INFORMATION PAPER

Frontier AI: what the international standards system offers

Geneva, 5 November 2026

Executive Summary

Frontier AI models are creating an increasingly urgent need for internationally recognized approaches to safety, security, transparency and accountability. The existing international standards system already provides a substantial foundation for this work. As partners in the World Standards Cooperation since 2001, International Electrotechnical Commission (IEC), International Organization for Standardization (ISO) and International Telecommunication Union (ITU), combine consensus-based standards, technical expertise, conformity assessment, and capacity building.

For frontier AI specifically, current and emerging work addresses several priority needs: risk and impact assessment; AI management systems; testing, verification and validation; red teaming; generative-AI quality; security and identity for autonomous agents. It also provides mechanisms through which certification bodies can verify conformity and support cross-border recognition of results.

Building on these foundations, the World Standards Cooperation can help identify remaining gaps, accelerate common approaches to frontier AI testing and evaluation, improve transparency and incident information, and expand access to testing and assurance capacity across regions. Working with governments, industry, academia, technical experts, civil society and other relevant stakeholders, IEC, ISO and ITU develop the frameworks to make evaluations of frontier AI models more consistent, internationally comparable and reproducible, thereby supporting broader efforts towards safe, secure and trustworthy AI.

Collectively IEC, ISO and ITU offer:

- **International standards development:** Established, consensus-based processes that bring together governments, industry, academia, technical experts, civil society and other relevant stakeholders to develop internationally agreed technical standards.
- **Existing AI standards:** A substantial foundation covering AI governance, risk and impact management, security, testing and evaluation, which can be applied or adapted to frontier AI.
- **Common testing and evaluation methods:** Technical expertise and ongoing work to assess frontier AI capabilities, safety, security and risks, enabling more consistent and comparable evaluations across countries.
- **Trusted conformity assessment:** International systems for testing, certification, accreditation and cross-border recognition of results that can support independent frontier AI evaluation.
- **Transparency and incident reporting:** Standards and ongoing work to support consistent documentation and internationally comparable reporting of AI incidents.
- **International cooperation and capacity building:** Global networks to identify gaps, coordinate technical work, share expertise and strengthen testing and evaluation capacity across regions.

The International Standards System and Frontier AI Models

The rapid development of advanced artificial intelligence, particularly frontier AI models, has brought questions of safety, security, accountability and human oversight to the forefront of international discussions. AI featured prominently in high-level discussions during the 2026 United Nations General Assembly High-Level Week, reflecting growing international attention to both its opportunities and potential risks.

Recent initiatives have reinforced the urgency of international cooperation. Since June 2026, the heads of leading AI companies have called for internationally accepted standards for testing frontier AI models and for shared approaches to assessing their capabilities and risks, at the G7 summit, in opinion articles and essays, and before the UN Security Council. In September 2026, Finland and Norway launched A Call for Control of Frontier AI Models, which leaders from several other countries and the European Commission have since endorsed. The Call asks companies, governments, regional organizations, and UN Member States to strengthen the testing, transparency, and oversight of the most advanced AI models, and to build on existing international mechanisms. Most recently, an open letter supported by leading AI scientists has called for stronger safeguards, independent oversight and international approaches to AI containment and incident reporting.

These calls are consistent with what IEC, ISO and ITU observe in their own exchanges with relevant stakeholders. Together, they point to a growing need for practical, internationally recognized approaches to testing, evaluation, transparency and verification of advanced AI systems.

The IEC, ISO, and ITU, partners in the WSC, are technical organizations that develop international standards and conformity assessment systems. Through their established, consensus-based and multistakeholder processes, these organizations bring together governments, industry, academia, technical experts, civil society and other relevant stakeholders.

Standards are documents, agreed by consensus, that set out requirements, guidance, or methods, for example on how to manage the risks of an AI system or how to test it. Conformity assessment, such as testing and certification, checks that products and organizations meet these requirements. Together, they form the “quality infrastructure” that countries rely on.

Complementary to standards development bodies, there is a well-established ecosystem of accreditation bodies, conformity assessment bodies—including international mutual recognition agreements of conformity assessment results—that applies the standards to provide assurance in the area of AI. This ecosystem could be further leveraged to support the testing, evaluation, and safeguards of frontier AI models, as part of the broader governance of AI.

1. How the international standards system works

International standards are voluntary. Governments may choose to reference them in regulation, public procurement, or national initiatives. For example, under the WTO Agreement on Technical Barriers to Trade (TBT), WTO members reference relevant international standards as a basis for technical regulations to avoid unnecessary barriers to trade. IEC, ISO and ITU follow the principles for developing international standards set out by the WTO TBT Committee: transparency, openness, impartiality and consensus, effectiveness and relevance, coherence, and the development dimension.

