Committee: World Intellectual Property Organization (WIPO)

Topic: Establishing international patent standards on AI inventions

Student Officer: Ioanna Maria Ziakka

Position: Deputy President

Personal Introduction

Dear delegates,

My name is Ioanna Maria Ziakka, I am 15 years old, and I am a 10th-grade student at Platon School. It is my utmost honour to serve as the Deputy President of the World Intellectual Property Organization (WIPO) in this year's Campion School Model United Nations conference. So far, I have attended 10 conferences as a delegate, and this will be the 4th time being a Student Officer.

Having attended MUN conferences since the age of 12, I have realised that this is the ideal space for learning, growing mentally, and forming meaningful connections, as this activity has not only expanded my knowledge but has also shaped a part of my character. It has taught me to respect and listen to different opinions, and that one small action can have a huge impact on our society. By participating in MUN, I have come to understand the importance of caring, acting, developing as a human being, getting to know other people, having fun, and inspiring others. I hope that this year's CSMUN conference will provoke this feeling, inspire you in achieving your goals, and motivate you to work for a brighter future.

This study guide will introduce you to the topic of "Establishing international patent standards on AI inventions" and provide you with essential pieces of information that will prove to be essential at all times of the conference, as well as in your daily life, with the rapid growth of AI. However, I advise you to also do your own research for a more in-depth comprehension of the issue on a global scale, as well as your delegation's stance, situations related to the topic, and measures that have already been taken. If there are any issues or questions, you can always contact me through the email below. I will be more than happy to help you.

I am looking forward to meeting all of you in person!

Kind regards,

Ioanna Maria Ziakka

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Topic Introduction

Intellectual property in our days is becoming more and more complex. Historically, there have been numerous ways in which intellectual property can often be protected with formal registrations, particularly with copyrights, trademarks, trade secrets, and patents[1]. For patents to be granted, the usual criterion is for the creator of the invention to be a human. This comes from a legal definition of an inventor as a natural person, that is, a human being who has legal personhood and mental capability. Since AI lacks both, it is conditional or artificial, and therefore does not meet the definition of inventorship. As a result, AI, which has no legal personality, cannot be an inventor under current patent law. However, many AI-generated results today closely resemble traditional human inventions, producing complex designs, engineering solutions, and new ideas with minute human input. This not only poses questions as to whether AI can be considered as an inventor on its own, but the course of action when the inventor is not a human.

This underlying problem is based on the continued insistence by patent laws around the world on a human inventor, even as AI systems are now able to independently produce novel, useful, and inventive ideas. Despite this apparent advance, there is no formal or explicit international agreement on what should be done with respect to the originality, ownership rights, or inventorship of AI-generated inventions—in particular, when the inventions are formed independently (non-human coder data inputs) by AI models. However, South Africa was the first country to explicitly recognise an AI system—DABUS—as the inventor on a patent application. In this case, while the AI produced the inventive concept, human programmer Dr. Stephen Thaler was listed as the applicant and owner of the patent rights. Be that as it may, the solution to this crucial problem persists, with ample legal uncertainty, varying patent outcomes, and barriers to global innovation.

Without establishing international patent standards on AI inventions, countries are likely to produce inconsistent patent decisions, regulatory uncertainty over the ownership and inventorship problems,

[1] Leslie, Hayley. “How Companies Can Protect Their Intellectual Property - TV Edwards Solicitors.” *TV Edwards Solicitors*, 10 Dec. 2024, tvedwards.com/news-and-blogs/blogs/how-companies-can-protect-their-intellectual-property/.

greater litigation leads on inventorship, lower incentive to innovate, and inconsistent globalisation to a fragmented IP system that reduces trust in new and emerging technologies.

Establishing proper patent standards for AI inventions, thus, is paramount to the theme of "Free Will in the Age of Artificial Intelligence", as it is a profound challenge to legal, ethical, and technological frameworks. Unclear patent laws negate wider free will because uncertain directions hinder people from making autonomous decisions of ownership, liability, and innovation. Freedom to create, protect, and profit from one's original work in AI is inhibited without legal clarity.

