Advisers as Policymakers* (Harvard University Press 1990).

16 As ISO/IEC/IEEE 24748-7000:2022.

17 Despite being under the umbrella of the Global Initiative, not all standards explicitly refer to “ethics” or draw on moral philosophy and academic AI ethics discussions. Examples are IEEE 7002 and 7010, whose main concepts are data protection and human well-being respectively, and were therefore excluded from this article.

18 To date, to the best of our knowledge, there are no independent academic, industry or NGO-led empirical studies documenting the practical application of the standard analysed in this article. Methodologically, a meaningful empirical assessment would require access to confidential internal evaluations and compliance documentation, implying a distinct, *ad hoc*, ethnographic research design beyond the scope of this article. Publicly cited “success cases” are primarily produced by the IEEE itself and provide limited transparency. For example, a pilot project with Wiener Stadtwerke (municipality of Vienna) resulted in certification of an AI-based email classification system, but the assessment report has not been made public (only slides and a blog post). Failure cases, which would

general considerations that would also apply to standardisation efforts of EU bodies like CEN-CENELEC, where other concepts such as fundamental rights, fairness, trustworthiness, transparency<sup>19</sup> and bias are used.

- 11 The structure of the article will be as follows. In the next section, we introduce the IEEE initiatives on the standardisation of ethics and zoom in on the origins and content of the IEEE 7000-2021 standard. Section C will move to the critical part from three perspectives. First, despite their proclamations, it shows how doubtful it is that ethical standards will manage to foster compliance with the law. Second, ethical standards suffer from the use of vague and ambiguous terms (such as “values”) that might leave room for instrumental interpretation. Third, ethical standards lack mechanisms to ensure a representative participation of risk bearers in their working groups. Section D analyses the overlaps and gaps with the AIA and shows how the same critiques apply to the standardisation of AI in the EU. In the conclusion, we will wrap up and provide avenues for further research.

## B. Mapping: IEEE 7000-2021 and Its Relationship with the EU AI Act

- 12 The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems (A/IS),<sup>20</sup> launched in April 2016, had two key milestones:<sup>21</sup> 1) the publication of a main document called “Ethically Aligned Design” (EAD)<sup>22</sup> and 2) the creation of several standard working groups, inspired by this document, aiming to produce the IEEE 7000 standards series, i.e. a group of twelve standards addressing ethical issues of AI.<sup>23</sup>
- 13 The EAD aims to guide the community of technologists and designers of AI, as well as educators and policymakers, on the ethical aspects of AI systems. The document includes a mixture of high-

be particularly informative, are not publicly available. The absence of publicly available empirical case studies is therefore not merely a gap in the literature, but itself a key aspect of the problems that our analysis seeks to highlight.

- 19 Charlotte Högberg, ‘Stabilizing Translucencies: Governing AI Transparency by Standardization’ (2024) 11 *Big Data & Society* 1.
- 20 This is the term chosen by IEEE, but, from now on, we will simply use the term “AI” for consistency with the EU framework.
- 21 See <https://standards.ieee.org/wp-content/uploads/import/documents/faqs/gieais-faq-11.22.2020.pdf>
- 22 Institute of Electrical and Electronics Engineers (IEEE), *Ethically Aligned Design. A Vision for Prioritizing Human Well-Being with Autonomous and Intelligent Systems* (2019).
- 23 Rommetveit (n 9).

level ethical principles and “classical ethics”, metrics to measure them and practical recommendations to operationalise ethics that can also offer guidance for standardisation activities, certification, design or (legal) regulation of AI.<sup>24</sup>

- 14 The second milestone of the initiative, i.e. the IEEE 7000 standards series, proclaims to be the first series of standards in history that explicitly focus on societal and ethical issues of a specific set of technologies, and that the IEEE 7010-2020 is the first ethics standard ever produced.<sup>25</sup> The series covers several topics, such as design, privacy and data governance of children, or nudging, and aims to operationalise ethical principles included in the EAD document.

## I. A Standard for Addressing Ethical Concerns During Systems Design

- 15 Before moving to the content of IEEE 7000-2021, a brief overview of how standards are developed at IEEE is needed to understand who gets to participate in each project and how one can contribute.<sup>26</sup> Any IEEE standard typically follows a procedure which consists of six stages.<sup>27</sup> In stage 1, an idea or concept to be standardised is developed and approved. In stage 2, a “working group” (WG) is recruited to start drafting the standard. This stage is important to ensure the representativeness of different interests. Working groups can be very wide, even up to 1000 people.<sup>28</sup> participation may be open or restricted to IEEE members depending on the type of standard, and each participant may have different expertise and carry a different interest, such as producer, user, seller or regulator. Each WG is then divided into subgroups and assigned specific tasks.<sup>29</sup>
- 16 Stage 3 culminates with the draft of the standard achieved via consensus through meetings and discussions. When it comes to voting for certain

24 Institute of Electrical and Electronics Engineers (IEEE) (n 22) 2.

25 This is what some of the people involved in the initiative claim, despite there being at least one precedent in British Standard (BS) 8611:2016 on “Robots and robotic devices. Guide to the ethical design and application of robots and robotic systems”.

26 To know more about the internal procedures at IEEE, such as voting, see the IEEE Constitution and Bylaws document available at <https://ieee-org.widen.net/s/xcmfjhtrv2/ieee-constitution-and-bylaws>

27 See <https://standards.ieee.org/develop/>

28 Matthew Linares, “Industry Standards Won’t Give Artificial Intelligence a Conscience” *OpenDemocracy* (2019) 1.

29 In P7000 (the WG for IEEE 7000-2021), it was decided on 4 subgroups: ethics, system and their stakeholders, risk and process.

motions (e.g. on administrative issues, the creation of a subgroup, or changes in the document) each voting member has a say.<sup>30</sup> Examples of discussions revolved around which principles should be included in the standard,<sup>31</sup> the use of the word “ethics” as opposed to “value-based”<sup>32</sup> or the role of human rights.<sup>33</sup> Once the draft is finalised, it is submitted to various boards that review it: the so-called balloting process (Stage 4) to finalise the document, the review by the IEEE SA Standards Board Review Committee for final approval (Stage 5) and possible revisions or corrections after the standard is published (Stage 6).

