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Guidance for Inventorship and Patentability of AI-Assisted Inventions

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As Artificial Intelligence (AI) technology continues to develop at an exponential pace, AI presents tempting and seemingly endless opportunities for industrial and commercial applications. Recent advances in generative AI technology, which uses machine learning models that can generate new output data once trained, enable AI to be used as a tool in research and development and product engineering to improve existing products and create new products. Today, generative AI tools are already being utilized for innovation in various applications and industries, including for software development, creation of new chemical compounds, design of new lattice-like structures for shoes to provide improved support and durability, and the development of more efficient wingtips for airplanes. Despite the recent advances in generative AI technology, this technology is still only in the nascent stage, and it is expected to continue to grow and gain broader adoption across various industries.

As AI's role in innovation continues to grow, it is important to consider the impact of using AI tools on the ability to obtain patent protection for inventions developed using those AI tools.

In *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022), the United States Court of Appeals for the Federal Circuit held that AI cannot be named as an inventor or joint inventor on patents. The court found that only a natural person can be an inventor under the Patent Act. Accordingly, inventions "invented" by an AI system are not capable of being patented. However, the Federal Circuit in *Thaler* expressly noted that it was "not confronted [] with the question of whether inventions made by human beings with the assistance of AI are eligible for patent protection," thereby leaving the question open.

On February 13, 2024, the United States Patent and Trademark Office (USPTO) issued guidance regarding inventorship of AI-assisted inventions. The guidance explains that "while AI-assisted inventions are not categorically unpatentable, the inventorship analysis should focus on human contributions, as patents function to incentivize and reward human ingenuity." According to the guidance, when an invention is created using AI, patent protection is still available for the invention as long as "a natural person provided a significant contribution" to the invention. Notably, a natural person must provide a significant contribution to each claim in a patent or patent application.

The guidance states that determination of whether a natural person made a significant contribution to an AI-assisted invention should be analyzed under the three "*Pannu* factors" established in *Pannu v. Iolab Corp.*, 155 F.3d 1344 (Fed. Cir. 1998). However, the guidance recognizes that "determining whether a natural person's

contribution in AI-assisted inventions is significant may be difficult to ascertain, and there is no bright-line test." To assist in determining proper inventorship, the guidance provides a non-exhaustive list of "guiding principles" to help inform the application of the *Pannu* factors in AI-assisted inventions. Some notably guiding principles provided in the guidance include:

- "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."
- "[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."
- "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."
- "[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."

The guidance also (i) reminds applicants of their duty of disclosure to the USPTO, which would include disclosure of "evidence that demonstrates a named inventor did not significantly contribute to the invention because the person's purported contribution(s) was made by an AI system" and (ii) reminds patent practitioners that, under their duty of reasonable inquiry, "the inventorship inquiry could include questions about whether and how AI is being used in the invention creation process."

Companies who are implementing or considering generative AI technology in their R&D and product engineering processes should be aware of and carefully consider the potential issues and challenges associated with obtaining patent protection for inventions developed using AI technology and they should update their patent policies accordingly.

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