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THE CONUNDRUM OF RECOGNIZING ARTIFICIAL INTELLIGENCE AS AN INVENTOR VIS-À-VIS INTERNATIONAL PATENT REGULATIONS

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ABSTRACT

Machines now perform tasks without the need for human intervention, taking over jobs that humans once held in the workforce. Artificial intelligence (AI) has a significant impact on many different industries. The DABUS Case, which posed a fundamental challenge to the accepted paradigm of granting patent rights, one that previously recognized only humans (or, in some jurisdictions, government entities) as legitimate inventors, served as a notable example of this transformation in the area of intellectual property rights.

The fascinating issue of "whether Artificial Intelligence (AI) can be acknowledged as an inventor in accordance with both Indian Patent Regulations and more general international patent regimes" is explored in this article. The article examines the decisions made by authorities in several nations on Dr. Thaler's patent application. The curious situation in Australia, where the early recognition of DABUS as the inventor was later reversed, is also examined. The article also closely examines the South African case where DABUS's ideas received patent protection.

Keywords – Artificial Intelligence, DABUS, Patent Rights, Inventor, Human.

INTRODUCTION

The DABUS event makes us ponder if an Artificial Intelligence (AI) can be acknowledged as the inventor in accordance with Indian Patent Regulations or any other international patent regime.[2] *"The Device for the Autonomous Bootstrapping of Unified Sentience",* or DABUS, is a piece of Artificial Intelligence (AI) credited to Dr. Stephen L. Thaler.[3] By acting as a "creative machine,"

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[2] Jackie O'Brien & Isobel Taylor, *The year that was for DABUS, the world's first AI 'inventor'*, Inside Tech Law (December 13, 2021), https://www.insidetechlaw.com/blog/the-year-that-was-for-dabus-the-worlds-first-ai-inventor (Last Visited on Oct 10, 2023).

[3] Dr. Athira P. S., *Protection of Artificial intelligence originated inventions: the DABUS/thaler effect*, RFMLR RGNUL (May 30, 2022), https://www.rfmlr.com/post/protection-of-artificial-intelligence-originated-inventions-the- dabus-thaler-effect (Last Visited on Oct 10, 2023).

DABUS has the capability to produce novel ideas on its own without the need for human input.[4] Dr. Thaler claims that DABUS independently came up with the patent's subject matter. He claims that DABUS is the creator of two patentable inventions: a food container with fractal geometry that allows for quick reheating and a flashing beacon intended to draw attention in an emergency.[5]

Dr. Thaler filed the patent application in several countries like the USA, India, Australia, the European Patent Office, South Africa, Canada, etc. and almost all countries responded in a similar way by rejecting Dr. Thaler's application for providing a patent to two inventions invented by an Artificial Intelligence device DABUS without the help of the any Human Input.[6] Although in Australia DABUS got partial success, at first the Australian Federal Court[7] ruled that DABUS may be designated as *'Inventor'* after determining that the term *"Inventor"* as used in the Australia Patent Act is not solely limited to the living person. The Federal Court of Australia's entire bench, in contrast, overturned its judgment by declaring that, in accordance with the Australian Patent Regulations, only a human can be an inventor.[8] Notably, however, in 2021, the South African Patent Authority, 'Companies and Intellectual Property Commission of South Africa," or CIPC, became the first patent office to ever award a patent to an artificial intelligence (AI) inventor instead of a human.[9]

This article examines the patent systems of India, the USA, the UK, Australia, South Africa, and the European Patent Convention (EPC) in-depth with a focus on evaluating the potential acceptance of Artificial Intelligence as the designated inventor within their respective frameworks. The author also analyses the judgments handed down by authorities in several nations in relation to Dr. Thaler's patent application. The article also looks into the curious case of Australia, where the initial recognition of DABUS as the inventor was later overturned. The author also closely examines the South African case where patents were given to DABUS for its inventions. The author concludes by assessing the positions taken by these various authorities and taking into

[4] Id.

[5] Ryan Abbott, The Artificial Inventor Project, WIPO Magazine (December 2019), https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html (Last Visited on Oct 10, 2023).

[6] Kingsley Egbuonu, The latest news on the DABUS patent case, IP Stars (July 11, 2023), https://www.ipstars.com/NewsAndAnalysis/The-latest-news-on-the-DABUS-patent-case/Index/7366 (Last Visited on Oct 10, 2023).

[7] Thaler v Commissioner of Patents [2021] FCA 879.

