

USPTO Releases Guidance on AI and Inventorship

The agency offers a practical test with examples for determining patentability of AI-assisted inventions that is grounded in feedback from stakeholders.

In its continuing effort to respond to President Biden's AI-related directives and provide clarity to stakeholders and personnel on AI issues, on February 13, 2024, the US Patent and Trademark Office (USPTO) released detailed guidance on "how to determine whether the human contribution to an innovation is significant enough to qualify for a patent when AI also contributed" (Guidance).¹ Although further refinement will be needed, the Guidance is critically important, as AI systems, including generative AI, are becoming ever more prominent in the inventive process.

Background

On October 30, 2023, President Biden issued an ambitious Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.² On a macro level, the Executive Order attempts to balance the goals of fostering innovation and global competitiveness with the intense pressure to secure and regulate AI in the United States. With regard to patents specifically, President Biden set forth a time frame for the USPTO to prepare guidance that clarifies issues surrounding AI and inventorship of patentable subject matter, requiring the USPTO to accomplish the following:

[W]ithin 120 days of the date of this order, publish guidance to USPTO patent examiners and applicants addressing inventorship and 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, in each example, inventorship issues ought to be analyzed;

[S]ubsequently, within 270 days of the date of this order, issue additional guidance to USPTO patent examiners and applicants to address other considerations at the intersection of AI and IP, which could include, as the USPTO Director deems necessary, updated guidance on patent eligibility to address innovation in AI and critical and emerging technologies.³

The Guidance — Three Major Takeaways

In response to the Administration's AI Executive Order, on February 13, the USPTO released detailed guidelines on how to determine inventorship for creations developed using AI assistance. This guidance is a major step forward in shaping policy as it relates to AI issues, but it is by no means the USPTO's first effort to do so. For several years, the USPTO has provided its views on many of these issues and

engaged in substantial outreach to stakeholders to identify their AI-related concerns.⁴ That public feedback, according to the USPTO Director, is reflected in the Guidance.⁵

There are three major takeaways from this new Guidance:

1. The USPTO reconfirms that only a natural person can be a named inventor or co-inventor on a US patent, as described in *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022).⁶ This determination forms the basis for the USPTO's further assessment of inventorship for AI-assisted inventions and the impact of that assessment on patentability.
2. Because AI is treated like any other tool, an AI-assisted invention may be patentable, but one or more natural persons must have significantly contributed to every claim of the patent.⁷ The USPTO's approach to AI and inventorship avoids some of the more technical and metaphysical questions that can frustrate advancements in practical AI regulation. "Instead of considering whether or not the contributions of the AI system to an invention would rise to the same level of inventorship if those contributions were made by a human," according to the USPTO, "the key question this guidance helps address is whether the human named on a patent made a significant enough contribution to be named as an inventor."⁸
3. There is no specific requirement that a patent applicant disclose whether the invention was created with AI assistance, but existing rules, "in rare circumstances," may indirectly necessitate such disclosure.⁹ Indeed, the Guidance "does not take into consideration whether any intellectual property was utilized in the training of any AI systems used as part of the inventive process."¹⁰ Notably, this approach differs from the US Copyright Office's policy, which does require an applicant to disclose the inclusion of AI-generated content in a work submitted for registration.¹¹

Principles for Determining Inventorship of AI-Assisted Inventions — the *Pannu* Factors

Whether a natural person has made a significant contribution to the technology that would allow him/her to be a named inventor on a US patent is judged using factors from *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 (Fed. Cir. 1998). These factors consider whether the person:

- a) contributed in some significant manner to the conception or reduction to practice of the invention;
- b) 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
- c) did more than merely explain to the real inventors well-known concepts and/or the current state of the art.¹²

Applying the *Pannu* factors, the Guidance makes clear that *no* significant contribution can be found where the natural person merely:

- recognized a problem or pursued a general goal or research plan;
- reduced an invention to practice; or
- owned or oversaw an AI system used in the creation of an invention.¹³

In contrast, the Guidance explains that significant contribution *could* be found where the natural person:

- designed, built, or trained an AI system to reflect a specific problem and produce a particular solution;
- took the output of an AI system and created an invention;
- conducted a successful experiment using the AI system's output, even if he/she is unable to establish conception until after the invention had been reduced to practice; or
- developed an essential component from which the claimed invention was derived, even though he/she did not take part in each activity that led to conception.¹⁴

In addition to the scenarios set forth in the February 13 guidance itself, the USPTO produced two sets of extended hypotheticals applying the *Pannu* factors. One set centers on a mechanical invention.¹⁵ The other centers on a therapeutic compound.¹⁶