Definition of key concepts

Artificial Intelligence (AI)

"Artificial intelligence (AI) refers to computer systems that can perform complex tasks normally done by human reasoning, decision making, creating, etc."[2] Platforms such as ChatGPT, Quark, Deepseek, and Gemini are amongst the most successful and popular AI platforms globally.[3]

Invention

"An invention is a product or a process that provides a new way of doing something or offers a new technical solution to a problem that surpasses trivial solutions."[4] Legally, an invention must be original, non-obvious, and useful to qualify for a patent.

Patent

"A patent is an exclusive right granted for an invention, which benefits inventors by providing them with legal protection of their inventions, as well as society, by providing public access to technical information about these inventions, and thus accelerating innovation." [5] As Artificial Intelligence begins producing outputs that are similar to humans, many legal and ethical challenges are provoked due to the lack of clear definitions around authorship, ownership, and accountability in AI-generated innovation, as well as the absence of consistent international standards to govern such inventions. The threshold for a patent is that the invention must be new, non-obvious, and useful.

[2] "What Is Artificial Intelligence?" *NASA*, NASA, 13 May 2024, www.nasa.gov/what-is-artificial-intelligence/.
[3] "Most Popular AI Apps (2025)." *Backlinko*, 20 Feb. 2025, backlinko.com/most-popular-ai-apps.
[4] Patents." *Patents*, www.wipo.int/en/web/patents.
[5] "Patents." *Patents*, www.wipo.int/en/web/patents.

International Patent

An international patent is a patent that not only applies to a single country or region, but to many different countries. However, it does not mean that there is a worldwide patent .[6]

International Searching Authority (ISA)

"The International Search Authority (ISA) is an organisation designated by the World Intellectual Property Organization (WIPO) to perform international searches (patent database reviews for prior inventions), on patent applications filed under the PCT."[7]

Patent Coordination Treaty (PCT)

"The Patent Cooperation Treaty (PCT) is an international treaty administered by the World Intellectual Property Organization (WIPO) that allows inventors to seek patent protection for their inventions in a large number of countries by filing a single 'international' patent application."[8]

Litigation

"The process of taking a case to the court of law so that a judgment can be made."[9]

IP5

"The five IP offices (IP5) is the name given to a forum of the five largest intellectual property offices in the world that was set up to improve the efficiency of the examination process for patents worldwide."[10]

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[6] Ministry of Business, Innovation and Employment. "International Patents." *Intellectual Property Office of New Zealand*, www.iponz.govt.nz/get-ip/patents/international/.

[7] admin. "Choose an International Search Authority for PCT Application." *TT CONSULTANTS*, 20 Feb. 2023, ttconsultants.com/which-international-search-authority-should-a-pct-applicant-choose/.

[8] World Intellectual Property Organization. "Protecting Your Inventions Abroad: Frequently Asked Questions About the Patent Cooperation Treaty (PCT)." *WIPO*, n.d., https://www.wipo.int/en/web/pct-system/faqs/faqs. World Intellectual Property Organization. "Patent Cooperation Treaty (PCT)." *WIPO*, n.d., https://www.wipo.int/treaties/en/registration/pct/.

[9] Cambridge Dictionary. "LITIGATION | Meaning in the Cambridge English Dictionary." *Dictionary.cambridge.org*, dictionary.cambridge.org/dictionary/english/litigation.

[10] "About IP5 Co-Operation." *Fiveipoffices.org*, 2017, www.fiveipoffices.org/about.

Background Information

Types of Patents

Intellectual property protection has many forms, such as trademarks, trade secrets, copyrights, and patents. Patents are exclusive rights that are granted for each invention, after its inventor has applied. There are three categories.

Utility Patents

Utility patents are one of the three types of patents, and the most common one. Based on the 35 U.S.C. § 101, the section of the United States Code that defines what subject matter is eligible for a patent under U.S. law, patents "may be granted to anyone who invents or discovers a new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvements of these."[11] When a utility patent is authorised, AI cannot be a legal inventor, and AI-generated inventions without human involvement are not patentable. The efficiency of utility patents is noticeable, as they protect a variety of different inventions, especially in an era where technology is advancing rapidly. Protecting technological progress and encouraging innovation by giving inventors exclusive rights to their work for a limited time, utility patents generally last for 20 years from the date of filing, making them a long-term investment in research and development. In an invention where AI is involved, it cannot be recognised as a legal inventor, meaning that AI-generated inventions without meaningful human involvement are not patentable, due to the concept of inventorship that is tied to legal responsibility, intention, and the capacity to hold rights and obligations, which are qualities that AI systems are not believed to possess. The DABUS - "Fractal Container" was an invention for which a utility patent was requested, but eventually got rejected by patent offices in the U.S., U.K., E.U., and other countries, as courts and patent offices have ruled that AI is not a legal person, and therefore cannot be an inventor under current law. [12]