[8] Matthew Horton & Austin J. Kim, Australia Appeal Decision Reverses Direction on AI Inventorship, Foley & Lardner LLP (18 April 2022), https://www.foley.com/en/insights/publications/2022/04/australia-appeal-decision-reverses-ai-inventorship (Last Visited on Oct 10, 2023).

[9] Christopher Mhangwane & David Cochrane, South Africa was wrong to patent an AI's 'invention', Tech Central (December 8, 2022), https://techcentral.co.za/south-africa-was-wrong-to-patent-an-ais-invention/218389/ (Last Visited on Oct 10, 2023).

account how their uses of the term "inventor" raise questions.

PATENT REGIMES OF COUNTRIES AND THE POSSIBILITY OF ACCEPTANCE OF ARTIFICIAL INTELLIGENCE AS AN 'INVENTOR'

I. India

The requirements of a person who is qualified to submit a patent application are described in Section 6 of the Indian Patent Act.[10] The requirement that the applicant be the 'True and first inventor' of the invention is emphasized in Section 6(1) (a).[11] The definition of a true and first inventor under Section 2(1) (y) of the Indian Patent Act excludes both the person who first brought an invention into India and the person to whom the invention was first disclosed from outside of India.[12]

The government is also included under the definition of person under the Indian Patent Act, which means either of Living Person, or the Government can file a Patent in India.[13] Therefore, to be acknowledged as an inventor in India, a person must be a natural person and a true and first inventor.[14]

In the First Examination Report (when someone files a patent application in India,[15] the examiner prepares the First Examination report of the patent application) the Controller mentioned explicitly that the patent application cannot be processed for the *'Formal and Technical Examination'* because the true and first inventor of the invention is Artificial Intelligence (AI) which is not a Person as per section 2[16] and section 6[17] of The Patent Act 1970.

II. USA

In the USA, Patents are not always available for all inventions; rather, an inventor must fulfill a number of requirements in order to receive a patent. Numerous legal requirements must be satisfied, including innovation,[18] utility and eligibility,[19] non-obviousness,[20] and written

[10] Indian Patent Act 1970, Section 6.
[11] Indian Patent Act 1970, Section 6(1)(a).
[12] Indian Patent Act 1970, Section 2(1)(y).
[13] Indian Patent Act 1970, Section 2(1)(s).
[14] Renu Bala Rampal And Swaraj Singh Raghuwanshi, Demystifying Rights Of AI Generated Inventions, LiveLaw (15 Apr 2023), https://www.livelaw.in/law-firms/law-firm-articles-/ai-generated-inventions-chatgpt indian-patent-actdabus-united-states-patent-trademark-office-european-patent-office-226394 (Last Visited on Oct 10, 2023).
[15] Intellectual Property India, https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 4) , (Last Visited on Oct 10, 2023).
[16] Supra note 11 & 12 at 2.
[17] Supra note 9 & 10 at 2.
[18] Patent Act (Title 35 USA State Code) § 102.
[19] Patent Act (Title 35 USA State Code) § 101.
[20] Patent Act (Title 35 USA State Code) § 103.

description,[21] among others.

The notion that an invention must be the outcome of a "mental act," as well as the necessity that inventors be "individuals,[22]" are the two most crucial factors in any patentability analysis of creations by AI.[23] These limitations go against acknowledging AI as an inventor under the USA's Patent Framework. These criteria have been interpreted by courts which requires that an inventor be a real person, disqualifying companies, and computers from being recognized as inventors.[24]

In addition, a patent's subject matter must be "non-obvious."[25] This stipulation appears to be designed in the USA Patent framework to ensure that patentable inventions are the result of mental processes, and that human mental action was involved in the invention's development.[26] These minimum requirements are ultimately intended to make sure that the patent system encourages and rewards inventiveness. This requirements further incorporates the US patent law's scepticism on recognizing AI to be inventors.

