

Context and Executive Summary

The OECD Framework to Classify AI Systems is being developed by the OECD.AI Network of Experts to help policy-makers, regulators, legislators and others assess the opportunities and risks presented by different types of AI systems to inform their AI strategies.

The International Electrotechnical Commission (IEC) and International Organization for Standardization (ISO) have together developed international standards for information and communication technologies in more than 22 areas, and the organizations' joint technical committee, ISO/IEC JTC 1, has focused on developing and maintaining standards for those technologies. Within that joint structure, the work of the technical subcommittee for artificial intelligence, SC 42, is taking an [ecosystem approach](#) by looking at emerging requirements from a comprehensive range of perspectives, such as regulatory, business, domain specific, societal, and ethical. The subcommittee has been assimilating these requirements for the context of use of the technologies it works on, translating them to technical requirements and developing horizontal deliverables that are applicable across industry sectors. This platform approach allows the subcommittee to collaborate with other organizations such as OECD.

The draft OECD Framework to Classify AI Systems is well aligned to SC 42 conceptually, particularly with respect to its focus on a risk management approach based on the generic ISO 31000 standard. The OECD framework could readily leverage some of the published work as well as benefit from and potentially shape much of the ongoing and future program of work of SC 42. In particular, *ISO/IEC TR 24028:2020 Information technology -- Artificial Intelligence -- Overview of trustworthiness in artificial intelligence* surveys and comprehensively documents topics related to trustworthiness in AI systems, which could be referenced by all four dimensions of the framework. Of note, overview of several of the terms such as trustworthiness, explainability, transparency etc. are missing in the current draft and could be addressed by referencing this TR. Like the OECD framework, SC 42 also has a strong focus on [ethics](#) with not only dedicated initiatives (e.g. [ISO/IEC TR 24368](#)) but also by integrating ethical considerations in the entire program of work.

The OECD framework correctly points out that AI powered by machine learning techniques is often known to rely on large volumes of data. Recognizing the same dependency of AI on Big Data, JTC 1 transferred ongoing work in Big Data to SC 42 where the following relevant documents have been published and may readily be referenced by the OECD Framework - *ISO/IEC 20547-3:2020 Information technology -- Big data reference architecture*, *ISO/IEC 20546:2019 Information technology -- Big Data -- Overview and Vocabulary*, *ISO/IEC TR 20547-5:2018 Information technology -- Big data reference architecture -- Part 5: Standards roadmap*, *ISO/IEC TR 20547-2:2018 Information technology -- Big data reference architecture -- Part 2: Use cases and derived requirements*. Additionally, the scope of this WG was expanded to look at all data aspects relating to AI, Big Data and analytics and a new multi-part series on data quality for ML has been initiated with four current active projects.

Lastly but most importantly, translating the OECD Framework to actionable standards/certification requirements by policymakers, regulators and organizations is a gap that could potentially leverage *ISO/IEC 23894 -- Information technology -- Artificial intelligence -- Risk management* and *ISO/IEC AWI 38507 -- Information technology -- Governance of IT -- Governance implications of the use of artificial intelligence by organizations* which are both in CD ballot stage as well as *ISO/IEC 42001 Management Systems Standards* which is in development stage. This is expected to contain AI-specific process requirements which would allow for the assessment of conformance or auditability of the processes similar to Management System Standards like ISO 9001 and ISO/IEC 27001.

Recommendations

While the entire program of work of SC 42 is relevant to the OECD framework as illustrated in Exhibit 1 in the appendix, three areas around Trustworthiness, Data and Mitigation strategies are highlighted below for immediate consideration:

1. Leverage SC 42 initiatives in Trustworthiness and Ethics

The work being done in SC 42/ WG 3 Trustworthiness is particularly important as it is closely aligned with the five OECD value-based principles for all AI actors and is relevant across all the four dimensions of the OECD framework. Like the OECD framework, SC 42 also has a strong focus on [ethics](#) with not only dedicated initiatives but also by integrating ethical considerations in the entire program of work. On the former, ISO/IEC TR 24368 not only provides an overview of the topic, it links non-technical requirements in this area to the technical work being done in SC 42 to address issues like trustworthiness. Moreover, it analyzes exemplary use cases that demonstrate ethical and societal requirements. The following documents from WG 3 are in various stages of completion and may merit closer attention from OECD:

- ISO/IEC TR 24028:2020 Information technology -- Artificial Intelligence -- Overview of trustworthiness in artificial intelligence
 - Status: Published document
- ISO/IEC TR 24027: Information technology -- Artificial Intelligence (AI) -- Bias in AI systems and AI aided decision making
 - Status: Working draft
- ISO/IEC TR 24029-1: Artificial Intelligence (AI) -- Assessment of the robustness of neural networks
 - Status: DTR Ballot passed. Comment resolution
- ISO/IEC 24029-2: Artificial Intelligence (AI) -- Assessment of the robustness of neural networks -- Part 2: Formal methods methodology
 - Status: Working Draft
- ISO/IEC 23894 -- Information technology -- Artificial intelligence -- Risk management
 - Status: CD Ballot
- ISO/IEC TR 24368: Information technology -- Artificial Intelligence (AI) -- Overview of Ethical and Societal Concerns
 - Status: Working draft
- ISO/IEC TR 5469: Artificial Intelligence (AI) -- Functional Safety
 - Status: Working draft
- ISO/IEC 25059 -- Software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- Quality Model for AI-based systems
 - Status: Working Draft

2. Leverage SC 42 work on Data/Big Data

OECD Framework and SC 42 both recognize that the data is essential to AI and its availability, quality and judicious use has broad implications for successful implementations. Big Data work was initiated as JTC 1/WG 9 in 2015 and was moved to SC 42 in 2018 creating an expanded WG - SC 42/WG 2 (Data). As a result of the earlier start, Foundational Big Data work has been completed and published in the ISO/IEC 20546 and ISO/IEC BDRA 20547 series and could be readily referenced and used by the OECD Framework. Areas of current work include an IS on process management framework for Big Data analytics and new work initiated on Data quality in the context of AI. These are very relevant to the second dimension of the OECD Framework on *Data and Input*

3. Mitigation Strategies: Align on Management System Standard (MSS) initiated in SC 42 as well as ongoing work on Risk Management and Governance

As noted in the draft document of the OECD Framework, AI technologies bring AI-specific concerns beyond those of traditional IT systems. As an example, consumers of AI products and services may lack trust in the AI supplier organization and may seek assurance that the organization addressed any concerns around fairness,

Comments on OECD Framework to Classify AI Systems and its Synergy with ISO/IEC JTC 1/SC 42

inclusiveness, accountability etc. in the AI system during development. While these have different levels of severity and consequences if unaddressed or if poorly addressed depending on the application area as illustrated in Table 1 (page 10) of the OECD Framework, there will be a need for recommending mitigating measures by regulators and policymakers.

The following initiatives in SC 42 are synergistic with the OECD Framework and should help policymakers in recommending actionable risk mitigating steps for organizations:

- MSS (ISO/IEC 42001) being developed in SC 42 will contain AI-specific process requirements which will allow for assessment of conformance or auditability of the processes. For trusted 3rd party performing a check or audit, a certificate of conformance can be issued
- *ISO/IEC AWI 38507 -- Information technology -- Governance of IT -- Governance implications of the use of artificial intelligence by organizations*. This is a joint initiative with SC 40 which is responsible for IT Governance
- *ISO/IEC 23894 -- Information technology -- Artificial intelligence -- Risk management*

4. Recommendations for future SC 42 projects

Since AI is a rapidly evolving field, it is recommended to have regular updates and exchange ideas for future standardization projects that could be initiated by SC 42.

Rohit Israni
ISO/IEC JTC 1/SC 42 Liaison to OECD
Contact: rohit.israni@intel.com

APPENDIX

EXHIBIT 1

Mapping of SC 42 Program of Work to OECD AI Framework