Plant Patents

The development of AI has approached multiple sectors, particularly biology and the natural sciences. Despite the seldom use of the plant patent, it protects a distinctive new variety of plants

[11] "Applying for Patents." *Www.uspto.gov*, www.uspto.gov/patents/basics/apply.
[12] *Solving the DABUS Problem*. www.bakermckenzie.com/-/media/files/people/newman-bradford/ipm--solving-the-dabus-problem-june-2021.pdf?la=en&

that can be discovered with AI. The use of AI may aid in procedures such as genetic prediction or selection, the simulation of breeding outcomes, as well as the optimisation of the growth conditions in controlled environments. However, even if AI may contribute to such inventions, AI still cannot be characterised as their inventor, and under current law, such as Article 81 and Rule 19(1) from the European Patent Convention (EPC)[13], an invention where AI is involved may only be patentable if the inventor is a human. A main reason for the implementation of such a law is that AI, despite its level of training, lacks consciousness, legal standing, and accountability. In the U.S. Plant Patent PP34,043 – *'KORhesanwes' floribunda rose*[14], AI had the role in the breeding prediction, and the trait selection, and was granted, under the condition that it was human-directed and finalised. The reason behind this invention being patented was that even though AI was used as a tool, a human made the final inventive decisions, which met the legal requirements under 35 U.S.C. § 101.

Design Patents

Design patents are focused on and protect only the ornamental appearance or aesthetic design of a functional item. They only protect the appearance of a shape or the configuration of an object, and do not cover the technical functionality of the overall product. When AI is used in an invention, AI cannot be the legal inventor or designer, and design patents require human-led creativity. Commonly, a design patent lasts up to 15 years after the application of the patent is granted, and offers a way to safeguard creative, non-functional aspects of invention.

[13] "Rule 19 – Designation of the Inventor." Epo.org, 2024, www.epo.org/en/legal/epc/2020/r19.html
[14] "U.S. Patent for Floribunda Rose Plant Named 'KORhesanwes' Patent (Patent # PP 34,043 Issued March 22, 2022) - Justia Patents Search." *Justia.com*, 7 May 2021, patents.justia.com/patent/PP34043.

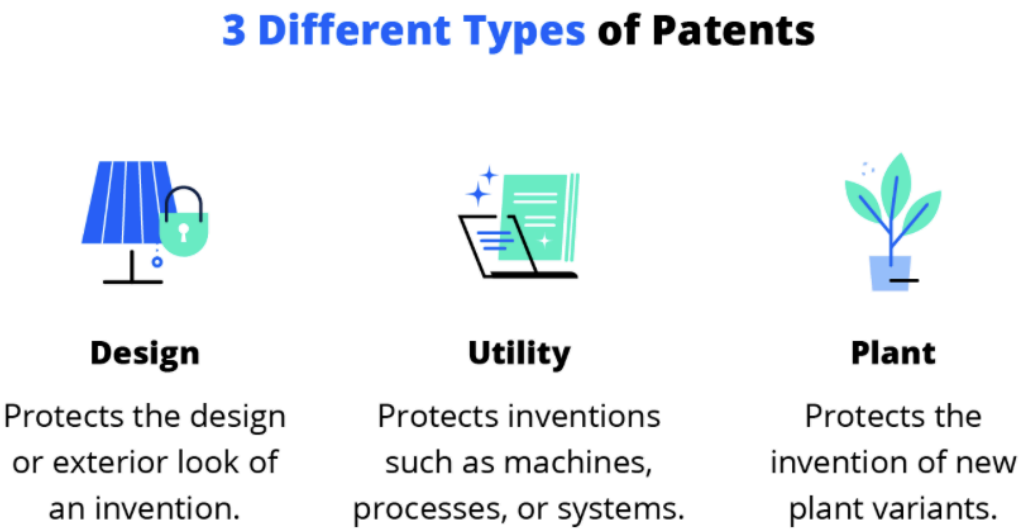

Figure 1: Type of Patents[15]

