



ARE Patent Law Alert: DABUS AI: The Test Case for When a Computer can be an Inventor on Patents for Innovation it Purports to Create

Author(s): Charles R. Macedo, Herbert A. Blassengale, IV

Abstract

In “2001: A Space Odyssey” (1968), Stanley Kubrik and Arthur C. Clarke mesmerized audiences with a supercomputer H.A.L. 9000, engaging in conversations and performing human like tasks.

Fast forward more than 50 years, and in 2020, and “Device for the Autonomous Bootstrapping of Unified Sentience” (“DABUS”) a patented (see U.S. Patent No. 10,423,875) Artificial Intelligence (“AI”) system, created by Stephen Thaler, is the face of a computer system (instead of a person) as an “inventor” or “author.”

DABUS, a system of interconnected neural network modules that have been trained in the field of a general endeavor that postulate and test new designs for products and other inventions, such a “warning light” and a “food container.”

Thaler, as the designer of DABUS, has filed for patents in various of the major patent offices, naming DABUS as the “inventor” and himself as “assignee.” In this article, we discuss the status of Thaler’s efforts – to date – to have a computer system, instead of a human, as an “inventor” on a patent application, in the U.S., E.U. and U.K., while applications remaining pending in many other patent offices throughout the world.

DABUS



“Device for the Autonomous Bootstrapping of Unified Sentience” (“DABUS”) is an AI system created by Dr. Stephen Thaler. According to Dr. Thaler, DABUS is an AI agent designed as a “creativity machine” to mimic a natural person's creative problem-solving skills.

On behalf of DABUS, Dr. Thaler filed patent applications on two inventions he alleged were created by DABUS, i.e., the computer system, without a human inventor.

In *Dana-Farber Cancer Institute v. Ono Pharmaceutical*, 964 F.3d 1365, 1371 (Fed. Cir. 2020), the U.S. Court of Appeals for the Federal Circuit summarized that “[t]o be a joint inventor, one must: (1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art.” (quoting *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 (Fed. Cir. 1998); emphasis added).

Thus, U.S. patent law has historically recognized the inventor as the person, or persons, who contribute to the invention's conception or reduction to practice. While the current interpretation of inventorship requires a conception of the invention, some argue that AI currently does not have such a capability. Although listed as the legal representative for DABUS and the assignee of the DABUS applications, by listing DABUS as the sole inventor on the submitted patents, Dr. Thaler tested the boundaries of the law with patent applications for DABUS's creations.

In 2018 and 2019, Dr. Thaler filed parallel patent applications via the Patent Cooperation Treaty (“PCT”) in the United States, United Kingdom, Germany, Israel, China, Korea, Taiwan, India, Japan, Australia and Canada.

U.S. Patent and Trademark Office's Response

In April 2020, the U.S. Patent and Trademark Office (“USPTO”) published its decision by Deputy Commissioner for Patent Examination Policy Robert W. Bahr denying a request to name DABUS as the sole inventor on U.S. Application Serial No. 16/524,350, entitled “Devices and Methods for Attracting Enhanced Attention.” See *In re Application No.*



16/524,350, Decision on Petition (USPTO) (available [here](#)).

Procedurally, the issue came up in the context of the USPTO issuing a Notice to file Missing Parts of a Non Provisional Application, since the Application Data Sheet (or “ADS”) submitted with the application “does not name each inventor by his or her legal name.”

In denying a petition to vacate the decision refusing to vacate the notice to file missing parts, the USPTO concluded that “current statutes, case law and USPTO regulations and rules limit inventorship to natural persons.” (Decision at p. 6).

Thereafter on August 27, 2019, the USPTO issued a *Request for Comments on Patenting Artificial Intelligence Inventions*, 84 Fed. Reg. 44,889 (USPTO Aug. 27, 2019).

The USPTO issued its report on October 6, 2020, after repeatedly extending the period for comments. Public Views on Artificial Intelligence and Intellectual Property Policy (USPTO October 2020) (“the Report”) (available [here](#)).

The Report generally concluded that the majority of the comments submitted reflected a view that the “concept of artificial general intelligence (AGI) – intelligence akin to that possessed by humankind and beyond – as merely a theoretical possibility that could arise in a distant future.” (report at ii).