17 The aim of the 7000-2021 standard is to support organisations in “creating ethical value” through system design of all kinds of products and services, and more specifically “to strengthen their value proposition and avoid value harms”.<sup>34</sup> Simply put, the standard provides a process by which engineers can include considerations on ethical values (including risks) throughout the research and development stage of a product. The process aims to find a balance of long-term values such as sustainability, privacy, fairness, social responsibility and accountability with short-term time and budget constraints.

18 IEEE 7000-2021 consists of two main stages.<sup>35</sup> The first stage is the “concept exploration stage”, which includes two phases, i.e. 1) concept of operations and context exploration process and 2) ethical values elicitation and prioritisation process. The first focuses on how a system is expected to operate from the user’s perspective, its context(s) of use and which stakeholders are involved throughout the system’s lifecycle. This stage also includes a legal feasibility analysis, which addresses pertinent laws and regulations, due diligence, accountability, consultation with regulatory bodies and ownership, but these questions are not meant to be exhaustive. In the second, stakeholders identify, with the help of ethical theories (i.e. virtue ethics, consequentialism and deontology), values affected by the system. Values are then prioritised (or ranked) and scrutinised.<sup>36</sup> To support this first stage, Annex A provides a philosophical basis for value concepts, i.e. Material Value Ethics and the writings of e.g. the 20<sup>th</sup> Century phenomenologist Max Scheler (1874-1928) and Nikolai Hartmann (1882-1950).<sup>37</sup> According to this approach, to simplify, values are not individual preferences or opinions, nor characteristics of things, but are “given” (directly perceivable or accessible, in a phenomenological way) *a priori*, and materialise in a given context, similar to Platonic ideas. This theory aims to help not only to recognise values but also to provide criteria to rank them.<sup>38</sup> In particular, higher values are those that persist the most, that are less extensible or divisible, less founded through other values, provide more satisfaction to humans and are less dependent on a specific bearer.<sup>39</sup> Annex G includes a list of typical ethical values, such as autonomy, care, control, fairness and privacy.<sup>40</sup> The aim of this annex is to compare values elicited in the process with a list of common ethical values to avoid inadvertent gaps. The table assigns “related values” and “opposing values” to each value (e.g. privacy is related to anonymity, and “opposed” to transparency and inclusiveness).

19 The second stage is called the development stage. It includes two more phases: 1) the “ethical requirements definition process”<sup>41</sup> 2) the “ethical risk-based design process”. The first phase asks the organisation to “formulate” high-ranked ethical values as system requirements that specify how the values are operationalised in the technological

30 Usually, membership and voting rights are granted based on attendance, e.g. a non-member becomes a non-voting member by attending one meeting, a non-voting member becomes a voting member by attending 2 of the last 4 meetings and voting membership is granted to those participants attending the first meeting of a newly chartered WG. The opposite also applies, e.g. a non-voting member becomes a non-member by not attending any of the last 2 meetings, and a voting member who has not attended at least 2 of the last 4 meetings becomes a non-voting member.

31 From the minutes of 7/03/2017: “Ethical principles in P7000 was also a strong topic in the responses. [...] Several points were noted on principles; it is hard to maintain an ethical standard when you say pick and choose what suits you, should meet minimal requirements. Principles guide behavior. Principles evolve. Sarah [Spiekermann] noted the two principles she sees resonating with the group; We are committed to a value-based design and We make design decisions fully visible (transparent).”

32 From the minutes of 25/09/2017: “Carolyn [Nguyen, from Microsoft] and others outlined that P7000 should [not] use the word “ethical” all the time, but “value-based” design; [it should] avoid “moral” language in the standard”.

33 From the minutes of 25/09/2017: “Human rights were discussed and the question how human rights could enter the standard. As part of principles? As part of baseline values?”

34 Institute of Electrical and Electronics Engineers (IEEE), ‘IEEE Standard Model Process for Addressing Ethical Concerns during System Design’ (2021) 9.

35 *ibid* 35.

36 *ibid* 14, 15, 30.

37 *ibid* 53; Sarah Spiekermann and Till Winkler, “Value-Based Engineering for Ethics by Design” [2020] SSRN Electronic Journal 4.

38 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 55.

39 *ibid* 56.

40 *ibid* 69.

41 *ibid* 43.

system. An example provided is how full-body scanners at the airport should protect the value of privacy. The value of privacy should be formulated first as general rules such as “The system shall protect the privacy of body images of scanned passengers” and later into explicit value-based systems requirements, e.g. “The system shall display images of suspected contraband metal, plastic, ceramic, and explosive items positioned on a generic body outline”.<sup>42</sup>

- 20 The second phase, the “ethical risk-based design process”, is not very detailed but builds on risk management requirements of other IEEE standards (e.g. ISO/IEC/IEEE 16085:2021), including general risk management, risk identification, risk analysis and risk mitigation. A crucial phase is the identification of risks “associated with the feasibility of implementing the design”, which should be performed “in consultation with stakeholders”.<sup>43</sup> This phase concerns the determination of the kinds of risk that will (or will not) be taken into consideration during the process. Differently from the AIA, risks in IEEE 7000-2021 are not directly risks of harm to the health, safety or fundamental rights of natural persons, but risks that the value-based system requirements are not realised in the system (which, in turn, might cause risks to individuals, but could also be reputational risks to the organisation and its shareholders). Another important process phase relates to the definition of thresholds, including the determination “whether risks to value-based requirements are at a level within the system design that stakeholders find tolerable (acceptable) without the need for further treatment”.<sup>44</sup>
- 21 Later in the process, however, it is noted how “this standard does not prescribe any specific design solutions. [...] This level of detail (e.g., the use of millimeter wave technology or X-ray backscatter technology for scanning) is left to other domain-specific standards and the competence of the designers”.<sup>45</sup> This means that it is up to AI designers *within* the organisation and other *technical* standards to define more precise risk identifications and risk acceptability thresholds.