III. United Kingdom

Anybody may file a patent application in the UK, either alone or jointly, according to Section 7 of the UK Patent Act 1977,[27] however, what comes under the definition of *'Person'* has been given by England's Judiciary. According to the ruling in Yeda Research and Development Company Ltd. v. Rhone-Poulenc Rorer International Holdings, section 7 of the statute provides a comprehensive framework for determining who is entitled to receive a patent grant. Consequently, it is evident that only a Natural Person can be considered eligible under section 7(2).[28]

IV. Australia

According to Section 15, a patent may only be given to someone who is one of the following: *"(a) is the inventor; (b) would, on the grant of a patent for the invention, be entitled to have the patent assigned to the person; (c) derives title to the invention from the inventor or a person mentioned in paragraph (b); or (d) is the legal representative of a deceased person*

[21] Patent Act (Title 35 USA State Code) § 112.
[22] Patent Act (Title 35 USA State Code) § 100(f).
[23] Townsend v. Smith, 36 F.2d 292, 295, 4 USPQ 269, 271 (CCPA 1929).
[24] Beech Aircraft Corp. v. EDO Corp., 990 F.2d 1237, 1248 (Fed. Cir. 1993)
[25] Supra note 19 at 3.
[26] Id.
[27] Patent Act 1977, Section 7(1).
[28] Patent Act 1977, Section 7(2).

mentioned in paragraph (a), (b), or (c)".[29]

Australian Federal Court while discussing the DABUS Case held that 'Only a natural person can be an inventor for the purposes of the Patents Act, taking into account the statutory language, structure, and history of the Patents Act as well as the policy objectives supporting the legislative intent'.[30]

V. South Africa

The term "inventor" is not defined explicitly in the South African Patents Act 1978.[31] However, it is possible to assume from the Act and common law that the term "inventor" refers to a person who has an idea that the Act considers to be an invention. According to Section 2 (XV) of the act, a "patentee" is a person whose name is currently included in the register as the grantee or patent owner.[32] As a result, anyone who develops an idea that is original, novel, and suitable for use in commerce, industry, or agriculture may be deemed an innovator.

VI. European Patent Office (EPO)

Article 52 of the European Patent Convention mentions 'Patentable Inventions' it says any invention, in any technological field, may be eligible for a European patent as long as it is novel, creative, and capable of being used commercially.[33] By this Artificial Intelligence (AI) Innovations can be considered for Patent as an innovation made by an Artificial Intelligence (AI) can be novel, creative, and capable of being used commercially.

Whether an AI entity can have the same legal standing as a person under the European Patent Convention (EPC) is still up for interpretation. The European Patent Office's ("Legal Board of Appeal") decision on the DABUS patent application concluded that DABUS had not complied with this condition.[34] This conclusion results from the fact that, as stated in Article 81 and[35] Rule 19(1) of the EPC,[36] a patent applicant is required to identify the inventor as part of their procedural obligations. An applicant is required by Article 81 of the EPC to identify an "inventor."[37] An inventor must be a "natural person," according to the Board's interpretation.

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[29] Patent Act 1990, Section 15.

[30] Commissioner of Patents v Thaler [2022] FCAFC 62.

[31] Hennie Louw & Erik van der Vyver, What? Who? Why? The Inventor Edition, Von Seidels (Oct 2021), https://www.vonseidels.com/news/inventorship/ (Last Visited on Oct 10, 2023).

[32] South African Patents Act No. 57 of 1978, Section 2 (XV).

[33] European Patent Convention, Article 52.

[34] Ryan N. Phelan, Inventor of an AI-Generated Invention, Marshall, Gerstein & Borun LLP (July 26, 2022), https://www.patentnext.com/2022/07/european-patent-office-epo-suggests-that-the-owner-of-an-artificial-intelligence-ai-machine-could-be-listed-as-the-inventor-of-an-ai-generated-invention/ (Last Visited on Oct 10, 2023).

[35] European Patent Convention, Article 81.

[36] Convention on the Grant of European Patents (1973), Rule 19(1).

[37] Supra note 36 at 5.

Legal Board of Appeal observed that the European Patent Convention (EPC) does not contain any language that would lead one to believe that the term "person" includes artificial intelligence.[38] The Board further emphasized that some EPC clauses that ordinarily relate to an "inventor" concurrently refer to a "person" or "legal predecessor."[39] The EPC's Article 60(1) also grants the inventor patent rights. The Board came to the conclusion that having legal capacity is a requirement of the EPC which only a Living Person can possess.[40]

ANALYSIS OF DECISIONS GIVEN BY THE INDIAN PATENT AUTHORITIES AND OTHERS WITH RESPECT TO RECOGNIZING ARTIFICIAL INTELLIGENCE AS 'INVENTOR'

I. India

Since DABUS is not recognized as a 'Person' under Sections 2 and[41] 6 of the Patents Act, 1970,[42] Thaler's Indian patent application was the subject of objections from the Controller General of Patents in India, who claimed in the scrutiny Report that the application could not pass Formal and Technical Examination.[43] Numerous court decisions upheld the Controller General of Patents' decision. For instance, in the case of V.B. Mohammed Ibrahim v. Alfred Schafranek, the court decided that only a 'Natural Person' who genuinely contributes their skill or knowledge to the innovation is able to claim inventorship under the law, and that neither a financing partner nor a corporation could be the sole applicant as an inventor.[44] As a result, it is not viable to recognize AI as patent holders under India's current statutory framework.