The International Patent System - PCT

The Patent Cooperation Treaty (PCT) is the International Patent System that is administered and regulated by the World Intellectual Property Organization, established on June 19, 1970, and involving 158 Contracting States, allowing entrepreneurs to streamline international protection, foster foreign partnerships, postpone major costs, and create licensing opportunities, entailing a more efficient and unified pathway for securing all patent rights in a global scale, avoiding multiple separate fillings[16]. The PCT provides a unified procedure for filing patent applications to seek protection in multiple countries simultaneously. Before its establishment, inventors were filing separate patent applications in each country, often in different languages and under different legal systems, which made the procedures complex. With the PCT, inventors now have the opportunity to avoid long-lasting procedures. The PCT has not only brought ease to numerous inventors who want to protect their inventions, but has also reduced costs by circumventing the need for national filings and associated translation, attorney, and official fees, which resulted in making it a cost-effective solution for global patent protection. In addition, the PCT has a positive impact from the perspective

[15] "How Do Patents Act as an Incentive to Technological Innovation? | Cypris." *Cypris.ai*, 2023, www.cypris.ai/insights/how-do-patents-act-as-an-incentive-to-technological-innovation.
[16] World Intellectual Property Organization (WIPO). *"The International Patent System (PCT)."* WIPO, 2023, https://www.wipo.int/pct/en/.
"Five Ways Entrepreneurs Can Benefit from the PCT." *Ipday*, 2022, www.wipo.int/en/web/ipday/2022/toptips/pct.

of global collaboration, as it fosters coordination between patent offices, reducing workload duplication and helping to harmonise international IP standards.[17] The Unified Patent Court[18] is also important, as a complementary development, specifically within the European context, as it provides a centralised legal system for patent litigation in participating European countries. With 17 countries being a part of the UPC, many benefits, such as consistency and predictability, cost efficiency, and stronger enforcement, can be provided.

The Patent Cooperation Treaty and Artificial Intelligence Innovations

The PCT is vital in enabling international protection for inventions, especially those developed with AI. Under current legal frameworks, AI cannot be listed as an inventor; however, AI-assisted inventions are eligible for patent protection through the PCT if a human inventor is designated and the invention meets standard patentability requirements. Even in inventions and circumstances where AI is heavily relied upon (e.g., to generate technical solutions or when involved in a problem transfer), the application can still be successful, as long as a human has a significant contribution to the invention (e.g, directing, selecting, or confirming the output from the AI component). Thus, the human is considered to be the legal inventor, and therefore the invention meets the criteria for any area of law under which it might qualify. An invention that has been patented by the PCT is the patent number WO2024158398A1[19], which is an AI-assisted invention[20]. It is a utility patent, as it protects a method and system, and focuses on how generative AI is used to create technical patent drawings automatically from prompts or inputs. This AI invention got patented because even though the invention uses AI, the creative and technical conception came from a human.

[17] "Pct – The International Patent System." *Pct-System*, www.wipo.int/en/web/pct-system. Accessed 25 June 2025.
[18] "Court Presentation | Unified Patent Court." *Unifiedpatentcourt.org*, Unified Patent Court (UPC), 2025, www.unifiedpatentcourt.org/en/court/presentation.
[19] "WIPO - Search International and National Patent Collections." *Wipo.int*, 2025, patentscope.wipo.int/search/en/WO2024158398
[20] Bhattarai, Manish, et al. "Diagram Image Retrieval Using Sketch-Based Deep Learning and Transfer Learning." 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), June 2020, pp. 663–72, https://doi.org/10.1109/cvprw50498.2020.00095.

Current Challenges

Inventorship and Attribution Issues

The challenges faced throughout the procedure of establishing international patent standards on AI inventions have been historic. One of the main challenges that hinders the establishment of such standards is that inventorship is still not determined. AI is a powerful tool that is trained based on human-generated data, and in most cases, the results from AI use data that needs to be protected. While humans are mostly the inventors of inventions that have been patented, there have been occasions in which inventions with AI as an inventor have been patented. For instance, in South Africa, patent No. 2021/03242 was patented under the South African patent law (Patent Act No. 57 of 1978). However, the question of whether AI is considered an inventor still remains.