### C. Three Critiques on (Un)ethical Standardisation Activities

- 22 To recap, 1) the IEEE initiative on ethics is an unprecedented combination of ethics and standards for AI governance and 2) such an initiative might be influential for the EU standardisation activities for

the AIA’s chapter on high-risk systems, which follows the NLF logic. According to this logic, the European Commission assumes there is a boundary between political and technical(-ethical) issues: on the one hand, the legislator defines high-risk AI systems’ “essential requirements” in legislation, on the other, SDOs define technical specifications based on such requirements. This model would prevent standard organisations from having “political powers”.<sup>46</sup> This assumption, however, seems to collide with the idea of ethics as an object of standardisation.

- 23 STS authors have already shown how such a clear distinction between politics and science, between Research and Innovation agendas and research projects, or between policymaking and the advice of expert groups, is highly problematic.<sup>47</sup> Making ethical standards inevitably requires value choices (e.g. choosing a value-based instead of principle-based approach, choosing material value ethics as a guiding theory or adopting certain criteria to rank values) on contestable political issues in settings that are considered “purely” technical and dominated by an engineering and business-oriented mindset.<sup>48</sup>
- 24 Especially through the NLF, a problem of division of powers becomes manifest. The design of risk assessment methods and the way they are conducted are operationalised in (several) standardisation bodies. In such bodies, those who produce these risks (i.e. organisations using AI systems) have a main say about how they are managed, assessed and mitigated.
- 25 The following sub-sections will zoom in on some of the recurring challenges in the standard-making of AI ethics from three perspectives: compliance, vagueness and representativeness, which especially points to several limitations of the standard IEEE 7000-2021 that we have just analysed.

### I. The Role of Standards in Achieving Compliance

- 26 One of the major promises of IEEE ethical standards, and standards in general, is that they would help a company or organisation to ensure (or foster) compliance with legislation. This links with the NLF idea of “presumption of conformity” highlighted in the previous section. For example, IEEE standards are claimed to clarify what is at stake and explain requirements in layman’s terms since they show

42 *ibid* 54.

43 *ibid* 48.

44 *ibid* 48.

45 *ibid* 55.

46 European Commission (n 7) 9.

47 Jasanoff (n 15); Felt and others (n 9); Tallacchini (n 1).

48 Johann Laux, Sandra Wachter and Brent Mittelstadt, “Three pathways for standardisation and ethical disclosure by default under the European Union Artificial Intelligence Act” (2024) 53 *Computer Law & Security Review* 105957.

“good faith efforts beyond minimal levels of compliance”, they can reduce a company’s liability and they show that organisations are ready to adhere to future laws and regulations.<sup>49</sup> While the potential of IEEE 7000-2021, for e.g. operationalising Art. 9 AIA requirements, may sound very appealing, especially for the EU legislator and for EU companies, at a closer look it is difficult to see how IEEE could achieve “more than compliance”.

- 27 In IEEE 7000-2021, although the standard also claims to “engage with the original spirit of laws, human rights and other social values in the specific context of a system’s use”,<sup>50</sup> the legal requirements and fundamental rights angle are underdeveloped in the process. The only reference to legal requirements in the process is the legal, social and environmental feasibility study and analysis guidelines.<sup>51</sup> This part only includes six very broad questions with little guidance on how to answer them<sup>52</sup> and gives no indications of how specific any reply to the legal questions should be. Although it makes sense to stay at an abstract level in such a standard, given its international scope *qua* jurisdictions, this guidance still sounds too broad, and there are no safeguards in place in case the feasibility analysis concludes that the AI system does not comply with the law.
- 28 Moreover, the questions are mostly about ownership and accountability (questions 1 and 4), therefore privileging the focus on the organisation developing or deploying AI systems rather than on (the fundamental rights of) individuals affected by them. This way, following ethical standards becomes more related to the public perception of the organisation rather than to the (negative) effects on individual users.<sup>53</sup>
- 29 Additionally, there is no explicit reference to other legal frameworks relevant to AI, such as data protection law, human rights law or the legal frameworks that specifically deal with privacy, transparency, and algorithmic bias. It is up to the

organisation to find out which “local, regional, national, and international regulatory bodies should be consulted or enhanced to evaluate a full 360 view of the SOI’s [System Of Interest] legal responsibilities” (question 2), as well as “what are the laws regulating current and future income streams related to SOI design” (question 5).

- 30 In short, what emerges from IEEE 7000-2021 is a narrow vision of compliance with the law, that mostly looks at organisations and internal stakeholders (and their accountability) rather than at the consumer end (such as fundamental rights, including e.g. data subject rights), and instead of going “beyond mere compliance”, or achieve “presumption of conformity” under EU law, it may not even get close to it. This is because, while there is an overlap in terms of scope, the legal part of the IEEE 7000-2021 process seems very generic and marginal, with only 2 pages annexed in the entire document. Yet, it is difficult to complete, since there is little guidance (e.g. what are the laws regulating the system?) and organisations could be tempted to skip the process or do it superficially.

## II. Interpretative Vagueness and Ambiguity of Ethical Requirements

- 31 Not only the legal requirements but also the content of AI ethical standards has been considered vague and/or ambiguous,<sup>54</sup> because of the very same matter such documents are meant to standardise. Turning values or fundamental rights (e.g. privacy) into standards leaves much room for interpretation,<sup>55</sup> depending on the interests at stake, regarding e.g. risk thresholds and mitigation measures to address such risks.
- 32 In IEEE 7000-2021, this critique mostly pertains to the concept of value and its value-based, or “design for values” approach.<sup>56</sup> Value-based ethical approaches for AI and IT systems more generally, including e.g.

49 Daniel Schiff and others, ‘IEEE 7010: A New Standard for Assessing the Well-Being Implications of Artificial Intelligence’ *IEEE Transactions on Systems, Man, and Cybernetics: Systems* (2020).

50 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 14.

51 *ibid* 62.

52 The only explanation is that “[t]he legal questions can be applied to already enacted laws and regulations, as well as to cross-jurisdiction and cross-functional considerations and to potential laws and regulation, that may affect the SOI [system of interest], its users and other stakeholders, and the broader international context”. *ibid*.