II. USA

Dr. Thaler attempted to get patent protection for two of DABUS purported discoveries by filing two patent applications to the U.S. Patent and Trademark Office (PTO) and listing DABUS as the sole inventor on both of them. Rather than providing the last name of the inventor, Thaler wrote on the applications that "the invention was generated by artificial intelligence."[45] The U.S. Patent and Trademark Office (PTO) came to the conclusion that

[38] Supra note 35 t 5.
[39] Ibid.
[40] European Patent Convention, Article 60(1).
[41] Supra note 11 & 12 at 2.
[42] Supra note 9 & 10 at 2.
[43] Supra note 14 at 3.
[44] V.B. Mohammed Ibrahim v. Alfred Schafranek (AIR 1960 Mysore 173).
[45] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 19) , (Last Visited on Oct 10, 2023).

both applications were faulty because neither had a legitimate inventor.[46] Dr. Thaler requested judicial review of the PTO's rulings in district court. The U.S. Patent Act requires a "inventor" to be a "individual," and the obvious meaning of "individual" as used in the legislation is a natural person, the district court found, awarding the PTO summary judgment.[47]

Then, citing several US Patent Act clauses to support his position, Dr. Thaler tried to convince the US Court of Appeals for the Federal Circuit in the case of Thaler v. Vidal that "inventor" should include AI software.[48] First, Thaler draws attention to the word "whoever" in Section 103 of the US Patent Act, which states that "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[49] Second, Thaler argues that AI software programs must be considered as inventors in order for patentability to be independent of how the invention was developed, which would be against Section 103.[50] Thirdly, Thaler adds that the statute's overall context as well as the specific context in which the word "inventor" is employed must be taken into consideration when interpreting the phrase.[51]

Thus, the question on the table for the Federal Circuit in this instance was: Is it possible for someone other than a human to be the inventor of a U.S. patent? In its approach, the Federal Circuit relied on the legislative language of the U.S. Patent Act, which characterizes a 'inventor' of a patent as "the person... who invented or discovered the subject matter of the invention." That being said, the Federal Circuit pointed out that the Patent Act does not define "individual." The court concluded that an AI system is ineligible to be registered as an inventor under the U.S. Patent Mechanism.

III. United Kingdom

In compliance with sections 7 and 13 of the Act, the UK Intellectual Property Office (UKIPIO) denied Dr. Thaler's application on the grounds that DABUS was not a recognized person and, as such, could not be acknowledged as the inventor under UK patent law.[52] A patent may be

[46] Id.

[47] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 21) , (Last Visited on Oct 10, 2023).

[48] Thaler v. Vidal, No. 2021-2347 (Fed. Cir. 2022).

[49] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 23) , (Last Visited on Oct 10, 2023).

[50] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 25) , (Last Visited on Oct 10, 2023).

[51] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Page 26) , (Last Visited on Oct 10, 2023).

[52] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Para 7,Page 26) , (Last Visited on Oct 10, 2023).

granted to (a) the creator and (b) any individual who is the original owner of the "property in" the invention at the time of invention, under UK law found in Patents Act of 1977, section 7.[53]

In addition, the applicant must comply with Section 13 of the Patents Act, which requires them to: (i) identify the person or people thought to be the inventor(s), and (b) if they are not the inventor, explain how they obtained the right to be granted the patent.[54]

Further Dr. Thaler moved The UK Court of Appeal, Court of appeal in the case of Stephen Thaler vs The Comptroller-General of Patents, Designs and Trademarks,[55] by a vote of 2-1. The Court dismissed Dr. Thaler's appeal and upheld the hearing officer's judgments, concluding that an AI system cannot be recognised as the inventor under UK patent mechanism.[56]

PARTIAL SUCCESS IN AUSTRALIA AND COMPLETE SUCCESS IN SOUTH AFRICA.