Ownership Ambiguities in AI-Generated Inventions

Assessing patent right ownership is also one of the numerous barriers to establishing standards on AI inventions, as it is essential to ensure that the legal protection provided by the patents is granted to the true inventor who has advanced technology and innovation. When it comes to ownership, the question still remains on who authorised the legal ownership of an invention, as there is no legal consensus on whether the owner of the patent, if granted, is the human user, the AI system, or the organisation that developed the AI. In addition to that, one of the main challenges is that the legal system has not yet adapted to determine how property rights should be allocated.

Procedural Complexity and Rapid Technological Change

The complexity of the procedures of filing for a patent, combined with the guidelines that will need to be followed in order to approve AI technologies, is changing and innovating rapidly, meaning that the guidelines will need to be changed based on the needs that inventions will have at all times. Technology is advancing at a very rapid rate, making it increasingly difficult for laws to keep up at the same time. This means that if rules do not adapt, patents will not be able to protect AI inventions at all, as the patent offices may lack the tools or rules to judge AI inventions properly.

Case Study: Thaler v. USPTO (United States, 2020–2022)

Dr. Stephen Thaler filed patent applications in multiple jurisdictions, naming the AI system he developed himself, DABUS (Device for the Autonomous Bootstrapping of Unified Sentience), as the

sole inventor of two inventions (a food container and a flashing light beacon). The United States Patent and Trademark Office (USPTO) decided that Thaler's invention wouldn't be patented, and his application was rejected. This is because under the U.S. patent law (35 U.S.C. § 100(f), only humans can be inventors. In 2021, the U.S. District Court for the Eastern District of Virginia upheld the USPTO's decision. In 2022, the U.S. Court of Appeals for the Federal Circuit reaffirmed it and claimed again that humans may be the only inventors for an invention to be patented. This precedent is crucial, as it clarifies the legal threshold for inventorship in the U.S., as well as reinforcing the human-centred foundation of its patent system.

Date	Description of the event
19 June 1970	The Patent Cooperation Treaty (PCT) is created, with 158 contracting states.
15 June 1964	The Group of 77 is created at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD).
2007	The IP5 is created, uniting the five largest intellectual property offices in the world.
April 2018	White Papers on AI and IP were published by the World Economic Forum (WEF).
2020-2022	Thaler v. UPSTO: Court rejects AI inventor patent claims.
5 November 2020	The EU Commission – IP Action Plan is adapted.
28 July 2021	The first AI invention was patented in South Africa.
14 April 2022	Stanford HAI proposals for AI-Inventorship models suggest legal framework alternatives.
14 November 2023	The IP5 Comparative Table on AI-Related Patent Practices is realised.
13 February 2024	USPTO releases formal guidance confirming AI-generated inventions.

5 July 2024	Oxford IP Centre proposals for AI-Inventorships models recommend balanced policy approaches.

Major countries, organisations and alliances

Japan

Japan has had a significant impact on technology, and has been developing in the intellectual property sector, especially when it comes to AI. The Japan Patent Office (JPO), in cooperation with all Japanese authorities and policymakers, has refined the patent system that has been used for lots of years, based on the needs of each period in such ways in order to support innovation, safe and fast technological advancement, as well as economic growth[21]. AI and its growth had been recognised by the JPO, and together with the IP5, as it is a member of it, there have been measures taken such as the IP5 Comparative Table on AI-Related Patent Practices of 2023[22], which had numerous case studies, and the examination of criteria and alignment of legal text from Japan, U.S., Europe, China, and South Korea. This measure has had a significant impact, as a big part of the issue has been resolved, because exam uniformity has improved at a great rate, and uncertainty for applicants submitting in several nations has decreased.

China

China has become a global leader in both AI development and international patent filings for many years. China is one of the largest users of the International Patent System[23], having the Chinese National Intellectual Property Administration (CNIPA) serving both as a receiving office and an International Searching Authority (ISA) under the PCT system, in which it is a member. Under Article 11 of China's Patent Law, AI-generated inventions still must list a human inventor, and AI is currently

[21] *Initiatives on Examining AI-Related Inventions at the Japan Patent Office*. 2022, www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_ss_3.pdf.
[22] "Comparison of Examination Practices on AI-Related Inventions ~ of TAIYO, NAKAJIMA & KATO." *TAIYO, NAKAJIMA & KATO*, 2023, www.taiyo-nk.co.jp/en/news/japan/news/20231114.html.
[23] World Intellectual Property Organization (WIPO). *"World Intellectual Property Indicators 2023."* 2023, www.wipo.int/edocs/pubdocs/en/wipo-pub-941-2023-en-wipo-pct.pdf.

not recognised as an inventor. Being a part of the union of the 5 largest intellectual property offices on a global scale, China has been contributing in multiple actions, such as the WIPO discussions on standardising treatment of AI patents internationally, and along with that, in 2023, a comparative table of AI patent examination practices was realised, aiming at aligning global standards.