53 Niels van Dijk, Raphaël Gellert and Kjetil Rommetveit, ‘A Risk to a Right? Beyond Data Protection Risk Assessments’ (2016) 32 *Computer Law & Security Review* 286.

54 Tambiamba Madiega, ‘EU Guidelines on Ethics in Artificial Intelligence : Context and Implementation’ (2019) 9.

55 Ine van Zeeland and Jo Pierson, ‘How Standards Co-Shape Personal Data Protection in the European Banking Sector’ *2021 IEEE European Symposium on Security and Privacy Workshops* (2021).

56 Jeroen van den Hoven, Pieter Vermaas and Ibo van de Poel (eds), *Handbook of Ethics, Values, and Technological Design. Sources, Theory, Values and Application Domains* (Springer 2015).

value-sensitive design (VSD),<sup>57</sup> values in design<sup>58</sup> and Participatory Design,<sup>59</sup> from which IEEE 7000-2021 takes explicit inspiration,<sup>60</sup> have been criticised for different reasons.<sup>61</sup> The core idea of these criticisms is that the vagueness and ambiguity of the way values are formulated can lead to instrumentalisation, and there is a risk that engineers use values that are unprincipled or unbound.<sup>62</sup>

- 33 Firstly, there is a definitional problem, i.e. that the concept of value and its realisation is left undetermined or underdeveloped.<sup>63</sup> In its origins in the early 1990s, VSD did not define the word “value” explicitly, focusing on broader areas of concern such as human dignity or welfare.<sup>64</sup> However, VSD has always aimed to focus on moral values in information technology,<sup>65</sup> and specifically around human-computer interaction, such as trust, autonomy or privacy.<sup>66</sup> In IEEE 7000-2021, however, it is less clear which values are considered. Some of them, which are treated in other IEEE standards, are explicitly

excluded (i.e. health, security and safety).<sup>67</sup> Annex G includes typical ethical values and Max Scheler’s material value ethics is taken as a reference point and combined with scholarly work on values in system design. This is an original combination, and particularly worth attention since in other cases there is rarely a philosophical foundation for these works.<sup>68</sup> However, the values mentioned are characterised only briefly, which might result in reducing them to mere preferences and wishes of stakeholders.<sup>69</sup>

- 34 The definitional problem is aggravated by the issue of possible value conflicts. The solution of IEEE 7000-2021 is to adopt value ranking criteria<sup>70</sup> which follow the classic trade-off strategy, such as privacy vs. security. Trade-off is a well-known strategy for VSD approaches (e.g. safety vs. efficiency),<sup>71</sup> but it has been criticised for being overly simplistic. Problems that are presented as mathematical, quantifiable and objective are in fact value-laden. The risk of these discourses is that political conflicts and power asymmetries are reframed as mere technical ones.<sup>72</sup> For example, the language of the trade-off privacy vs. security is often enforced in contexts (cultures, organisations) which systematically favours security (e.g. to defend travellers from terrorist attacks), while both privacy and security could be enforced without loss on either of the two. Moreover, some conflicts of values cannot even be solved in terms of trade-offs, for example, when two or more values are “incommensurable”, i.e. they cannot be expressed or measured on a common scale.<sup>73</sup>
- 35 Finally, besides the problem regarding *how* to make a choice, there is also the issue of *who* ultimately makes the choice or who interprets. VSD and IEEE 7000-2021 only ease value conflicts; they do not solve them. A choice still needs to be made, but it is often unclear who makes it and on what basis. In IEEE 7000-2021, it is not specified who makes the final decision on how to prioritise these competing values, either stakeholders or designers/engineers, and, in the

57 Batya Friedman and Peter Kahn, “Value Sensitive Design: Theory and Methods” (2002) University of Washington Computer Science Technical Reports 1.

58 Mary Flanagan, Daniel C Howe and Helen Nissenbaum, ‘Embodying Values in Technology: Theory and Practice’ in Jeroen van den Hoven and J Weckert (eds), *Information Technology and Moral Philosophy* (Cambridge University Press 2008); Helen Nissenbaum, ‘Values in Technical Design’ *Encyclopedia of Science, Technology and Ethics* (Macmillan 2005) lxvi.

59 Douglas Schuler and Aki Namioka, *Participatory Design: Principles and Practices* (Lawrence Erlbaum Associates 1993).

60 Spiekermann and Winkler (n 37).

61 Wessel Reijers and others, ‘Methods for Practising Ethics in Research and Innovation: A Literature Review, Critical Analysis and Recommendations’ (2018) 24 *Science and Engineering Ethics* 1437; Noëmi Manders-Huits, ‘What Values in Design? The Challenge of Incorporating Moral Values into Design’ (2011) 17 *Science and Engineering Ethics* 271, 277.

62 Janet Davis and Lisa P Nathan, ‘Value Sensitive Design: Applications, Adaptations, and Critiques’ in Jeroen van den Hoven, Pieter Vermaas and Ibo van de Poel (eds), *Handbook of Ethics, Values, and Technological Design* (Springer 2015).

63 Manders-Huits (n 61); Ibo van de Poel, “Embedding Values in Artificial Intelligence (AI) Systems” (2020) 30 *Minds and Machines* 385.

64 Davis and Nathan (n 62) 14.

65 Batya Friedman, ‘Value Sensitive Design’ *Berkshire encyclopedia of human-computer interaction* (Berkshire Publishing Group 2004).

66 Similar approaches like “Design for X” focus also on instrumental values like maintenance, reliability and cost. See Raymond Holt and Catherine Barnes, “Towards an Integrated Approach to ‘Design for X’: An Agenda for Decision-Based DFX Research” (2010) 21 *Research in Engineering Design* 123.

67 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 13.

68 van Dijk, Casiraghi and Gutwirth (n 3).

69 Manders-Huits (n 61) 281.

70 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 55.

71 Ibo van de Poel, ‘Values in Engineering Design’ in Anthonie BT Meijers (ed), *Handbook of the Philosophy of Science* (North-Holland 2009).