Interplay Between AI-Assisted Inventorship Policy and Existing Patentability Rules

In the Guidance, the USPTO also describes certain types of AI-related inventorship issues that US patent applicants may confront as they seek to fulfill other application requirements. This description is a further explication of the USPTO's conclusion that "the agency's existing rules are adequate to address the challenges that the USPTO is likely to face" regarding AI.¹⁷ For example:

- An applicant has a **duty to disclose** all information that is material to patentability, which would include information demonstrating that "a named inventor did not significantly contribute to the invention because the person's purported contribution(s) was made by an AI system."¹⁸
- As part of the **duty of reasonable inquiry**, an applicant must assess "whether the contributions made by natural persons rise to the level of inventorship."¹⁹
- There is a **requirement to name the inventor(s)** in a patent application. If no natural person significantly contributed to a claim, then that claim must be canceled or amended.²⁰
- If an examiner has a reasonable basis to conclude that a named inventor may not have contributed significantly to a claim, there is a further **requirement for information**, even if that information is not material to patentability.²¹
- The **inventor's oath** cannot be filed on behalf of an AI system, even if that system made contributions to one or more claims in a patent application.²²
- Because an AI system cannot be a named inventor, it has no **right to assign** ownership of an invention and thus assignments from AI systems are disallowed at the USPTO.²³
- The **requirements for a priority claim** to a foreign application that names an AI system as an inventor will not be accepted.

Looking Forward

On the applicant side, it appears that it is advisable under the Guidance for a purported inventor to keep detailed records of his/her contribution to the technology for which protection is sought and equally detailed records on precisely how AI was used in that innovative process. Company policies should be updated to reflect this necessity. Otherwise, companies may face situations in which an AI-assisted invention is unpatentable.

On the USPTO side, the agency has pledged to continue its comprehensive public outreach, further elucidating on the Guidance and gathering additional feedback from stakeholders on AI-related hurdles to patentability. This includes:

- a March 5, 2024, webinar from 1-2 p.m. ET on the contours of the Guidance;
- a March 27, 2024, public symposium on IP and AI at Loyola Law School in Los Angeles (in person and remotely);
- through May 13, 2024, collecting further comments on AI and patentability.

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Endnotes

¹ Katherine K. Vidal, *AI and inventorship guidance; Incentivizing human ingenuity and investment in AI-assisted inventions*, USPTO (Feb. 12, 2024), <https://www.uspto.gov/blog/director/entry/ai-and-inventorship-guidance-incentivizing> ("Director's Blog").

² Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, THE WHITE HOUSE (Oct. 30, 2023), <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>.

³ *Id.* § 5.2 (c)(i)-(ii).

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- ⁴ See Request for Comments Regarding Artificial Intelligence and Inventorship, 88 Fed. Reg. 9492 (Feb. 13, 2023) (summarizing USPTO's AI-related efforts and outreach) ("FR Request for Comments").
- ⁵ Director's Blog; see FR Request for Comments at 9492-95.
- ⁶ 89 Fed. Reg. 10043, 10045-47 (Feb. 14, 2024) ("USPTO AI Guidance").
- ⁷ USPTO AI Guidance at 10047-48.
- ⁸ Director's Blog.
- ⁹ See USPTO AI Guidance at 10049; Director's Blog.
- ¹⁰ Director's Blog.
- ¹¹ Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16193 (Mar. 16, 2023).
- ¹² USPTO AI Guidance at 10047.
- ¹³ *Id.* at 10048-49.
- ¹⁴ *Id.*
- ¹⁵ *Transaxle for Remote Control Car (Example 1)*, USPTO, <https://www.uspto.gov/sites/default/files/documents/ai-inventorship-guidance-mechanical.pdf>.
- ¹⁶ *Developing a Therapeutic Compound for Treating Cancer (Example 2)*, <https://www.uspto.gov/sites/default/files/documents/ai-inventorship-guidance-chemical.pdf>.
- ¹⁷ Katherine K. Vidal, *The Applicability of Existing Regulations as to Party and Practitioner Misconduct Related to the Use of Artificial Intelligence*, USPTO at 5 (Feb. 6, 2024), <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>.
- ¹⁸ USPTO AI Guidance at 10049.
- ¹⁹ *Id.* at 10049-50.
- ²⁰ *Id.* at 10050.
- ²¹ *Id.*
- ²² *Id.* at 10050-51.
- ²³ *Id.* at 10051.