United States (US)

The United States has a remarkable approach to international AI patents through the Patent Cooperation Treaty (PCT) and its domestic legal stance on AI inventions. Since establishing the United States Patent and Trademark Office (USPTO) as a Receiving Office and International Searching Authority (ISA) under the PCT in February 2024, it has further strengthened its global leadership by offering the applicants in the US multiple international search and examination services, which help in ensuring reliability, consistency and a formed strategy in shaping standards for patents on AI inventions on a global scale[24]. The USPTO has released a formal guidance in which it was confirmed that AI-generated inventions which did not have human inventorship cannot be patented, leading to the enforcement of existing statutes. For an invention to be patented, AI cannot be listed as an inventor, as the USPTO maintains that only natural persons can be inventors. This approach is remarkable, as it combines global leadership with a firm legal stance on AI and patents, by means such as providing legal certainty, shaping international dialogue, and allowing international collaboration while at the same time firmly protecting the human-centred foundation of its patent system.

Russia

Russia has a significant patent office, Rospatent, which serves as both a Receiving Office and an International Searching Authority (ISA). Regarding the Russian legislation on AI and patents, Russia does not recognise AI as an inventor[25], and does not yet have AI-specific guidelines concerning patents[26]. The use of existing criteria under the Civil Code can protect inventions that constitute a

[24] World Intellectual Property Organization (WIPO). *"PCT Applicant's Guide – National Chapter – US."*www.wipo.int/pct/en/texts/pdf/us.pdf.
[25] Zuykov and partners. "Problems of Patent Protection of Inventions Created by AI - Article Zuykov and Partners." *Zuykov.com*, June 2023, zuykov.com/en/about/articles/problems-of-patent-protection-of-inventions-created-by-ai/.
[26] "Questionnaire on Exceptions and Limitations to Patent Rights." *Scp*, 2023, www.wipo.int/en/web/scp/electronic-forum/exceptions/replies/russia

new, inventive, and industrially applicable technical solution, as according to Article 1350 of the Russian Civil Code, mathematical methods, algorithms, and software as such from patentability are excluded,, unless they contribute to a technical result, in which case they can be patented providing the invention produces a definitive technical effect. These effects may be the improvement of computer efficiency, the control of an industrial process, or improving data transmission, as opposed to simply performing abstract calculations or even running generic codes. While there are amendments to Russia's examination regulations, which introduced clearer definitions around "technical solutions in IT and AI fields", these changes are still general and do not establish fully-fledged AI-specific guidelines.[27]

South Africa

South Africa has had a significant approach in patents and AI, as it is the first country to grant a patent listing an AI system (DABUS) as the inventor. Even if South Africa is a contracting state of the Patent Cooperation Treaty (PCT), it does not have an International Searching Authority (ISA), and based on South African law, inventors are allowed to file international applications under the PCT in order to seek protection across multiple jurisdictions, as well as benefit from the faster and less expensive procedures that are needed. The patent No. 2021/03242 was patented under the South African patent law (Patent Act No. 57 of 1978), in which the inventor is not explicitly defined as a human person, something that led to the acceptance of the filing by the CIPC (Companies and Intellectual Property Commission)[28]. DABUS simulated human-like thinking, resulting in the production of an idea, which made it the first AI to be officially named as an inventor on a granted patent, marking a global legal milestone.