72 Simone Casiraghi, J Peter Burgess and Kristoffer Lidén, ‘Ethics and Border Control Technologies’ in J Peter Burgess and Dariusz Kloza (eds), *Border Control and New Technologies. Addressing Integrated Impact Assessment* (Academic and Scientific Publishers 2021) 90.

73 Ibo van de Poel and others, *Ethics, Technology and Engineering: An Introduction* (Wiley-Blackwell 2011) 182.

former case, which group of stakeholders. Choosing one or the other group could lead, in principle, to very different results.

- 36 In sum, standards are meant to reduce uncertainty and provide stability, but the vagueness of their content makes such standards even more uncertain and open to (instrumental) interpretation. In IEEE 7000-2021 this concerns values considered and their definitions, how to rank them and relate them to classic ethical theories (if deemed necessary).

### III. Representativeness and Participation

- 37 Regarding representativeness, the IEEE has developed rules to ensure the inclusiveness and representativeness of its WGs and avoid certain interests prevailing over others, but it is doubtful whether these rules work in practice to avoid overrepresentation of the industry as the main risk producer. The reality is that people from civil society organisations (e.g. trade unions), who represent the interests of the most affected risk bearers in society, are *de facto* excluded by these bodies, and not because they lack initiative, but because they would have to pay high fees<sup>74</sup> and join meetings in expensive (and possibly exotic)<sup>75</sup> places.<sup>76</sup> On top of this, doing ethics in standardisation bodies is still unaffordable even among smaller companies; only big companies can afford, economically and timewise, to have ethics experts on their payroll.<sup>77</sup>

74 For example, for IEEE membership to be a voting member of a WG or to be part of the balloting process.

75 This does not apply to the IEEE WG analysed in this article (where most meetings took place remotely, possibly due to the Covid-19 pandemic), but it is not rare in IEEE. See for instance the planned session of IEEE 802.15 in places like Hawaii, Thailand and Bahamas: [https://grouper.ieee.org/groups/802/15/pub/Meeting\\_Plan.html](https://grouper.ieee.org/groups/802/15/pub/Meeting_Plan.html)

76 See the discussion during the 2019 Computers Privacy and Data Protection Conference (CPDP) panel, organised by IEEE and moderated by Paul Nemitz, titled “Technical standards on ethics and/or regulation?” The intervention of Ponce del Castillo, researcher and lawyer at the European Trade Union Institute, at minute 52, is about where civil society organisations are sitting in standardisation bodies. At the same conference panel, Alessandro Guarino, researcher and information security professional working at some CEN-CENELEC standards, talks about the lobby problem that affects standard organisations. Video available at <https://www.youtube.com/watch?v=Cf7xcRzOwvI>

77 Jacob Metcalf, Emanuel Moss and Danah Boyd, ‘Owning Ethics: Corporate Logics, Silicon Valley, and the Institutionalization of Ethics’ (2019) 82 *An International Quarterly* 449, 457.

- 38 An additional problem related to representativeness lies in the articulation of the concept of stakeholder involvement in the process described by the standard. “Stakeholder” is considered a key concept in the process of IEEE 7000-2021<sup>78</sup> and it plays a role in three crucial phases, i.e. value elicitation and prioritisation, ethical requirements definition process and ethical risk-based design process. The idea is that a group of stakeholders as wide as possible<sup>79</sup> should be involved early in the project to ensure the broadest scope of values and ethical requirements for the system. However, while it is recognised that the “users” are a group of stakeholders that is “intrinsic to ethical risk-based design”, a business mentality in identifying stakeholders is prevalent: “[a]s for any engineering design effort, the interests of the project owners or the organisation’s top management along with the system architects and designers are typically predominant. The acquirers for a custom-built system, or whoever identifies the needs to be translated into requirements, such as business or market analysts, and portfolio managers, or product line managers, are also considered as major stakeholders”.<sup>80</sup> There is a thorough level of granularity when it comes to describing these “internal” stakeholders,<sup>81</sup> but the same cannot be said for the external stakeholders and especially the consumer end or civil society. IEEE 7000-2021 only provides a few examples of groups of vulnerable people or risk bearers who could be specifically affected by AI systems and would need to be involved in the process.

### D. Overlaps and Gaps Between AIA and IEEE 7000-2021

- 39 As the AIA moves toward implementation, IEEE 7000-2021 may offer concrete methods that align with the AIA’s essential requirements. Both from the point of view of IEEE and the European Commission, there are large overlaps between the work of IEEE on ethics standards and the role technical standards play in the EU AI regulation.

78 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 27.

79 Examples provided by the document are “Human beings using the system, organizations representing human beings using the system, supporters, developers, producers, trainers, maintainers, disposers, acquirers, supplier organizations, and regulatory bodies”. Institute of Electrical and Electronics Engineers (IEEE) (n 34) 21.

80 *ibid.*

81 See how, for instance, on 20/12/20, Lewis Gray from Abelia Corporation proposed to include explicitly “profit” as an ethical value and to include the notion of “shareholder” as distinct from stakeholder. The vote failed (14 no and 1 yes).

