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Use of AI Does Not Preclude Patentability, USPTO Guidance Affirms

In new guidance, the United States Patent and Trademark Office (USPTO) affirms that the assistance of artificial intelligence (AI) in innovation does not preclude patentability, marking a significant step in addressing the evolving intersection of AI and intellectual property rights.

Responding to President Biden's [Executive Order](#) on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence issued October 30, 2023, the USPTO published [Inventorship Guidance on AI-Assisted Inventions](#) and is now seeking public comment.

The rise and use of AI has raised questions of patentability, most particularly who or what legally invented that which is claimed for patent protection.

When it comes to using AI to assist in the development of new technology, this question is important because courts recognize only "natural persons" as inventors. Only natural persons can be named as inventors or joint inventors on a patent application—an AI system cannot be. *Thaler v. Vidal*, 43 F.4th 1207, 1210 (Fed. Cir. 2022), cert. denied, 143 S. Ct. 1783 (2023) ("Here, there is no ambiguity: the Patent Act requires that inventors must be natural persons; that is, human beings.").

Thaler, however, does not answer whether a person meets the legal definition of an inventor when assisted by an AI system during the course of their innovation. The USPTO's new guidance provides examiners and patent applicants with much-needed instruction on inventorship when AI is used to assist a person in the conception or reduction to practice of an invention.

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According to the USPTO, AI-assisted inventions are *not* categorically unpatentable. Instead, the USPTO takes the stance that, to qualify as an inventor, a natural person must have “significantly contributed” to the invention. This test is drawn from *Pannu*, which outlined the requirements for a person to be considered a joint inventor—effectively whether the joint inventor significantly contributed to the conception of the claimed invention. *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 (Fed. Cir. 1998).

Extending the *Pannu* decision to AI-assisted inventions, the USPTO will evaluate whether a natural person significantly contributed to each claim of an application using the factors outlined in that decision, namely whether the natural person “(1) contribute[d] in some significant manner to the conception or reduction to practice of the invention, (2) [made] 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) [did] more than merely explain to the real inventors well-known concepts and/or the current state of the art.” *Id.*

Notably, joint inventorship requires that a named inventor significantly contribute to the conception of only a single claim. However, for AI-assisted inventions, the USPTO goes one step further and requires that *all claims* have a significant contribution by a natural person. Any claim to which a natural person did not significantly contribute cannot be included in a patent and must be canceled from a pending application. In the context of AI-assisted inventions, inventorship is determined on a claim-by-claim and case-by-case basis using the *Pannu* factors.

Recognizing that determining a natural person’s contribution in AI-assisted inventions will be difficult to ascertain, the USPTO has provided five guiding principles to help examiners and applicants determine a person’s level of contribution to a claim and whether that contribution is significant:

1. A natural person’s use of an AI system in creating an AI-assisted invention does not negate the person’s contributions as an inventor. The natural person can be listed as the inventor or joint inventor if the natural person contributes significantly to the AI-assisted invention.
2. Merely recognizing a problem or having a general goal or research plan to pursue does not rise to the level of conception. A natural person who only presents a problem to an AI system may not be a proper inventor or joint inventor of an invention identified from the output of the AI system. However, a significant contribution could be shown by the way the person constructs the prompt in view of a specific

problem to elicit a particular solution from the AI system.

3. Reducing an invention to practice alone is not a significant contribution that rises to the level of inventorship. Therefore, a natural person who merely recognizes and appreciates the output of an AI system as an invention, particularly when the properties and utility of the output are apparent to those of ordinary skill, is not necessarily an inventor. However, a person who takes the output of an AI system and makes a significant contribution to the output to create an invention may be a proper inventor. Alternatively, in certain situations, a person who conducts a successful experiment using the AI system's output could demonstrate that the person provided a significant contribution to the invention even if that person is unable to establish conception until the invention has been reduced to practice.
4. A natural person who develops an essential building block from which the claimed invention is derived may be considered to have provided a significant contribution to the conception of the claimed invention even though the person was not present for or a participant in each activity that led to the conception of the claimed invention. In some situations, the natural person(s) who designs, builds or trains an AI system in view of a specific problem to elicit a particular solution could be an inventor, where the designing, building or training of the AI system is a significant contribution to the invention created with the AI system.
5. Maintaining "intellectual domination" over an AI system does not, on its own, make a person an inventor of any inventions created through the use of the AI system. Therefore, a person simply owning or overseeing an AI system that is used in the creation of an invention, without providing a significant contribution to the conception of the invention, does not make that person an inventor.

As of today, the USPTO has also provided two examples to help show hypothetical application of the new guidance, including an example for a transaxle for a remote control car and another for the development of a therapeutic compound for treating cancer.

While *Thaler* and *Pannu* both concerned utility patents, the USPTO's guidance on AI-assisted inventions also applies to applications for design and plant patents.

In all, one can use AI in the development of new technology and not categorically lose their ability to file for patent protection. It remains to be seen how the USPTO will apply the *Pannu* factors and how such application will be treated by the courts. However, as for now, so long as a human significantly contributed to each claim in a patent application, that natural person can and must be listed as an inventor, while the AI system cannot.

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