India

India is a country that does not recognise AI as an inventor, and its patent system requires human inventors. It has the Indian Patent Office (IPO) serving as both a Receiving Office[29], an International Searching Authority (ISA), and an International Preliminary Examining Authority (IPEA). Based on

[27] PARTNERS, GORODISSKY. "IP News Overview: Russia & CIS (March to August 2023)." *Gorodissky.com*, 2025, www.gorodissky.com/publications/newsletters/ip-news-overview-russia-cis-march-to-august-2024/.
[28] Conlon, Ed. "DABUS: South Africa Issues First-Ever Patent with AI Inventor." *MIP*, 29 July 2021, www.managingip.com/article/2a5bqo2drurt0bxl7ab1q/dabus-south-africa-issues-first-ever-patent-with-ai-inventor.
[29] World Intellectual Property Organization. *"PCT Applicant's Guide – National Chapter – IN."* https://www.wipo.int/pct/en/texts/pdf/in.pdf

Indian law, AI-assisted inventions are patentable if a human makes the core inventive contribution. While there are rising numbers of AI-related PCT filings, the Controller General of Patents rejected an AI system (DABUS) as an inventor in 2021, as the inventor was not a human, on the grounds of the Indian patent law, which only recognises humans as inventors[30].

Group of 77 (G77)

"The Group of 77 was established on 15 June 1964 by seventy-seven developing countries signatories of the "Joint Declaration of the Seventy-Seven Developing Countries" issued at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva"[31]. Its role is to advocate for equity and inclusion, demand flexibility in patent systems, and shape WIPO dialogue on AI and IP. The G77 does not legislate but acts as a policy advocate, working to lobby for equitable, fair, and developmentally advantageous international patent standards, something which is particularly important because of the development of AI-generated and AI-assisted inventions. The G77 urged the creation of a global legal instrument or guidelines on AI and IP that reflect the interests of developing nations, which resulted in inclusive policy discussions on AI inventorship, human oversight, and equitable access to patent protection.

IP5

The IP5 consists of the 5 largest intellectual property offices[32] (the USPTO-United States, the EPO-European Commission, the JPO-Japan, the KIPO-South Korea, and the CNIP-China). The union of the 5 largest intellectual property offices is of significant importance, as in that way around 90% of the world's patent applications are controlled.[33] Established in 2007[34], the IP5 has contributed to the establishment of international patents in ways such as reducing the difficulty of procedures that need to be taken, as well as supporting inventors and the protection of their inventions by enhancing

[30] Office of the Controller General of Patents, Designs & Trademarks (CGPDTM), India. *Annual Report 2022–2023.* https://ipindia.gov.in/writereaddata/Portal/IPOAnnualReport/1_122_1_Annual_Report_2022_23_English.pdf

[31] Group of 77. *About the Group of 77*. United Nations, 2024. https://www.g77.org/doc/

[32] "IP5 Offices Publish Overview of Examination Practices for AI-related Inventions." *IP5 Office Portal*, 2023. https://www.fiveipoffices.org/news/2023/ai-inventions-table

[33] "About IP5 Co-Operation." Fiveipoffices.org, 2017, www.fiveipoffices.org/about.

[34] "About IP5 Co-Operation." *Fiveipoffices.org*, 2017, www.fiveipoffices.org/about.

safety, with measures such as the Comparative Examination Table (2023)[35], which showcases the procedures and methods on how patent offices should handle AI-related patent applications. This measure has increased legal transparency and reduced jurisdictional discrepancies.

Previous attempts to solve the issue

EU Commission – IP Action Plan (2020)

The European Union - Intellectual Property Action Plan in 2020 had a significant impact on patents related to AI. For many years, the EU Commission has focused on the challenges that AI creates for patent law, especially when it comes to who can be named as an inventor and who owns AI-assisted inventions. Having been working closely with the European Patent Office (EPO) to update guidelines and make patent examination clearer, this cooperation reinforced guidance from the EPO stating that AI cannot be recognised as an inventor under the European Patent Convention, as multiple other countries have stated, and facilitated consultations and dialogues to assess whether future reforms to the EU IP legal framework are needed for the adaptation to the evolution of AI-generated innovations.

Stanford HAI & Oxford IP Centre – Academic Proposals for AI-Inventorship Models (2021)

Stanford HAI and the Oxford Intellectual Property Centre have developed academic proposals addressing the complexities of AI inventorship: the Hybrid Inventorship and the "Disclosure-based AI Inventorship" models. Both the framework by Stanford and the one from Oxford proposed the creation of mechanisms that would engage in the procedure of acknowledging both human and AI contributions in the inventive process. The hybrid model promoted the shared recognition of human and AI contributions to all the procedures that an invention had to go through; the Disclosure-based AI model focused on full transparency about AI's involvement during patent application. Both attempts had a significant impact because they successfully stimulated serious debate on global forums. However, they have not yet been adopted into formal legislation.