- 40 According to Art. 40, organisations can follow a harmonised standard to comply with the requirements of the AIA or can follow common specifications<sup>82</sup> adopted by the Commission rather than interpreting the essential requirements set out in the regulation.<sup>83</sup> Providers do not have to follow such standards, but, in practice, they are cheaper and safer for producers to follow. In fact, conformance with standards or common specifications is a means to reduce compliance burdens for AI providers.<sup>84</sup>
- 41 CEN and CENELEC are important actors in the AIA since they can be mandated by the Commission, on a formal request, to develop harmonised standards,<sup>85</sup> following the procedures established by regulation 1025/2012. In 2023, the European Commission asked CEN and CENELEC to focus on “ten concrete aspects of AI”, including risk management, transparency, human oversight and the conformity assessment procedure. This led to the creation of the Joint Technical Committee (JTC21).<sup>86</sup> The references of the standards published by the JTC21 are published in the Official Journal of the European Union (OJEU) once the Commission services evaluate them positively to satisfy the standardisation request.<sup>87</sup> Only standards published in the OJEU can provide operators with a relevant legal “presumption of conformity” with the legal requirements of the EU harmonisation legislation in question.<sup>88</sup> However, there are appropriate agreements<sup>89</sup> between European Standardisation Organisations (ESOs) and International Standardisation Organisations (such as ISO and IEC), which ensure that international standards can be proposed as European harmonised standards in response to a standardisation request.<sup>90</sup>
- 42 Contrary to the IEEE, the emphasis of JTC21’s AI standardisation on “ethics” has been rather marginal. Considering the emphasis the Commission had put on the ethics of AI right before the AIA proposal,<sup>91</sup> the word “ethics” or “ethical” does not play a central role in the text of the AIA.<sup>92</sup> However, the essential requirements of Chapter III (Articles 8-15), which form the core of AI standardisation work, are based on the “seven requirements” developed by the European High-Level Expert Group on AI in their ethical guidelines.<sup>93</sup>
- 43 Still, although the IEEE is an international organisation and US-based, and therefore not part of European Standard Organisations (ESOs)<sup>94</sup> defined in Regulation 1025/2012,<sup>95</sup> the work of IEEE might still
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- agreements signed between CEN-CENELEC, ISO and IEC to avoid duplication of standards at international and European level (Available respectively at [https://isotc.iso.org/livelink/livelink/fetch/2000/2122/3146825/4229629/4230450/4230458/01\\_\\_Agreement\\_on\\_Technical\\_Cooperation\\_between\\_ISO\\_and\\_CEN\\_\(Vienna\\_Agreement\).pdf?nodeid=4230688&vernum=-2](https://isotc.iso.org/livelink/livelink/fetch/2000/2122/3146825/4229629/4230450/4230458/01__Agreement_on_Technical_Cooperation_between_ISO_and_CEN_(Vienna_Agreement).pdf?nodeid=4230688&vernum=-2) and [https://assets.iec.ch/iecwebsite/partners/IEC-CENELEC\\_Frankfurt\\_Agreement%7B2016%7D.pdf](https://assets.iec.ch/iecwebsite/partners/IEC-CENELEC_Frankfurt_Agreement%7B2016%7D.pdf)). This is particularly relevant since IEEE 7000 has been adopted, in its form analysed in this article, by ISO/IEC as ISO/IEC/IEEE 24748-7000, available at <https://www.iso.org/standard/84893.html>
- 82 Art. 3 (28) AIA defines “common specification” as “a document, other than a standard, containing technical solutions providing a means to comply with certain requirements and obligations established under this Regulation”.
- 83 Art. 41 AIA discusses “common specifications” in cases where harmonised standards may not exist or may not apply. See Michael Veale and Frederik Zuiderveen Borgesius, ‘Demystifying the Draft EU Artificial Intelligence Act’ (2021) 4 *Computer Law Review International* 97, 105.
- 84 Mark McFadden and others, *Harmonising Artificial Intelligence: The Role of Standards in the EU AI Regulation* (Oxford Information Labs, 2021) 7 <https://oxcaigg.oii.ox.ac.uk/wp-content/uploads/sites/11/2021/12/Harmonising-AI-OXIL.pdf>.
- 85 Veale and Borgesius (n 83) 104.
- 86 See [https://publications.jrc.ec.europa.eu/repository/handle/JRC139430?utm\\_source=substack&utm\\_medium=email](https://publications.jrc.ec.europa.eu/repository/handle/JRC139430?utm_source=substack&utm_medium=email)
- 87 Stefano Nativi and Sarah De Nigris, ‘AI Watch: AI Standardisation Landscape: State of Play and Link to the EC Proposal for an AI Regulatory Framework’ (Joint Research Centre, 2021) 7 <https://data.europa.eu/doi/10.2760/376602>.
- 88 Regulation (EU) 1025/2012 sets the general rules regarding the functioning of the standardisation system, including the procedure for issuing standardisation mandates (Art. 10). After citation in the Official Journal of the European Union, harmonised standards are considered EU law.
- 89 For instance, the Vienna (1991) & Frankfurt (2016)
- 90 IEEE 7000-2021 has been adopted by ISO-IEC as ISO/IEC/IEEE 24748-7000:2022. Available at <https://www.iso.org/standard/84893.html>.
- 91 van Dijk, Casiraghi and Gutwirth (n 3).
- 92 The word rarely appears in the text. Article 40 refers to ethical reviews required by the EU for testing high-risk systems outside regulatory sandboxes; Article 95 and Recitals 7, 27 and 165 refer to the AI High-Level expert group guidelines.
- 93 High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI* (2019) 15 <https://data.europa.eu/doi/10.2759/346720>.
- 94 IEEE is nevertheless one of the relevant SDOs having a formal recognition by international treaties and regulations or SDOs participating in the bi-annual Global Standards Collaboration, which also includes ETSI, CEN-CENELEC, ISO/IEC and ITU-T. See Nativi and De Nigris (n 87) 9.
- 95 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

affect, at least in principle, the EU standardisation practices on AI. In fact, it is in the EU's strategic interest to cooperate with a broader network of standard organisations.<sup>96</sup> Also, many key actors from EU-based organisations are part of IEEE initiatives<sup>97</sup> and IEEE is related to the EU in several ways.<sup>98</sup>

44 IEEE 7000-2021 might be relevant for the AIA in terms of scope (rather broad in terms of technologies considered, across a variety of sectors) and horizontal nature<sup>99</sup> of the regulation, and therefore it could provide the technical specifications that support AI systems operators to achieve and demonstrate compliance with the legal requirements.<sup>100</sup> The EC's Joint Research Centre<sup>101</sup> has deeply focused on IEEE initiatives and their interplay (including potential misalignments) with the AIA in their report on the AI Standardisation landscape.<sup>102</sup> The report concludes that the IEEE 7000 series covers most of the requirements for high-risk systems under the AIA.<sup>103</sup> In particular, IEEE 7000-2021 is considered "very relevant" for the work of the JTC21 especially regarding risk management, making it relevant for adoption at the EU level.<sup>104</sup> The design-oriented focus of IEEE 7000-2021 provides a unique perspective that can be useful for AI providers of high-risk systems that want to integrate risk considerations early in the development process.<sup>105</sup> An example is the risk management system in Art. 9 of the AIA.<sup>106</sup> The risk approach of Art. 9 takes account of the consequences of high-risk AI systems for individual persons and

their health, safety and fundamental rights (the risk bearers), or for society more generally.

