

AI cannot be an inventor of a UK Patent

by Ron Moscona

The United Kingdom Supreme Court (the ultimate appeal level in the UK legal system) has ruled in a decision of 20 December 2023 that an artificial intelligence (“AI”) system cannot be identified in a patent application as the inventor. The highly anticipated ruling follows decisions both in the UK and in other jurisdictions (including the Board of Appeals of the European Patent Office) all adopting the same position under the provisions of current legislation in the different jurisdictions.

Advances in AI technology are increasingly giving rise to works or other forms of complex output generated largely through automatic means, in some cases with minimal direct human input, sparking discussions on the nature of authorship and inventorship, challenging traditional legal concepts and definitions.

In the UK, as in many other countries, the concept of “inventorship” lies at the heart of the entitlement to apply for patents for inventions and is pivotal to the issue of patent ownership.

Following public consultations in the UK relating to potential updates to legislation in response to developments in AI technology (resulting in no immediate recommendations for changes in the current patent legislation) and a string of decisions triggered by a patent application naming an AI system as the “inventor”, the question has now been addressed and settled – at least as long as Parliament does not intervene – with the UK Supreme Court’s decision in *Thaler v Comptroller-General of Patents, Designs and Trade Marks*^[1].

The Thaler Patent Application

In 2018, Dr. Stephen Thaler filed patent applications in a number of jurisdictions for an invention comprising a food container and a flashing light. The claimed invention was credited in the applications to Dr Thaler’s AI system referred to as “DABUS” (standing for Device for the Autonomous Bootstrapping of Unified Sentience) which was reportedly designed to artificially mimic neural systems and memories. To test the question of AI

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inventorship, Dr Thaler refrained from naming himself as the inventor, asserting that the claimed invention was autonomously generated by DABUS. The applicant claimed entitlement to apply for and own the patents in his own name based on his ownership of DABUS.

Patent examiners in each of the jurisdictions in which the applications were examined rejected the applications, with the UK Intellectual Property Office doing so in 2019 on the grounds that there was an absence of a “specified human inventor”. Appeals to UK higher courts made in 2020 and 2021 failed for the same reasons. The case eventually made its way to the UK Supreme Court, where it was heard earlier in 2023.

The applicant argued that he should not be personally identified as the inventor because the DABUS AI system generated the claimed invention autonomously. The factual assertion was not questioned by the patent examiner at the UK Intellectual Property Office and the courts that heard the appeals on the examiner’s decision – including the Supreme Court – proceeded on that factual assumption.

The Supreme Court’s Decision

In a unanimous decision rejecting Dr Thaler's appeal, the UK Supreme Court held that the “inventor” for the purpose of the Patents Act 1977 must be a natural person. The decision rests on the provisions of the Act relating to the inventor and those relating to the initial owner of the patent.

The Court held that the relevant provisions clearly require the inventor to be a legal person (that can claim and own legal rights) and a natural person. DABUS is neither. It is a machine, and therefore cannot be the inventor.

The Court further noted that under the provisions of the 1977 Act the initial owner of a patent (and the initial owner of an invention which entitles a person to apply for a patent) is either the inventor or a person claiming such entitlement through the inventor. The Act recognises only an exhaustive list of bases on which such entitlement can be claimed.

Firstly, a person can claim to be entitled to a patent or to apply for a patent on the basis of an enactment or rule of law (such as the 1977 Act itself which provides that the employer of the inventor is the initial owner of the patent, or has the right to apply for a patent, if the invention was made in the course of employment and certain other conditions are met). Other bases can be found in foreign law, in international treaties or in an agreement entered with the inventor before the invention was made. Finally, a person can claim ownership to a patent or an invention if that person is the successor in title of the inventor or of another person (such as the inventor’s employer) who is entitled to own the patent through the inventor.

Those provisions themselves indicate that the inventor must be at least a legal person (if not also a natural person) and therefore there is no basis in the 1977 Act for a person to claim entitlement to a patent if the inventor is not a legal person.

On those grounds, the Court rejected Dr Thaler's argument that he was entitled to apply for the patent as the owner of the DABUS system that generated the claimed invention. The applicant relied on the so-called doctrine of accession. The Court held that the doctrine applies only to tangible property created out of another tangible property. Ownership of the inventor, the Court held, is not recognised under the 1977 Act as a basis on which a person can claim the right to apply for a patent.

The Court went further and held that a machine such as DABUS cannot be treated as having "devised an invention" (as required in the statutory definition of an "inventor"). Lord Kitchin, with whom the other judges were in agreement, said that the IPO "was right to decide that DABUS is not and was not an inventor of any new product or process described in the patent applications", even if the machine indeed generated the technical device claimed as an invention and even if it did so autonomously. Only a natural person, the Court held, can "devise an invention".

The Wider Implications for AI-Generated Inventions

The decision of the Supreme Court in the *Thaler* case, and similarly the decisions of the patent examiner and the lower appeal instances, focused very much on the provisions of the 1977 Act as they are. In his original decision rejecting the application, the IPO examiner commented that the current law may not be suitable for inventions devised autonomously by AI systems, but that it was not the IPO's role to modify the law, only to apply it. The appeal judges agreed.

Further, the *Thaler* application sought to force the issue of naming AI as the patentee on the basis of a factual proposition that the AI devised the invention entirely autonomously. This proposition may be an extreme one given the current level of development of the technology and therefore, the question of whether in principle an AI system can be named as the inventor in a patent application may not necessarily need to be addressed at this point.

The UK Supreme Court held that the AI cannot be identified as the inventor. It was not required to consider in what circumstances natural persons (for example, the individuals operating the AI or those who were responsible for training it) might properly be named as the inventors where an innovative technical solution, formula or design is conceived with the assistance of AI.

The 1977 Act defines the "inventor" as the "deviser of the invention". It does not say that a person cannot devise an invention with the assistance of a machine. Indeed, it is unlikely that the provision would be interpreted so narrowly. There is no reason in principle why inventions generated with the assistance of an AI system as a tool cannot be patented, provided the named inventor is still a natural person. The question may well arise in future cases, however, as to what extent a person has to contribute to the invention, through his or her own work, to be considered the deviser of the invention, and whether an individual should not be identified as the inventor if the inventive step is arrived at solely or predominantly through the operation of an AI system.

In public consultations carried out by the UKIPO in 2021 and 2022, the UK government's position was that there was no immediate need to introduce changes to the patent legislation to address issues of inventorship by AI and it was noted that most respondents felt that the technology was not yet sufficiently advanced to invent without human intervention. The government stated that the issue will remain under review and that the UK will seek to advance discussions on the issue of AI inventorship at the international level.

Patents are granted nationally but they are part of a highly integrated international system and businesses rely on the patent system being largely harmonised internationally. It is a sensible approach, therefore, to see if a harmonised approach on AI inventorship can emerge at the international level before changing national patent laws to address this issue.

[1] *Thaler v Comptroller-General of Patents, Designs and Trade Marks* [2023] UKSC 49.