World Economic Forum (WEF) – White Papers on AI and IP (2022)

[35] European Patent Office. *Comparative Table of Examination Practices on AI-Related Inventions by the IP5 Offices*. EPO, 2024. https://link.epo.org/ip5/exam_pract_AI-related_2024.

The World Economic Forum (WEF), through its white papers on AI and intellectual property, has served as a global coordination platform. The white paper of the WEF has raised awareness on the issue, especially about the increased need for international patent policies, as well as the coverage of multiple gaps that exist in IP systems regarding AI inventorship, ownership, and transparency. Despite the zero holdage of WEF on legal authority, it has contributed significantly to shaping regulatory conversations, inspiring and aiding national IP offices, and fostering international dialogues between multiple countries for the establishment of easier procedures during the evolution of AI technologies.

Possible solutions

Standardise AI-Specific Patent Examination Guidelines Across Major Offices (IP5)

Standardising AI-specific patent examination guidelines involves the alignment of different patent examination processes for AI-invented or related inventions, among the five largest intellectual property offices (UPSTO, EPO, JPO, KIPO, CNIPA), which make up the IP5. The main goal that may be set, and overall achievement of this measure, would be to reduce inconsistencies, improve legal certainty on the use of the AI, and streamline the application process across jurisdictions by establishing inventor eligibility standards, as well as criteria for AI-assisted invention. This implementation can ameliorate international cooperation and reduce conflicting outcomes on whether an invention may or may not be patented. To achieve efficiency, speed, and timeliness, it would require the legislative process to be coordinated early, through WIPO and the IP5, along with the establishment of a task group that is made up of each office's legal, technical, and policy experts. Sufficient timelines have to be established for the drafting, consultation, and adoption phases, including sharing databases of data, designations examiners, and educating examiners to ensure there is consistency in the way the applications are examined. Standardising guidelines on AI inventions would focus on inventor eligibility and technical contribution for AI-generated and AI-assisted inventions to ensure they are consistently examined across all jurisdictions.

Global Recognition of “Human-Assisted AI Inventions” Only

A specific solution to achieve global recognition of “Human-Assisted AI Inventions” would be the development of a multilateral treaty under WIPO. More specifically, the main role of the treaty could

cover the establishment of a clear, internationally accepted definition of AI-assisted inventions, in which the human makes the core contribution, despite the significant supportive role of AI. Considering that AI is trained on human invented data and that it has started to take the role of the inventor or a tool that aids in the procedure of invention, allowing flexibility in national implementation is a way that can reduce legal uncertainty on the approval of patents guided by setting compulsory minimum levels of human contribution, open disclosure provisions and standardised test guidelines with provision for countries to have further procedural or technical nuances in line with their juridical systems as long as they stay within the general principles of the treaty for a combined global consensus, align examination practices, and support responsible global innovation in the age of AI. The actual impact of a treaty could be more uniform patenting outcomes, better legal clarity for inventor and examiner alike, and a better way for cross-border innovation. If the treaty were to emphasise the natural person's role, some provisions might require clear disclosure of the human's contribution, minimum standards of human contribution, and examination guidelines to identify the human involvement in AI outputs.

Implement a Tiered Patentability Framework

A tiered patentability framework is a solution that engages in creating different categories for inventions, which will be based on the extent of AI involvement. The creation of different tiers can help in the procedure of indicating the different levels at which AI is used when inventing, something that will be able to show how much contribution AI has had to an invention, and it would be easier to clarify inventorship and the percentage and level of human contribution per invention, while strengthening the integrity of the patent system. This tiered approach could be established with an algorithmic tool that engages with AI in order to not only systematically measure but also categorise the extent of AI involvement, but it would also help multiple applicants and patent examiners identify the appropriate tier of classification and provide the appropriate transparency and consistency in the treatment of AI-assisted inventions. Differentiated legal treatment and examination standards can definitely be allowed by such a measure, resulting in the assurance that patents can clearly recognise and account for the better capture, as well as indicate the actual balance between the human creativity and AI support in the process of creating an invention, and in comparison to the existing processes, this framework would prove to be effective, as current systems

do not measure or disclose the extent of AI's involvement, treating inventorship as solely human without accounting for varying levels of AI contribution.

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