45 We have already pointed out the limitations of IEEE 7000-2021 that might hinder the possibility that it becomes adopted as a harmonised standard in the EU under the AIA. However, the critiques in the previous section do not simply apply to the IEEE case, but have also implications for other EU standardisation activities, even if IEEE 7000-2021 will never be adopted by CEN-CENELEC. To begin with, the role of standards in achieving compliance remains problematic because many standards adopted by CEN-CENELEC are transpositions of international standards (ISO-IEC),<sup>107</sup> which could also have a generic jurisdictional focus, therefore glossing over the specificities of the EU legal framework.<sup>108</sup> The Commission has already admitted, for example, how the approach of international standardisation bodies on risk "does not align with the AI Act, for instance on the notion of risk, which is understood by ISO [in e.g. ISO/IEC 42001:2023] as organisational risk, and not as risk to health, safety and fundamental rights, such as in the AI Act".<sup>109</sup>

46 There will also be similar problems of interpretative vagueness and ambiguity with other contested (ethical) concepts that need to be standardised for the AIA. This leaves ample room for interpretation, such as AI transparency<sup>110</sup> or privacy.<sup>111</sup>

47 As for the problem of inclusiveness, a 2025 report of the Corporate Europe Observatory shows how the EU standardisation efforts for AI are dominated by Big Tech.<sup>112</sup> 55% of the JTC21 members come either from corporations or consultancy, with nearly a quarter of corporate representatives coming from US industries, such as Microsoft, Amazon and Google. Only 16% come from academia/think tanks

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Decision No 1673/2006/EC of the European Parliament and of the Council, *OJ L 316*, 14.11.2012, p. 12-33.

96 McFadden and others (n 84) 39.

97 For instance, Sarah Spiekermann.

98 For instance, the IEEE has an EU-based headquarters in Vienna, where an initiative was carried out with the municipality. IEEE also uses terminology inspired by EU initiatives on AI, such as "trustworthy" and "human-centric" AI.

99 This means that AIs across sectors are subject to the same risk assessment criteria and legal requirements. A vertical approach would, by contrast, apply only to a specific AI application or sector.

100 Nativi and De Nigris (n 87) 7.

101 The EC's science and knowledge service that aims to provide evidence-based scientific support to the European policymaking process.

102 Josep Soler Garrido and others, *Harmonised Standards for the European AI Act* (Joint Research Centre, 2024) <https://publications.jrc.ec.europa.eu/repository/handle/JRC139430>.

103 *ibid* 33.

104 *ibid* 29.

105 *ibid*.

106 And, to a lesser extent, Art. 10 (data and data governance) and Art. 13 (transparency and provision of information to users).

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107 A 2023 report from CEN-CENELEC shows that 35% of CEN's standards were direct transpositions of ISO's, and 81% of CENELEC standards were adoptions of IEC's. Available at [https://www.cencenelec.eu/media/CEN-CENELEC/European%20Standardization/Documents/IC/global\\_outreach\\_dec2023.pdf](https://www.cencenelec.eu/media/CEN-CENELEC/European%20Standardization/Documents/IC/global_outreach_dec2023.pdf)

108 Athena Christofi and others, 'Erosion by Standardisation' in Maria Tzanou (ed), *Personal Data Protection and Legal Developments in the European Union* (IGI Global 2020).

109 In a response to a letter by the Corporate Europe Observatory, available at <https://corporateeurope.org/sites/default/files/2025-01/response-CEO-8Jan.pdf>

110 Högberg (n 19).

111 Kjetil Rommetveit and Niels van Dijk, "Privacy Engineering and the Techno-Regulatory Imaginary" (2022) 52 *Social Studies of Science* 853.

112 Available at <https://corporateeurope.org/en/2025/01/setting-rules-their-own-game-how-big-tech-shaping-ai-standards>

and 9% from civil society.<sup>113</sup> The report claims that such a vast representation allows industry players to play several “tactics” in the interest of light-weight standards that are difficult to enforce, such as insisting on transposing international standards or influencing national delegations. In other words, while risk bearers are suffering the most severe consequences of risks stemming from AI systems, they are hardly represented and have a chance to speak in standardisation bodies and assessment processes that aim to manage such risks.<sup>114</sup>

- 48 Also, the issues about the articulation of the concept of stakeholder involvement go beyond the case of IEEE. These processes of IEEE 7000-2021 are modeled on the phases of other international standards which might influence EU activities, such as ISO/IEC/IEEE 12207:2017,<sup>115</sup> called “stakeholder needs and requirement definition”.<sup>116</sup> This problem seems endemic for other examples of institutionalisation of ethics of AI initiatives in the EU, such as the AI High-Level Expert Group.<sup>117</sup>

## E. Concluding Remarks: The Need for a Division of Powers

- 49 To conclude, this article discussed the politics of ethical standards in the governance of AI. After a brief introduction, we mapped the IEEE initiative on

113 It must be said that there is no official list of JTC21, so the method used by the Corporate Europe Observatory is based on self-reporting. In particular, a search was conducted for variations of the term “JTC21” on LinkedIn to identify individuals who claimed to be involved in this standardisation committee.

114 On this line, the European Ombudsman initiated an inquiry on the inclusiveness and transparency of JTC21 efforts in September 2025. The inquiry addresses a complaint that the Commission has not required CEN-CENELEC to publish information about the members of the JTC21, the minutes of meetings and other documents of the working group, and has failed to ensure a balanced representation of interests for the process of developing the standards. See European Ombudsman, Inquiry into complaint 1974/2025/MIK against the European Commission (2025) <https://link.europa.eu/GGp9mT>.