The Australian Patent Office's ruling that an "AI machine cannot be an inventor" was overturned by a primary judge of the Federal Court of Australia,[57] who also declared that an inventor was not required to be a natural person under Australia's patent system.[58] The decision of the court was challenged by the Commissioner of the Australian Patent Office. The appeal was then returned to the same court which delivered the earlier decision, where a Primary judge came to the opposite result,[59] holding that under Australian law, an inventor must be a 'Natural Person'. As a result, the primary judge's initial judgment was overturned.[60]

The Commissioner's justification and conclusion were rejected by the primary judge in the initial court case. The judge clarified that an inventor is an agent who creates something new; they might be either people or things.[61] Additionally, he concluded that nothing in the Patents Act foretells a different outcome. A distinction between patent ownership and inventorship was made by the judge. He disagreed with the idea that if there was no human inventor, an otherwise patentable invention would not be granted a patent. This would be contrary to the Patents Act's stated goal

[53] Supra note 26 at 4.
[54] Patent Act 1977, Section 13.
[55] Stephen Thaler vs The Comptroller-General of Patents, Designs and Trademarks, (Appeal No 2019 - 000339).
[56] Intellectual Property India, Reply to First Examination Report https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewPDF (Para 50, Page 51) , (Last Visited on Oct 10, 2023).
[57] Thaler v. Commissioner of Patents [2021] FCA 879' 160 IPR 72 (J) (Page 226 - 227).
[58] Id.
[59] Thaler v. Commissioner of Patents [2022] FCAFC 62.
[60] Thaler v. Commissioner of Patents [2022] FCAFC 62 (Para 123, Page 34).
[61] KIRK HARTUNG, DABUS Sent Back to Drawing Board Following Reversal of Inventorship Decision by Australia Court, IP Watchdog (APRIL 17, 2022), https://ipwatchdog.com/2022/04/17/dabus-sent-back-drawing-board-following-reversal-inventorship-decision-australia-court/id=148464/#:~:text=On%20April%2013%2C%202022%2C%20the,patent%20application%20under%20Australian%20law. (Last Visited on Oct 10, 2023).

of "providing an Australian patent system that promotes economic wellbeing through technological innovation and the transfer and dissemination of technology." He added that acknowledging the invention of the computer will encourage the development of inventive machines and the application of machine output for novel scientific purposes. The judge ultimately concluded that the Commissioner's definition of "inventor" was no longer applicable. [62] DABUS, an artificial intelligence (AI) inventor, did, however, receive its first patent success in South Africa, where the country's patent office granted the first patent for a DABUS innovation.[63] But because the nation lacks a framework for conducting substantive patent examinations, the importance of the acceptance could not be as great as it would be in another jurisdiction.[64] Although the South African Patents Act and related rules do not require the South African Companies and Intellectual Property Commission (CIPC) to conduct a substantive examination of a patent application, it is nevertheless required to ensure that formal requirements are met.

CONCLUSION

An in-depth analysis of the provisions relating to the potential recognition of artificial intelligence as an "inventor" within the patent frameworks of different countries has revealed that the majority of these frameworks lack explicit definitions of what constitutes an inventor. Notably, even "Government" institutions fall within the purview of the concept of a "Living Person" in countries like India. Furthermore, DABUS has continually been refused patent rights by patent authorities from almost every jurisdiction, citing precedence from the solely human inventors who were granted patents. When dealing with an innovation that required a lot of thought and research in its production, this fidelity to legislative purpose may be deemed inappropriate. Therefore, it is advised that regulatory bodies take a more thorough and all-encompassing approach when making decisions on denying DABUS patent rights.

In the words of Abraham Lincoln, "The patent system adds the fuel of interest to the fire of genius." This effectively illustrates how the patent system is set up to encourage people to develop and make their inventions known to the public. In order to accomplish this, it rewards innovators who publicly disclose their creations with a time of exclusivity for their ideas. Instead of not inventing or inventing but keeping their inventions a secret (in which case they may still earn from private sales and licenses), it is hoped that the monetary motive will encourage innovators to disclose their inventions to the public. This agreement promotes additional innovation and increases public knowledge of science and technology.

[62] Id.

[63] Christopher Mhangwane and David Cochrane, South Africa was wrong to patent an AI's 'invention', TECH CENTRAL, (8 December 2022), https://techcentral.co.za/south-africa-was-wrong-to-patent-an-ais-invention/218389/,(Last Visited on Oct 10, 2023).

[64] Id.

The fact that AI is not a person and thus does not respond to the incentives of the patent system is a fundamental issue with identifying AI as an inventor. An AI system doesn't have needs, wants, or desires. If it understands it can be named on a patent, it won't choose not to invent, work harder, or choose to reveal its inventions to the public (rather than keep them hidden), and it won't be demotivated if its name doesn't appear on a patent.

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