2. What already exists

2.1 International standards for AI

IEC and ISO develop international standards on AI through their joint technical committee on AI (ISO/IEC JTC 1/SC 42) in the following areas:

- **Foundations:** standards that define a common vocabulary for AI, give guidance on managing AI risks, and set out how to assess the impact of an AI system on people and society.
- **Organizational governance:** ISO/IEC 42001, the standard for AI management systems, sets out how an organization should govern its use of AI. Organizations can be independently certified against it.
- **Testing:** the ISO/IEC 42119 series outlines how to test AI systems. Its first part, an overview of AI testing, has been published as a technical specification, a type of document that can be published more quickly than a full standard where the technology is still developing.

- **Incident reporting:** ISO/IEC 25870, under development, defines the data elements, that is, the common pieces of information, to include when reporting an incident involving an AI system, so that reports can be compared across countries.
- **Impact of Frontier AI:** an international standard on risk management and impact assessment of frontier AI is under development..

ITU develops international technical standards through its Study Groups, which bring together experts from governments, industry, academia, civil society and other relevant stakeholders. These technical standards covering machine learning architecture, data and AI model handling, AI in multimedia, AI security, AI testing and benchmarking, and sector-specific applications (such as AI in health, AI in agriculture, AI in smart cities and virtual worlds, resilience to natural hazards through AI). Specifically, these include:

- **AI lifecycle standards**: ITU-T Y.3172 is one of the foundational ITU AI/ML Recommendations for the AI lifecycle. It defines an architectural framework for integrating machine learning into future networks.
- **Testing and evaluation of AI systems:** ITU-T P. series standards focus on quality measurement and assessment methodologies of AI models, some of which can support evaluation of AI-enabled telecom/multimedia services.
- **Governance of autonomous AI agents and systems:** ITU established the Focus Group on Trust and Identity for Humans and Agentic AI (FG-TIDA) to build global standards for autonomous AI agent identity.
- **AI security:** ITU-T Study Group 17 is working on standardizing secure agentic AI and trustworthy evaluation methods for Agentic AI; addressing attack surfaces like unauthorized tool execution, cross-agent identity spoofing, behavioral deception, goal hijacking, and supply-chain risks.
- **Collaboration with other UN entities on AI testing**: Partnering with entities like the WHO and WIPO under the Global Initiative on AI for Health and with FAO and World Food Programme under the Global Initiative on Food security, the ITU helps define ethical benchmarks, safety validations, and oversight mechanisms for AI applications used in health and agriculture.

To help users find their way, the WSC AI Standards Exchange Database, hosted on ITU's AI for Good platform, provides information on AI-related standards and technical reports from a broad range of standards bodies.

2.2 Checking that requirements are met: the quality infrastructure

Conformity assessment checks whether a product, service, system, or organization meets agreed requirements, through testing, inspection, or certification. **Accreditation** confirms that the bodies doing this checking are competent and impartial. Countries already rely on this system in areas such as health, electrical equipment, medical devices, and food safety.

- **The ISO CASCO toolbox** is a set of international standards, developed by ISO's Committee on Conformity Assessment (CASCO) and published jointly by ISO and IEC. They set requirements for the bodies that test, inspect, and certify products, management systems, and for the accreditation bodies that check their competence. Agreements between national accreditation bodies allow results from accredited bodies to be accepted across borders.
- **Assessment of AI systems:** ISO/IEC 42006 sets requirements for the bodies that audit and certify organizations against ISO/IEC 42001, the most adopted AI management system standard. ISO/IEC 42007 provides a high-level framework for the development of conformity assessment schemes for AI systems and together with ISO/IEC 26582 (conformity assessment for functional correctness of AI system) and ISO/IEC 26741 (description of AI system as object of conformity assessment), they create a coherent foundation for the assessment of AI systems.
- **The IEC Conformity Assessment Systems** provide globally recognized frameworks for testing, inspection, certification and verification, enabling the acceptance and recognition of conformity assessment results by participating recognized bodies across participating economies.
- **The ITU Testing Laboratories Recognition Procedure** provides a framework for recognizing testing laboratories based on their competence, impartiality and compliance with applicable ITU-T Recommendations, thereby supporting reliable conformity assessment of ICT equipment and services.