115 International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and Institute of Electrical and Electronics Engineers (IEEE), ‘Systems and Software Engineering — Software Life Cycle Processes’.

116 Institute of Electrical and Electronics Engineers (IEEE) (n 34) 52.

117 Simone Casiraghi and Niels Van Dijk, “Constituting a Sovereign European Identity through AI Ethics. A Critical Exploration” in Luca Marelli and others (eds), *Project Europe. The Making of European Digital Innovation, Policy and Society* (Edward Elgar 2025).

the standardisation of AI ethics, providing a quick overview of the standardisation process at IEEE and of the content of the standard IEEE 7000-2021. Afterwards, we focused on three main criticisms of this standard, which are nevertheless applicable to similar ongoing standardisation efforts in EU bodies that are crucial for the AIA implementation: compliance, vagueness and representation.

- 50 We started the article with two research questions. First, we asked how ethics changes through standardisation and, more specifically, how ethical values transform through the standardisation process. After a close analysis of IEEE 7000-2021, we have shown how ethics (including ethical values but also concepts such as privacy or transparency) becomes an “engineering” requirement modelled on the procedures, language, logic of operationalisation of standardisation and risk. In IEEE 7000-2021, for instance, ethical values are identified and ranked and later formulated as system requirements. However, it remains challenging to translate ethical concepts into such logical specifications, and the same challenge will apply to the EU harmonised standards for the AIA.

- 51 The semantic openness of concepts such as values and fundamental rights contrasts with the need for unambiguous and precisely formulated system requirements.<sup>118</sup> Additionally, the risk-based approach is central in IEEE, like in the AIA, but “risk”, as well as stakeholders meant to evaluate it, for IEEE are intended more from the organisation’s perspective than for individuals. This discrepancy is related to the difference between the concepts of risk to the organisation vs. risk as an individual’s legal and political rights.<sup>119</sup> In the first case, the main concern is the possible damage to the reputation or trust in the organisation that an infringement might cause. Ethics standards are, in this case, mainly aimed at boosting the image of an organisation to the public’s view.<sup>120</sup> In the second case, instead, the focus

118 Kjetil Rommetveit, Alessia Tanas and Niels van Dijk, “Data Protection by Design: Promises and Perils in Crossing the Rubicon Between Law and Engineering” in Marit Hansen and others (eds), *Privacy and Identity Management. The Smart Revolution* (Springer International Publishing 2018); Niels van Dijk and others, “Right Engineering? The Redesign of Privacy and Personal Data Protection” (2018) 32 *International Review of Law* 230.

119 Van Dijk and others (n 53) 3.

120 Ansgar Koene and others, ‘IEEE P70xx, Establishing Standards for Ethical Technology’, Proceedings of KDD’18, ExCel (2018). This is not only an issue for IEEE. Other important standard organisations, like ISO, are primarily bodies for coordinating standardisation efforts by private businesses, although some of their members are governmental organisations like national standardisation bodies. Here, standards are primarily adopted by industry

is on perceptions of individual right holders, which are the basis for (legal) claims to human rights.<sup>121</sup>

- 52 Second, the more normative question of the article pertained to what the mutual roles for risk producers, assessors and bearers in the use of ethical standards for governing AI risks should be. As we are witnessing a convergence of two modes of governance of AI (institutionalised ethics and standards), we also see a shift from (mostly) public to (mostly) private actors in shaping the form these standards should take. Having more budget and personnel, Big Tech players are having a larger influence on the creation of the standards, including in European SDOs. Flexible procedures and loose rules for representation may allow industrial players to steer the agenda and direction of standards, as well as the application of the AIA more broadly, leaving little room for concerns raised by other societal interests.
- 53 We observed that the politics of risk involves a triad of actors, i.e. risk producers, risk assessors and risk bearers. What often happens in standardisation bodies is that there is no distinction between risk producers and assessors, that is, those who produce risks are also those who evaluate them, or at least risk producers have a strong hand in the standardisation and assessment process. Through their presence in standardisation bodies, risk producers can determine which risks are considered acceptable and if/how they can be mitigated. At the same time, little room is given to risk bearers, who are suffering the most consequences of such risks and who are de facto excluded from standardisation bodies and assessment processes.
- 54 For these reasons, we argue that there is a need for a division of powers between risk producers and “ethical” assessors of risk. Once the normative dimension of risk is opened up, those who are affected by the risks (risk bearers) should also have a chance to “speak”. In relation to standards, this means that alternative, dissenting voices and disciplinary diversity are also needed in standardisation working groups, especially civil society or consumer organisations that are often excluded de facto from these exercises.<sup>122</sup> For the AIA, a possible recommendation is to require standards, instead of asking the AI providers to set ethical thresholds themselves (e.g. how much bias is acceptable) as is the case in IEEE 7000-2021, to ask providers to disclose “relevant documentation, including test results, impact assessments, transparency disclosures and explanations”.<sup>123</sup> This

is just an example, and such disclosure would exceed the current reporting requirements of the AIA, but it might as well empower people or institutions, closer than providers to the context in which the AI system is actually used, to co-decide whether a system is “ethically” acceptable.<sup>124</sup>

- 55 Finally, we want to conclude by stressing that, in this article, we dealt more with the standardisation of ethics and the politics of standardisation, leaving the question of the ethics of standardisation unaddressed. The meta-question about the ethics of standardising ethics would require separate work, but we agree with the idea that standards are intertwined with moral philosophical questions that require serious scrutiny, such as “questions about who we are, how we want to live, and what is the right thing to do. The answers to these sorts of questions may incorporate expert knowledge, since that knowledge can offer new opportunities for action. But an expert claiming to have clear answers to these questions should be viewed with considerable suspicion”.<sup>125</sup>

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representatives for the benefit of the industry (but there can be some side positive effects).

121 van Dijk and others (n 53) 9.

122 Beck (n 14) 61.

123 Laux and others (n 48) 12.

124 Since similar issues may arise in other regulatory contexts, such as in Asia or the United States, comparative work across jurisdictions also represents an important direction for future research.

125 Lawrence Busch, *Standards. Recipes for Reality* (MIT Press 2011) 285.