The Report further concluded that “[a] cross all IP topics, a majority of public commenters expressed a general sense that the existing U.S. intellectual property laws are calibrated correctly to address the evolution of AI. However, commenters appear split as to whether any new classes of IP rights would be beneficial to ensure a more robust IP system.” (*Id.* at iii).

Thus, rather than address the question raised by the patent applications naming DABUS as the inventor, the USPTO in the Report took the position that it is too soon to decide the issue, since, notwithstanding the applicant’s assertions, the technology is “merely a theoretical possibility that could arise in the distant future.”



At least for now (or until a new administration comes into power), it seems unlikely that the USPTO will adopt new rules allowing for computers (or other non-humans) to be named as “inventors” on U.S. patents.

EU Response

In November 2019, the European Patent Office ("EPO") refused two European patent applications regarding DABUS following non-public oral proceedings, similar to the United States.

The patents were rejected on the grounds that they did not list a human being as an inventor, a principle set out by Article 81 and Rule 19(1) of the European Patent Convention.

In January 2020, the EPO released the reasoning behind its decision. The EPO's interpretation of the European patent systems legal framework found that a natural person must be the designated inventor in a European patent. Additionally, the term inventor being a natural person appears to be in an internationally applicable standard, held by various courts worldwide.

The EPO also emphasized that the designation of an inventor bears a series of legal consequences, including:

- the designated inventor can benefit from the rights linked to that status; and
- to exercise these rights, the inventor must have a legal personality that AI systems do not possess.

Moreover, the EPO noted that providing a name to a machine is not sufficient to satisfy the previously mentioned European patent requirements.



Dr. Thaler has appealed this decision and is currently awaiting the result.

UK Response

In September 2020, the UK High Court of Justice (Patents) issued its decision on the DABUS appeal, [Thaler v The Comptroller-General of Patents, Designs And Trade Marks](#) [2020] EWHC 2412 (Pat). This decision summarily approved judgment and thus falls in line with prior rulings handed to Dr. Thaler from the UK Intellectual Property Office (UKIPO), the EPO, and the USPTO, further solidifying that, at least for patents, an inventor must be a natural person.

The UKIPO previously held that naming a machine as an inventor did not meet the requirement of a natural person being identified as the inventor, as outlined in the Patents Act 1977. UKIPO was also not satisfied that Dr. Thaler had derived his initial right to apply for the patent due to his "ownership of the creativity machine DABUS."

Though the appeal rejected the DABUS patent applications, the court did note that the question of whether the controller of an AI machine that invents can be himself the inventor, was not argued before them, stating "[i]t would be wrong to regard this judgment as discouraging an applicant from at least advancing the contention if so advised."

It may also be worthy to note that in September 2020, like the USPTO, the UK government called for views as to the implications AI might have for [IP policy](#), possibly signaling the continuation of this conversation.

Others Coming

Currently, appeals of the original patent rejection decisions are pending in the US, UK, EU and Germany. Initial patent decisions are being awaited in Israel, China, Korea, Taiwan, India,



Japan, Australia and Canada.

Most recently, the International Bureau of the World Intellectual Property Organization ("WIPO") recently published a corresponding international patent application under the PCT, which names DABUS as the designated inventor.

See [WO2020/079499 A1](#), published April 23, 2020, naming as inventor "DABUS, The invention was autonomously generated by an artificial intelligence"

Conclusion

While there are plenty of ways to protect inventions made through AI and machine learning processes, (see Charles R. Macedo, "[Protecting Artificial Intelligence Innovations as Intellectual Property: Opportunities and Pitfalls](#)," *Practical Law* (2020)), the real challenge is whether the law can catch up with the technology and figure out a proper way to determine if and who should profit from AI innovation.

For more information on how AI and machine learning are being used and/or protected by intellectual property, please contact the authors.

* Charles R. Macedo is a partner, and Herbert A. Blassengale, IV was a law clerk at Amster, Rothstein & Ebenstein LLP. Charley's practice focuses on intellectual property issues, including patent, trademark and other intellectual property. Charley can be reached at cmacedo@arelaw.com.