2.3 Cooperation, convening, and capacity

- **AI and Multimedia Authenticity Standards Collaboration (AMAS):** launched by WSC in 2024 to respond to the need to identify AI-generated images, audio, and video. It has published technical papers mapping the relevant standards, and policy papers, most recently in July 2026, with contributions from industry, research, and civil society.
- **Seoul Statement on AI:** A key outcome of the International AI Standards Summit hosted by the Korean Agency for Technology and Standards in December 2025. The WSC committed to reflecting the socio-technical dimension of standards, understanding the interplay between standards and human rights, building an inclusive community for standards development, and strengthening capacity building.
- **Working directly with governments through capacity building:** ISO's AI Policy and Standards Capacity Building Journey works with the AI regulators and national standards bodies of 30 developed and developing countries, to help governments use international standards in developing and implementing national AI policy, where relevant. The IEC Impact Alliance and the ISO Capacity Building on AI launched an AI impact assessment project for a publicly procured AI system based on ISO/IEC standards, in partnership with the World Bank and in collaboration with the Council of Europe.
- **AI for Good Global Summit:** ITU's AI4G summit is an established global convening platform for governments, industry and leading scientists to address emerging AI risks, international consultations on frontier AI capabilities, safety thresholds and potential risks The Summit includes a dedicated standards stream that highlights the role of standards in addressing global AI challenges. Recently the WSC partners have organized workshops on (1) testing and evaluation of frontier AI models with the objective of sharing best practices and lessons learned from the industry, AI security institutes, governments and testing labs on the trends in testing of frontier AI models, and (2) on operationalizing AI impact assessment, focusing on the interplay between legal frameworks and ISO/IEC standards, as well as, a simulation exercise for leaders and decision makers on how to respond to an AI crisis scenario.
- **AI Readiness and capacity building:** As part of ITU's AI Readiness program, ITU is organizing hackathons in countries (4th quarter 2026; Saudi Arabia, India, UAE), challenging participants to design AI solutions for education, agriculture, health, and finance.
- **UN system-wide coordination and domain expertise:** ITU and UNESCO co-chair the United Nations Inter-Agency Working Group on Artificial Intelligence (IAWG-AI), which brings together more than 50 UN entities working on AI across a wide range of sectors and domains, including health, education, agriculture, human rights, development and the environment. It connects international AI standards, testing and evaluation efforts with sector-specific needs, real-world applications and broader UN initiatives on AI governance, safety and capacity building.

3. Work under way on frontier AI

Technical work is already under way to test and evaluate the most advanced AI systems, and how to report serious incidents in a way that can be compared across countries.

- **Testing, evaluation and benchmarking:** Further parts of the ISO/IEC 42119 series on testing AI systems are in development, covering verification and validation, red teaming, and the quality of generative AI systems that respond to text prompts. ITU-T AI testing and evaluation frameworks will define standardized testing methods, procedures, and measurable evaluation criteria to enable consistent, transparent, and reliable validation of AI systems across their lifecycle. The ITU Focus Group on Embodied AI for Multimedia Technologies (FG-EAI) establishes the foundational global standards, definitions, and evaluation frameworks that link the physical actions of autonomous agents directly to Frontier AI testing protocols.
- **Incident reporting:** ISO/IEC 25870, on the data elements to include in reports of AI incidents, is in the final stages of development.
- **Trust and Identity of frontier AI**: The ITU-T Focus Group on Trust and Identity for Humans and Agentic AI (FG-TIDA) was established to address the unique challenges posed by autonomous, adaptive AI systems that can independently plan and execute tasks. The Focus Group's ongoing work focuses on defining critical governance frameworks including human-to-agent identity relationships, delegation, accountability, continuous trust evaluation, and cross-domain interoperability in order to ensure secure, trustworthy collaboration across digital ecosystems as frontier AI capabilities rapidly evolve.

4. Further work on frontier AI standards, testing and evaluation

Building on what exists, the WSC is focusing on the following areas:

- **Mapping and gap analysis:** an overview of the standards, test and evaluation methods, and quality infrastructure relevant to frontier AI, within and beyond IEC, ISO and ITU. It aims at showing what already exists, where the main gaps are, and where international collaboration would add most value. This work could also draw on the ITU–UNESCO co-chaired IAWG-AI, to identify sector-specific risks, testing needs and opportunities for collaboration, as well as the ongoing work of the Independent International Scientific Panel on AI.
- **Common approaches to testing and evaluation, developed at pace:** agreed methods for assessing the safety, security, and trustworthiness of frontier AI systems. These could be developed with agility through existing routes, with consensus building and the participation of all interested parties.
- **Transparency and incident information:** a common framework for reporting material incidents, so that they can be shared and compared across borders, building on and collaborating with other similar initiatives to avoid duplication.
- **Trusted verification:** applying the existing requirements to frontier AI, through accredited or recognized, competent and impartial testing laboratories and certification bodies, so that results can be recognized internationally.
- **Access to capacity in all regions:** knowledge transfer and capacity building on testing and evaluation for countries that do not yet have testing and assurance capacity on AI.

Through the World Standards Cooperation, IEC, ISO and ITU are committed to strengthening cooperation, identifying gaps and accelerating relevant standards and conformity assessment approaches, working with governments, industry, academia, technical experts, civil society and other relevant stakeholders. The objective is to contribute practical technical solutions that support international efforts towards safe, secure and trustworthy AI.

Philippe Metzger
Secretary-General and CEO
IEC

Sergio Mujica
Secretary-General
ISO

Seizo Onoe
Director of the Telecommunication Standardization Bureau
ITU