

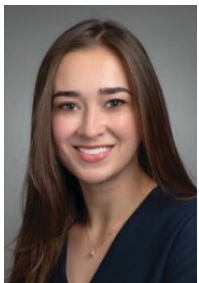
EXPERT OPINION

Executive order calls for USPTO guidance on issue of Artificial Intelligence and inventorship

IP FRONTIERS

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Artificial intelligence (AI) refers to the development and implementation of computer systems to execute tasks that typically require human intelligence, such as decision making and problem solving. The adoption of AI has become increasingly prevalent across various industries, as organizations learn to leverage AI systems to analyze data, automate tasks, and improve operational efficiency. AI technology can even be employed to revolutionize the inventive process, as innovators are harnessing its capacity to brainstorm, prototype, and generate solutions that might be otherwise overlooked. However, the rapid advancement of AI also brings about the need for regulations to mitigate the potential risks associated with unregulated AI systems, particularly as it intersects with the issue of intellectual property and inventorship.



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Biden sought to address the growing need for standards to regulate the use of AI across several societal sectors. The Order, directed towards “Safe, Secure, and Trustworthy Artificial Intelligence”, aims to establish a framework for responsible AI development, deployment, and use in the inventive process. The Order set out eight guiding principles, the second of which dictates that “AI must promote responsible innovation and competition”. Highlighting long felt uncertainties surrounding AI-tools, the Order tasked the United States Patent and Trademark Office (USPTO) with publishing guidance to patent examiners and applicants addressing the “use of AI, including generative AI, in the inventive process, including illustrative examples in which AI systems play different roles in inventive processes” and how “inventorship issues ought to be analyzed” in each example. Executive Order No. 14,110 (2023), Section 5.2(c) (i). President Biden further directed the USPTO to work alongside the United States Copyright Office to construct new directives

governing the adoption of AI and draft recommendations about the use of copyrighted materials in AI training. The Order deemed the collaboration between USPTO and US Copyright Office necessary to “promote innovation and clarify issues related to AI and inventorship of patentable subject matter.” Although the Order is silent on the topic of trademarks, its reference to “promoting competition” could have broad implications, suggesting the concern that AI systems used in product recommendation may create bias against smaller companies in the marketplace.

The current position of the USPTO asserts that inventions generated exclusively through AI are ineligible for patent protection, aligning with holdings from recent case law. One seminal case, *Thaler v. Vidal*, provides a clear stance on the question of AI and patent inventorship. *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022). In 2020, computer scientist Stephen Thaler filed two patent applications listing an AI as the sole inventor. Thaler held that the AI conceived of the inven-

tions autonomously, and subsequently reduced them to practice. In his appeal, Thaler argued that in the Patent Act, Congress does not restrict the term “inventor” to being defined solely as a natural person, maintaining that this language was intentionally broad to accommodate technological change. The Court ruled against Thaler’s interpretation of the Patent Act, holding that an AI cannot be considered the sole inventor on a patentable invention. The Court provided its own analysis of the language of the Patent Act, which defines an “inventor” as the “individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.” 35 U.S.C. §100(f). The Court further acknowledged that although the Patent Act does not define “individual,” the language of the statute indicated that “individual” denotes a human being, citing the use of gendered pronouns “himself” and “herself” rather than “itself” in reference to “individual.” The USPTO, and other Federal Circuit holdings, have maintained this reading of the statutory provisions, upholding that inventors must be natural persons. *E.g. University of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V*, 734 F.3d 1315 (Fed. Cir. 2013).

Existing precedent fails to provide insight regarding AI inventorship issues outside of the categorical scenario in which an AI system is the sole inventor or creator. Even before President Biden’s execu-

tive order, and months after it reinforced Federal Circuit holdings, the USPTO solicited comments on the issue of AI and inventorship, acknowledging the need for a more nuanced discourse surrounding the use of AI-tools in the inventive process. President Biden’s Order instructed the USPTO to publish its guidance for examiners and applicants within 120 days of the order, setting the due date at end of February 2024.

Patent practitioners are cautiously awaiting explicit guidance from the USPTO regarding inventorship in the context of AI collaboration. As AI tools become more prevalent in driving innovation, it has become increasingly imperative to establish clear regulations on how inventorship is defined when a human and an AI are working in collaboration to develop patent-eligible technologies. However, the USPTO may face challenges in providing comprehensive answers to all the questions raised by the Order due to the speed with which AI systems are advancing, recent case law limitations, and the truncated time frame with which it must draft its directives. Some urgent questions that the impending guidelines should address include:

- When a human and AI collaborate, how will the invention be defined?
- How can the AI-portion of a patentable invention be distinguished?
- To what extent can AI be used in the inventive process before the invention is deemed unpatentable?

- If an AI can be considered a co-inventor, what will be considered prior art? Does everything available to the AI (i.e. the entire Internet) render the AI-portion of the invention non-obvious?

If current trends in AI implementation continue, there will likely be a growing number of technologies, and corresponding patent applications, that integrate AI tools to facilitate the inventive process. If the USPTO is too restrictive with their guidelines regarding AI’s role in inventorship, it may discourage companies from investing in and pursuing critical AI-generated technologies. These directives must strike a balance between promoting American innovation and protecting and accurately assessing human inventorship. If the USPTO is successful in its assignment, the US patent system will come away with stronger AI governance, safeguards to protect human inventors, and a more precise definition of human inventorship. If the USPTO guidelines are incomplete, however, the issue of AI inventorship will certainly resurface.

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